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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	BERKE-53633
		Application Number	
Title of Invention	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		
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Title of the Invention	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		
Attorney Docket Number	BERKE-53633	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	12	Suggested Figure for Publication (if any)	2

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		Application Number	
Title of Invention	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		

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☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
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Prior Application Status	Pending		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
	Continuation of	12401101	2009-03-10		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
12401101	Division of	11354798	2006-02-15	7596521	2009-09-29
Prior Application Status	Abandoned		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
11354798	Continuation of	09545628	2000-04-07		
Prior Application Status	Expired		Remove		
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	BERKE-53633
		Application Number	
Title of Invention	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		

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First Name	Scott W.	Last Name	Kelley	Registration Number
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PROCESS FOR DETERMINING OBJECT

LEVEL PROFITABILITY

RELATED APPLICATION

[0001] This application is a continuation application of United States Patent Application Serial No. 09/545,628, filed April 7, 2000, which claims priority from provisional patent application Serial No. 60/128,769, filed April 9, 1999.

BACKGROUND OF THE INVENTION

[0002] The process of measuring profit is an important business activity. Profit measures are the primary basis for understanding financial performance and value creation in a business. Once a business is owned publicly, an independent review of a firm's financial position becomes a mandatory process well known as measuring profit according to "generally accepted accounting principles" (GAAP.) While these standards and regulations are adequate for an external view of a company's financial condition, the measurement of profit contribution amongst the business is required for proper management of the franchise. Internal financial performance measurement is especially complex for a multi-product, multi-location, and/or large customer based businesses. The use of internal financial performance measures drives most businesses planning processes, management incentive processes and control processes. Many businesses have found that internal profit measures can be consistent with the external financial statement measures. These businesses implement internal accounting processes consistent with external measures using common metrical units similar to a GAAP Financial Statement presentation - a consistent metric or "yard stick" (i.e. numerically the sum-of-the-profit-parts equals the whole company's profit according to GAAP.)

[0003] Many businesses today are struggling to accurately measure profit contribution at a level necessary to accurately measure profit contribution of individual customer interactions. The reason for dilemma is found in the manner in which generally accepted accounting principles are applied. Fundamental accounting theory takes lumpy cash flows that occur in the day-to-day management of a business conducted with its customers and transform them into smoothed income or expense items (known as accruals.) At the end of every profit reporting cycle these income and expense items are consolidated into a period end balance sheet and income statements. Reports on the state of the business can then be presented by accountants in formats necessary for the independence of ownership and management that is the basis of capital markets. Indeed, most businesses today would call its accounting process critical for survival. Unfortunately, the complexity of maintaining an accurate financial accounting process has obscured the measurement of profit contribution at a very detailed level. While the aggregate cash flows of a large company are relatively stable the individual customer-to-business cash flows are very volatile. Accounting practice to date has been comfortable with using aggregate cash flow information for the accrual accounting process (10), as illustrated in FIG. 1. The accounting process based on aggregates has lead to blindness by businesses of incremental customer profit contribution measures necessary to implement customer level decision making, particularly in large businesses with many millions of customers.

[0004] General Ledgers (double entry book keeping systems) (11) were early adapters of automated data processing solutions due to the match between computing capabilities of computers and the execution of the accounting process. The benefit, from reduced cost for accounting processes easily justified large expenditures in information processing technology, both in hardware and in software development. The complexity of today's general ledger applications and the age of these systems have retarded the innovation of new automated

techniques taking advantage of technological advances in massively parallel computing capability.

[0005] References describing generally accepted accounting principles and financial performance measurement procedures are listed below, and are incorporated by reference herein:

[0006] The money market /, Marcia Stigum. 3rd ed. Homewood, Ill. : Dow Jones-Irwin, c1990.

[0007] Money market and bond calculations /, Marcia Stigum and Franklin L. Robinson. Chicago : Irwin Professional Publ., c1996.

[0008] Money market calculations : yields, break-evens, and arbitrage /, Marcia Stigum, in collaboration with John Mann. Homewood, Ill. : Dow Jones-Irwin, c1981.

[0009] The money market : myth, reality, and practice /, Marcia Stigum. Homewood, Ill. : Dow Jones-Irwin, c1978

[0010] Quantifying the market risk premium phenomenon for investment decision making: September 26-27, 1989, New York, New York /, Keith P. Ambachtsheer ... [et al.] ; edited by William F. Sharpe and Katrina F. Sherrerd ; sponsored by the Institute of Chartered Financial Analysts. Charlottesville, VA : CFA : May be ordered from Association for Investment Management and Research, c1990

[0011] Fundamentals of investments /, Gordon J. Alexander, William F. Sharpe, Jeffery V. Bailey. 2nd ed. Englewood Cliffs, N.J. : Prentice Hall, c1993.

[0012] Microeconomics /, Richard G. Lipsey . [et al.]. 9th ed. New York : Harper & Row, c1990.

[0013] Economics of the firm : theory and practice /, Arthur A. Thompson, Jr., John P. Formby. 6th ed. Englewood Cliffs, N.J. : Prentice Hall, c1993.

[0014] The FASB conceptual framework project, 1973-1985 : an analysis /, Pelham Gore. Manchester, UK ; New York : Manchester University Press ; New

York, NY, USA : Distributed exclusively in the USA and Canada by St. Martin's Press, c1992.

[0015] Statement of financial accounting standards no. 5 : impact on corporate risk and insurance management /, Robert C. Goshay. Stamford, Conn. : Financial Accounting Standards Board of the Financial Accounting Foundation, 1978.

[0016] Common cents : the ABC performance breakthrough : how to succeed with activity-based costing /, Peter B.B. Turney. Hillsboro, OR : Cost Technology, 1991.

[0017] A guide to the SQL standard; a user's guide to the standard relational language SQL /, Date, C. J. :Addison-Wesley Pub. Co., 1987.

[0018] Accountants SEC practice manual, Kellogg, Howard L. :Commerce Clearing House, 1971.

[0019] Risk theory; the stochastic basis of insurance /, Beard, R. E. (Robert Eric): 3rd ed., Chapman and Hall, 1984.

[0020] Practical risk theory for actuaries /, Daykin, C. D. (Chris D.): 1st ed., Chapman & Hall, 1994.

[0021] Actuarial mathematics / :2nd ed., Society of Actuaries, 1997.

[0022] Objectives and concepts underlying financial statements / United Nations, 1989.

[0023] Cost accounting for factory automation / National Association of Accountants, 1987.

[0024] Interest rate risk models ;; theory and practice / : Glenlake Publ. Co. - Fitzroy Dearborn, 1997.

[0025] Economic analysis for management decisions, Elliott, Jan Walter: R. D. Irwin, 1973.

[0026] Microeconomic theory /, Ferguson, C. E. (Charles E.): 4th ed. R. D. Irwin, 1975.

[0027] Planning and measurement in your organization of the future /, Sink, D. Scott.: Industrial Engineering and Management Press, 1989.

[0028] Economics /, Paul A. Samuelson, William D.

Nordhaus. 16th ed. Boston, Mass : Irwin/McGraw-Hill, c1998.

[0029] Setting intercorporate pricing policies /, Business International Corporation, New York : Business International Corporation, 1973.

[0030] Controversies on the theory of the firm, overhead allocation, and transfer pricing /, Murry C. Wells, editor. New York : Arno Press, 1980.

[0031] The transfer pricing problem : a theory for practice /, Robert G. Eccles. Lexington, Mass. : Lexington Books, 1985.

[0032] Transfer pricing /, Clive R. Emmanuel and Messaoud Mehafdi. London ; San Diego : Academic Press, 1994.

[0033] Internal transfer pricing of bank funds /, by Valerie Giardini. Rolling Meadows, Ill. : Bank Administration Institute, 1983.

[0034] Transfer pricing : economic, managerial, and accounting principles /, by Clark J. Chandler ... [et al.] Washington, D.C. : Tax Management, Inc., 1995.

[0035] International intracorporate pricing; non-American systems and views, Jeffrey S. Arpan. New York, Praeger Publishers, 1971.

[0036] There remains, however, a need to resolve profit measures at a detailed level without using analytical models or statistical extrapolation. Such a process should utilize rule driven and data base measurement processes which will give large scale businesses a lower cost of maintenance and a technologically scalable tool to measure profit at a level of precision or resolution not possible in prior financial performance measurement processes. The present invention fulfills this need and provides other related advantages.

SUMMARY OF THE INVENTION

[0037] Prior approaches to management's desire for an accurate measure of individual decisions (incremental or marginal) profit impact have been solved by automating the accounting process for implementing accounting methods. Cash flows are transformed into two parts, a debit part or credit part, according to an

accounting rule. Other non-cash accounting rules are implemented to create "accrual" debits and credits smoothing income and expenses and adjusting for future contingencies. (see Management Accounting Theory books or any source of accounting theory, where the balance sheet equation and the consolidation process, the combination of flows and stocks of financial data, are developed.) The first large scale use of automated computing technology is frequently found to be the automation of the financial control or accounting processes, since it is easy to develop software to implement accountancy rules and there were large benefits in staff productivity easily observable. For businesses to observe marginal profit contributions it was necessary to use accounting information and make reasoned conclusion on how to apportion or extrapolate this information into incremental customer, product or organizational profit detail. (See Fig. 1)

[0038] What these methods of profit measurement lack are the adequate level of detail to measure an individual or incremental decision's impact on profit. To gain this new level of profit resolution this invention is designed to use micro profit measurement rules applied at a granular level consistent with standard accounting practice using a combination of actuarial science and mathematical set theory. The invention is designed to utilize massively parallel computing operations using relational database management techniques enabling profit measurement at a level not available today in a large individual customer scale business. This invention does this through a consistent application of measures to a class of business entities which represent the smallest common component of profit measurement desired - the Profit Object.

[0039] The invention's method of apportionment of non-object related profit measures specifies a method which will not change the ordinal or cardinal profit contribution ranking when only marginal profit measures are counted. This specification is what makes it possible to apply marginal measurement rules (see Micro-economic theory literature) with macro economic principles; namely the sum-of-the-parts equals the whole criterion which is the basis of financial accounting theory and practice.

[0040] The invention decomposes profit measurement analytical calculations into five classifications:

1. Marginal profit measures associated with use of the business' balance sheet resources;
2. Marginal measures of non-balance oriented revenues;
3. Marginal cost measures;
4. Marginal measures of expected costs or revenues; and,
5. Apportioned cost measures.

[0041] This classification provides for additive profit measures across the five components. The calculation process is designed to be independent across classes 1, 2, 3, & 4 above with the addition of class five to preserve sum-of-the-parts integrity without simultaneous calculations typically found in profit measurement processes. When all five profit measures are summed at the lowest level of profit detail, a consistent set of profit values for all types of aggregations are possible - all profit measurement then originates from the same point in a profit database. The simultaneous use of these five analytical frameworks makes possible a detailed level of profit calculation consistent with GAAP.

[0042] In particular, the present invention relates to a process for determining object level profitability. In its basic form the process includes the steps of:

1. Preparing information to be accessed electronically;
2. Establishing rules for processing the prepared information;
3. Calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information;
4. Calculating a fully absorbed value of profit adjustment using established rules as applied to the selected set of prepared information; and,
5. Combining the at least one marginal value of profit and fully absorbed value of profit adjustment to create a measure for object level of profitability.

[0043] More specifically in the step of preparing information to be accessed electronically, the database is prepared, object attributes are extracted,

conditioned and loaded into the database, and financial statement attributes are extracted, conditioned and loaded into the database. If desired the step may also include extracting, conditioning and loading the event attributes into the database, and calculating funds transfer treatment rates.

[0044] In the step of establishing for processing the prepared information for rule establishment providing the information necessary to select objects and perform the correct profit calculus is accomplished. The step of calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information includes calculating net interest, other revenue, direct expense, and/or provision for the selected set of prepared information. Net Interest (NI) is the summation of interest income, value of funds provided and earnings on equity funds used less the sum of interest expense and cost of funds used. Other Revenues (OR) is a measure of profit contribution from non-interest related sources. Direct Expense (DE) is the profit value reduction due to marginal resource consumption by the object. Provisioning (P) is the expected profit value adjustment for future outcomes related to the object.

[0045] The step of fully absorbed profit adjustment, Indirect Expense (IE), is an apportioned profit value adjustment for all non-object related resource consumption by the business.

[0046] In the step of combining the five profit values, $NI + OR - DE - P - IE$, may be adjusted for taxes and/or object economic value.

[0047] The foregoing elements of the invention, which have been explained at a micro elemental level can be advantageously employed in massive amounts and parallel process power. For example, in the macro perspective of the invention the basic steps can be utilized.

[0048] The present invention gives management profit measures tailored to its need for accurate decision oriented profit information required to manage a large organization based on profit measurement. This invention gives businesses the ability to resolve profit measures at a level of detail necessary for all types of application of profit oriented performance measurement.

[0049] Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings which illustrated, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0050] The accompanying drawings illustrate the invention. In such drawings:

[0051] FIGURE 1 shows existing profit calculation process flow.

[0052] FIGURE 2 shows analytical processing relationships.

[0053] FIGURE 3 shows the invention's information flow.

[0054] FIGURE 4 shows the invention's data relationships.

[0055] FIGURE 5 shows the invention's process flow.

[0056] FIGURE 6 shows the invention's database preparation process step detail.

[0057] FIGURE 7 shows the rule maintenance process.

[0058] FIGURE 8 shows the net interest measuring process.

[0059] FIGURE 9 shows the other revenue measuring process.

[0060] FIGURE 10 shows the direct expense measuring process.

[0061] FIGURE 11 shows the provision measuring process.

[0062] FIGURE 12 shows the indirect expense measuring process.

[0063] FIGURE 13 shows the profit component aggregation and adjustment process.

[0064] FIGURE 14 shows a partial relational database schema for an airline industry example.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0065] As shown in the accompanying drawings for purposes of illustration, the present invention is concerned with a detail profit metric (DPM) designed to be a computer database application (i.e. software) for profitability measurement. DPM's profit measurement system is fundamentally different from the common profit measurement system used by regulators and public accountancy - yet, it is consistent with generally accepted accounting principles.

[0066] With reference now to FIGS. 2 and 3, the invention is designed to utilize massively parallel computing operations using relational database management techniques enabling profit measurement at a level not available today in a large individual customer scale business. This invention does this through a consistent application of measures (27) to a class of business entities (32) which represent the smallest common component of profit measurement desired - the Profit Object.

[0067] The invention's method of apportionment of non-object related profit measures (34) specifies a method which will not change the ordinal or cardinal profit contribution ranking when only marginal profit measures are counted. This specification is what makes it possible to apply marginal measurement rules with macro economic principles; namely the sum-of-the-parts equals the whole criterion which is the basis of financial accounting theory and practice.

[0068] As shown in FIG. 2, the invention decomposes profit measurement analytical calculations into five classifications:

1. Marginal profit measures associated with use of the business' balance sheet resources, also referred to as funds transfer pricing (21);
2. Marginal measures of non-balance oriented revenues, also referred to as non-interest revenues (23);
3. Marginal cost measures, also referred to as event costing (22);
4. Marginal measures of expected costs or revenues, also referred to as provisioning (24); and,

5. Apportioned cost measures and indirect costing, in accordance with an allocation model of the present invention (26).

[0069] This classification provides for additive profit measures across the five components. The calculation process is designed to be independent across classes 1, 2, 3, & 4 above with the addition of class five to preserve sum-of-the-parts integrity without simultaneous calculations typically found in profit measurement processes. When all five profit measures (49) are summed at the lowest level of profit detail, a consistent set of profit values for all types of aggregations (30) are possible - all profit measurement then originates from the same point in a profit database. The simultaneous use of these five analytical frameworks makes possible a detailed level of profit calculation consistent with GAAP.

[0070] Figure 3 illustrates DPM data flow: where systems of record (SOR's) (31) data source object (32) and object oriented event (33) data; where General Ledger data sources apportionment data; and, where event and general ledger data are used with activity based costs (35). DPM is based on object level detail of cash flows, customer events and management profit allocations of profit arising from non-customer related events. More particularly, DPM is based on object level detailed data extracted from the SOR's (31), customer object oriented event data (33) and non-SOR Apportionments (34). DPM provides both marginally (20) and fully absorbed profit measures (25), something traditional "general ledger" based profit accounting systems cannot accomplish due to reliance on aggregate debit and credit amounts (10). The differences in measures are directly observable in comparisons of detailed customer (13), product (14) or organizational (15) profit values calculated using prior art (12) methods with profit values derived using aggregations (30) of object data, per figure 3.

[0071] More specifically, with reference to FIG. 4, in the step of preparing information to be input (40) to be accessed electronically, a database is prepared. Object attributes are extracted, conditioned, and loaded into the database (43), and financial statement attributes are extracted, conditioned and loaded into the

database (45). If desired, the method may also include extracting, conditioning and loading the event attributes into the database (44) and calculating funds transfer treatment rates and activity based costing rates (46).

[0072] In the step of establishing for processing (41) the prepared information on how to select objects and perform the correct profit calculus rule mapping (47) is accomplished. The step of calculating (48) at least one marginal value of profit using established rules as applied to a selected set of prepared information includes calculating net interest (NI), other revenue (OR), direct expense (DE), and/or provision for the selected set of prepared information. Provisioning (P) is expected profit value adjustment for future outcomes related to the object. The step of fully absorbed profit adjustment, indirect expense (IE), is an apportioned profit value adjustment for a non-object related resource consumption by the business. The foregoing elements of the invention, which have been explained at a micro-elemental level, can be advantageously employed in massive and parallel processing power (41). The present invention gives businesses the ability to resolve profit measures at a level of detail (49) necessary for all types of applications of profit oriented performance measurement or detailed profitability data as an output (42) for enabling aggregation (30) to a particular customer, product or organization within a business.

[0073] The following is a definition of the inputs (attributes or measurement parameters), the method of processing and the output of the DPM process.

Definitions

Object Attributes (43)

[0074] These are data about the object being measured. Different businesses have different objects of detailed profit measurement. Examples of profit measurement objects include an airline using "seat" as the profit object, an insurance company using a "policy" object or a bank using an "account" object - these objects represent the lowest level of detail required to support consistent internal multi-dimensional internal profit analyses. Types of data attributes

associated with these objects include: balances, rates (or interest accrued), product identification, exposures, expected loss frequency, and various dates (e.g., start, finish, rate reset, last payment, next payment, life, etc.)

Event Attributes (44)

[0075] These data are about events (a resource consuming activity) related to the object being measured. Data found here include object identification, transaction amounts, quantities, event location, event time, counter-party identification, event type (e.g., payments, interest paid or earned, purchases, refunds, etc.) At least one of these attributes must relate the event to at least one Object.

Financial Statement Attributes (45)

[0076] These are data about the company's financial statement. Data found here include balance sheet and profit statement amounts usually aggregated by the legal or management entities that own a group of objects being measured. These data will be current accounting period either actual or planned.

Profit Measurement Parameters (46)

[0077] These data include parameter values necessary to perform the object or event level profit calculations. The major classifications of these data are:

- Funds valuing rates ("Treatment Rates") - DPM's funds transfer pricing method uses maturity opportunity rates used in valuing each object's marginal use or source of internal funds (balance sheet resources).
- Unit Costs - DPM's Direct Expense calculations require unit cost parameters. DPM can calculate unit costs, when unit cost data are not available; in these instances, if the total cost is provided a financial statement attribute and then unit cost is derived by dividing total cost by an appropriate attribute quantity amount.

- Allocated Amounts - In both Other Revenue and Indirect Expense calculations this amount is apportioned amongst all objects in a group.
- Miscellaneous Calculation Values - Some of DPM's calculations require non-system of record values. For example, number of days in profit measurement period or equity allocation weighting. These values are known as "modeling" parameters.
- Amortization Parameters - Interest amortization requires an interest rate and expected life attributes. Straight line and declining balance methods of amortization require expected life values.
- Expected Profit Adjustment Measurement Parameters - Provision calculations require appropriate attributes, such as: expected loss rates, reserve percentages, exposure factors, recovery rates, default probabilities and collection costs.
- Tax Rates - Tax rates are required for after-tax profit calculation. DPM is designed to calculate pre-tax income on a taxable equivalent basis (where an single effective tax rate is all that is required to transform pre-tax income into after tax earnings.)

Profit Measurement Rule Specification

[0078] DPM's processing approach is to combine profit measurement techniques with (non-modeled) data and calculation parameters. Each application of this calculus is called a rule (47). DPM is designed to allow the user the freedom to associate a group of objects with a rule and to use object-level information in combination with rule parameters to calculate profit values. The DPM invention uses profit measurement rules separate from, but applied to, object data and the use of relational database concepts, giving the user flexibility in both the assignment and depth of definition of measurement rules and measurement resolution. Use of this method is especially suited for massively parallel computing technology where linear scaleable capital investment in

processing technology is possible vis-à-vis object and event count and rule complexity.

[0079] The types of calculation (Rule types) are:

- **Funds Treatment** - Every object with cash flows affecting a financial statement's balance sheet requires a method of valuing an object's use or source of funds. The common name for this approach to valuing is known as "Matched Maturity Funds Transfer Pricing." DPM uses a canonical representation of an object's funding characteristics for computational performance. DPM's methodology requires effective yield adjustment to eliminate the allocation of interest payable / receivable required by GAAP. A value, based on effective yield adjusted market price (the yield curve), is then determined by DPM for each instance that requires an interest rate transfer pricing to calculate an object's marginal Net Interest (NI).
- **Equity Allocation** - In order for precise net interest revenue or economic value adjusting calculations the amount of equity funds required at an object level must be determined. DPM's equity allocation to the object level calculations may use any of the following methods: simple ratios; regulatory definitions; economic allocations based on econometric modeling (see book on Modern Portfolio Theory) methodologies; or, as statistically defined allocations.
- **Balance Sheet Allocations** – Complete calculation of Net Interest may require an object level allocation of some financial statement balance sheet amounts.
- **Apportionment** - In Other Revenue, Provision and Indirect Expense calculations are applied at the object level using Financial Statement Attributes which are not related directly to an object. These profit adjustments are made so that the sum of all object profit equals the whole enterprise's profit - an important property of DPM's output. Accountants refer to this profit measurement technique as "full allocation of profit." DPM's approach is to pool indirect costs and revenues and then apportion them. Apportionment rules specify how the pool is completely allocated to appropriate objects. DPM uses a specific closed form (mathematical formula that require only

information known in the current period and no iterative computation) allocation rules.

- Amortization - Some types of income or expense are deferred or accrued over multiple periods including and subsequent to the current accounting period. This is common to accrual accounting methods used in financial statement presentation and give rise to timing differences between cash flows and their related profit as presented in a financial statement in any accounting period. Since DPM is designed to mirror a financial statement's profit measure it must support deferral and accrual accounting principles. Amortization methods are included in DPM to reflect these GAAP concepts. DPM's amortization methods include: interest method of amortization (used for interest income and expense accruals and for deferral of fees that are in lieu of interest); and, straight line or declining balance amortization methods (used for cost or income deferrals and capitalized investment depreciation.)
- Other Revenue Pricing - In situations where object and event activity can be used to derive object level income or fees DPM provides for the calculation of these drivers of profitability in Other Revenue profit calculations. These calculations take the mathematical form of a linear combination of event or object values and modeled coefficients.
- Direct Expense - Calculation of object profit adjustment due to object related activity requires rules that take the form of linear combinations of event or object values and modeled coefficients.
- Indirect Expense - In situations where expense apportionment or amortization amounts are aggregated the user may want different rules applied depending on the path (or dimension) of aggregation. These rules allow for multiple profit calculations rules to be applied to derive multiple object level indirect expense amounts.
- Provision - Adjusting current profit for expected future value changes is known as "actuarial" provisioning. The technique is well known by the financial industry's accounting practice. DPM applies actuarial based methods in its

object level profit calculations where the Provision pre-adjusts profit for contingent or known exposures to future profit.

- Taxable Equivalent Gross-up - Profit is usually an after-tax measure. Some events or portions of some object profit may be excluded from normal taxation. DPM's approach is to adjust these pre-tax values so that a singular tax rate can be used to convert pre-tax profit into after-tax values, known as taxable equivalent adjustment. For the purpose of the remaining detailed description all profit and loss profit measures are tax equivalent amounts (e.g., TEG * Amount.) These rules use object and event attributes to drive an adjustment for each of the five classes of profit amounts to a taxable equivalent basis.
- Interest Yield Adjustments - Since DPM can derive profit for any length of accounting period from daily to annual, the adjustment of cash interest payments and the financial statement's accrual or smoothed representation of interest related Profit, DPM requires a method for converting cash interest amounts to financial statement accrual amounts. DPM implements the mathematical concept of "effective interest rate" conversion to accomplish this type of calculation.

[0080] Before the calculation rules can be applied at the object or event level a calculation rule must be associated with an object, designating the methods DPM will use to calculate components of profit at the object level. An object grouping is designed to associate objects having common and defined set of object attributes for similar processing (note that a group may consist of one object). The association of a group of objects with a calculation rule is referred here as a Rule Map (47).

Inheritance Functionality

[0081] In nature the concept of inheritance is where a descendant receives properties of its predecessors, in computer science inheritance is defined in "Object Oriented" software development theory as the ability to increase function

without loss of function using the same data. In DPM the concept of inheritance is applied and in essence it means that an implementation can change Rules (change profit calculus) without losing any profit measurement capabilities of the preceding state(s). This feature allows DPM users a unique ability to apply techniques of differing levels of sophistication to different sets of objects according to the trade-off between the value of more accurate object-focused profit measures and the cost of obtaining and populating data and maintaining Rule Maps.

[0082] The DPM system is designed for Rules to be applied to any object without loss of integrity of output. This design feature allows the user to incrementally migrate objects to increased measurement precision as justified. This valuable piecewise increase in functionality is possible due to DPM's combination of rules and data in a mathematical set theoretic framework (41). This approach allows for a relational database management system implementation (42). It is nearly impossible develop and maintain procedural based software with as much flexibility and with the capability to simultaneously support the number of calculation permutations required by DPM .

Restatement Functionality

[0083] Since DPM is a rule based system the ability to restate prior period's Profit calculations are systematically possible providing historical data exists. DPM's design of object level profit measurement enables a unique historical profit restatement capability. Three features of DPM's restatement capability are:

1. Produces a mathematically consistent time series (i.e. no measurement bias) of object level Profit. DPM restatement functionality is designed to apply the same Rules to all available historical object or event level data.
2. DPM's restatement functionality preserves object accrual integrity when the object history is restated for different length accounting periods. Implementations of daily, weekly, monthly, quarterly, semi-annual, or annual

profit calculations and mixing different periodicity in historical data without loss of analytical integrity.

3. Capable of object's profit history restatement. If a DPM user changes Rules or Rule Maps and/or changes the way a subset of object's Profit are calculated and if the historical data is available per the new set of Rules then the user can restate historical profit measures for these subset of objects.

Processing (see Fig. 5)

[0084] With reference to FIG. 5, the database is first populated (50). Rules are maintained (51), as will be more fully discussed herein, and the NI, OR, DE, and P are calculated (52-55). Next, the IE is calculated (56) to arrive at a calculation of the object profitability (57). This process is repeated for all objects. After the last object (58), the process is finished as the detailed profitability database is obtained. FIGS. 6-13 describe in more detail the steps taken in FIG. 5 in accordance with the present invention.

1. Populate Database (see Fig. 6)

[0085] Perform standard database administration actions to initialize data for the required calculations:

1. Perform database Initialization (60)
2. Extract, condition & load object attributes (61)
3. Extract, condition & load event attributes (62)
4. Extract, condition & load financial statement attributes (63)
5. Calculate and populate NI treatment rate attributes (64).

2. MAINTAIN OBJECT GROUPS AND RULE MAPS (SEE FIG. 7)

[0086] Populate or edit Rule parameters necessary to perform calculations. Rules definition is by association of specific, non-iterative calculation, as described below, a set of object or event attributes defined as a data filter (see Relational Data Base Management System textbooks). Rules have two pieces:

1. Parameters to drive the object selection or data filter for calculations (70); and,

2. Parameters specific to the appropriate calculation methodology (71).

[0087] An easy-to-use graphical user interface can be used to maintain these data for all rules (72).

[0088] The following processing steps, Steps 3 through 6 perform object and event level profit calculations. Steps 3, 4, 5, and 6 can be processed independently; step 7 requires values derived in step 3, 4, 5, and 6 and therefore occurs sequentially.

3. Calculate Net Interest for All Objects (see Fig. 8)

[0089] Net Interest is:

NI = Interest Income - Cost of Funds + Value of Funds - Interest Expense + Earning on Allocated Equity

[0090] Correct interest rates for calculation of interest income or expense depend on the length of the profit measurement period. Using actuarial mathematical techniques the bookkeeping required by GAAP for interest receivables and Payables can be avoided in NI calculus. A known technique (see M Stigum, Money Markets) to accomplish this adjustment for profit measurement according to GAAP (i.e. accruals) the following calculation is used to convert interest rates:

Let r_{new} = annualized rate with new compounding factor
 r = annualized rate with old compounding factor
 m = number of old compounding periods per year
 n = number of new compounding periods per year

Then
$$r_{new} = \left[\left(1 + \frac{r}{m} \right)^{m/n} - 1 \right] * n$$

NI CALCULATION RULE TYPE I

[0091] The object balance is either an asset or a liability amount for Type I calculation.

Let $AAB(o_i)$ = Average Asset Balance of the object o_i
 $ALB(o_i)$ = Average Liability Balance of the object o_i
 $rate_{asset}(o_i)$ = Effective interest rate for object o_i as an asset balance
 $rate_{liability}(o_i)$ = Effective interest rate for object o_i as a liability balance
 Rt = Treatment rate based on the identified treatment for the object's product attributes
 $Int\ Inc(o_i)$ = Interest Income of object o_i
 $COF(o_i)$ = Cost of funds used by object o_i
 $Int\ Exp(o_i)$ = Interest Expense for object o_i
 $VOF(o_i)$ = Value of funds provided by object o_i

Then,

$Int\ Inc(o_i) = AAB(o_i) * rate_{asset}(o_i)$
{Compute only if object attribute doesn't exist}
 $COF(o_i) = AAB(o_i) * Rt$
 $Int\ Exp(o_i) = ALB(o_i) * rate_{liability}(o_i)$
{Compute only if object attribute doesn't exist}
 $VOF(o_i) = ALB(o_i) * Rt$

NI CALCULATION RULE TYPE II (81)

[0092] Let $AB_{(c,t)}(o_i)$ = Average Balances of the object o_i
 $rate_{(c,t)}(o_i)$ = Effective interest rate for the corresponding balance
asset or liability

$R_t(o)$ = Object o's product type/group as needed to identify treatment rate

$R_{(c,t)}(pt(o))$ = Rate (treatment rate) for objects of this product type/group, given the balance class, and tier

$Int\ Inc(o_i)$ = Interest Income of object o_i

$COF(o_i)$ = Cost of funds used by object o_i

$Int\ Exp(o_i)$ = Interest Expense for object o_i

$VOF(o_i)$ = Value of funds provided by object o_i

Then, where summations are over the possible balance variables (class, tier) for the object,

$$Int\ Inc(o_i) = \sum_{\forall c,t} AB_{(asset\ c,t)}(o_i) * rate_{(asset\ c,t)}(o_i)$$

{calculate only if object attribute doesn't

exist}

$$COF(o_i) = \sum_{\forall c,t} AB_{(asset\ c,t)}(o_i) * R_{(asset\ c,t)} R_{(c,t)}(pt(o))$$

$$Int\ Exp(o_i) = \sum_{\forall c,t} AB_{(liability\ c,t)}(o_i) * rate_{(liability\ c,t)}(o_i)$$

{calculate only if object attribute doesn't

exist}

$$VOF(o_i) = \sum_{\forall c,t} AB_{(liability\ c,t)}(o_i) * R_{(liability\ c,t)} R_{(c,t)}(pt(o))$$

Allocated Balances

[0093] Let Total Amount = Balance Sheet amount to be allocated to object

Rule = Rule for allocating Amount

Then, DPM calculates the allocation to object o to determine the allocated balance:

$B(o_i)$ = Rule applied to (Total Amount)
= The Allocated Balance

Treat this balance as any one of the average balances associated with the object, where class is specified by users, tier is "allocated". Thus, $B_i(o_i)$ is one of the $AB_{(c,t)}(o_i)$ defined above.

NI CALCULATION RULE TYPE III (82)

[0094] Let $AB_{(c,t)}(o_i)$ = Average Balances of the object o_i
 $rate_{(c,t)}(o_i)$ = Effective interest rate for the corresponding balance
Type $p, a(o_i)$ = Object o_i 's product and object attributes as needed to identify treatment
 $R_{(c,t)}(type_{p,a}(o_i))$ = Rate (treatment rate) for this object's product type, given the balance class, and tier/tenor
Int Inc (o_i) = Interest Income of object o_i
COF (o_i) = Cost of funds used by object o_i
Int Exp (o_i) = Interest Expense for object o_i
VOF (o_i) = Value of funds provided by object o_i

Then, where summations are over the possible balance attributes (state, tier) for the object,

$$Int\ Inc(o_i) = \sum_{\forall c,t} AB_{(asset\ c,t)}(o_i) * rate_{(asset\ c,t)}(o_i)$$

{calculate only if object attribute doesn't exist}

$$COF(o_i) = \sum_{\forall c,t} AB_{(asset\ c,t)}(o_i) * R_{(asset\ c,t)}(type_{p,a}(o_i))$$

$$Int\ Exp(o_i) = \sum_{\forall c,t} AB_{(liability\ c,t)}(o_i) * rate_{(liability\ c,t)}(o_i)$$

{calculate only if object attribute doesn't exist}

$$VOF(o_i) = \sum_{\forall c,t} AB_{(liability\ c,t)}(o_i) * R_{(c,t)}(type_{p,a}(o_i))$$

NI CALCULATION RULE TYPE IV (83)

[0095] Let $AB_{(c,t)}(o_i)$ = Average Balances of the object

$rate_{(c,t)}(o_i)$ = Effective interest rate for the corresponding balance amounts

$type_{p,a,b}(o_i)$ = Object o_i 's product, object attribute, and behavior types as needed to identify treatment rate

$R_{(c,t)}(type_{p,a,b}(o_i))$ = Rate (treatment rate) for objects of this product type, balance class, and tier/tenor

$Int\ Inc(o_i)$ = Interest Income of object o_i

$COF(o_i)$ = Cost of funds used by object o_i

$Int\ Exp(o_i)$ = Interest Expense for object o_i

$VOF(o_i)$ = Value of funds provided by object o_i

[0096] Then, where summations are over the possible balance variables (state, tier) for the object,

$$Int\ Inc(o_i) = \sum AB_{(asset\ c,t)}(o_i) * rate_{(asset\ c,t)}(o_i)$$

{calculate only if object attribute

doesn't exist}

$$COF(o_i) = \sum AB_{(asset\ c,t)}(o_i) * R_{(asset,t)}(type_{p,a,b}(o_i))$$

$$Int\ Exp(o_i) = \sum AB_{(liability,t)}(o_i) * rate_{(liability,t)}(o_i)$$

{calculate only if object attribute doesn't exist}

$$VOF(o_i) = \sum AB_{(liability,t)}(o_i) * R_{(liability,t)}(type_{p,a,b}(o_i))$$

NI CALCULATION RULE TYPE V (84)

[0097] Any Net Interest calculation that is non-iterative, canonical, and represents the marginal GAAP valuation of an object's balance sheet resource related revenues or expenses for each (o_i).

[0098] Note that in firms that are highly leveraged, the use of COF/VOF separation leads to a significant and volatile piece of NI, the net difference between to sum of COF and the sum of VOF (after adjusting for EOAE per the following section) and the firm's total NI. This is known by a banker as "mismatch profits arising from the difference in tenors" (duration) of the assets and liabilities. If VOF and COF rates are based on matched maturity of objects then the difference between the firms total NI and the sum of the objects is the profit arising from the firm having different duration of balance sheet related objects. Since this profit is not related to a specific object, but the combination of objects in the enterprise, a separate profit measure is appropriate and possible using DPM's approach. The use of the rules above allow for a novel method of calculating funds transfer pricing, since the rules are based on sets, the processing can be preformed in parallel. Further, since the rules are canonical this approach leads to a computationally efficient method of calculating these types of profit values.

NI CALCULATIONS OF EOAE

[0099] Since GAAP financial statement's balance sheet is based on the balancing equation Assets equals Liabilities plus Equity, NI should be adjusted for the value of the Equity resource consumed by each Asset or Liability object. Calculating Earnings on Allocated Equity as part of an object's NI:
Four exclusive options are provided for allocating equity to objects. DPM's options are as follows:

- Option 1 No calculation of EOAE.

- Option 2 EOAE calculation based on a simple equity ratio.
- Option 3 Equity allocation for all assets following industry standards.
- Option 4 Equity allocation using an economic allocation rule, based on object cohorts and modern portfolio theory's capital asset pricing model.

Option 1 (85)

$$\text{EOAE}(o_i) = 0$$

Option 2 (86)

Let $\text{AB}_{(\text{asset}, t)}(o_i)$ = Average Asset balances of the object o_i , including
any allocated asset balances

ER = Equity Ratio

R_{equity} = Treatment Rate for equity

$$\text{Then, EOAE}(o_i) = R_{\text{equity}} * \text{ER} * \sum \text{AB}_{(\text{asset}, t)}(o_i)$$

where the summation is taken over all asset
balances.

Option 3 (87)

Let $\text{Amount}(o_i)$ = Amount(s) associated with object 'a' This may be
the average asset balances of the object ' o_i ' including any allocated asset
balances, or may be an object parameter, etc.

$\text{Wt}(\text{type}(o_i))$ = Code needed to identify the weight for object o
balances, at the object-type level

$\text{W}(\text{Wt}(\text{type}(o_i)))$ = determined by the weight code

Cap Ratio = An appropriate risk-weighted capital ratio chosen

R_{equity} = Treatment Rate for equity

$$\text{Then, } \text{EOAE}(o_i) = R_{\text{equity}} * \sum [\text{Amount}(o_i) * W(\text{Wt}(o_i)) * \text{Cap Ratio}]$$

where the summation is taken over all balances of o_i if there are multiple amounts.

Option 4 (88)

Let $\text{Amount}(o_i)$ = An amount or amounts related to the object, such as average balances of the object (denoted $\text{AB}_{(c,s,t)}(o_i)$)

$\text{Cohort}(o_i)$ = The cohort of objects in which object o is a member

$E_{\text{cohort}}(o_i)$ = The equity allocation rule for the cohort of object o .

This is a linear (two-valued) function that operates on $\text{Amount}(o_i)$ of the form $\alpha + \beta * \text{Amount}(o)$.

R_{equity} = Treatment Rate(s) for equity for the $\text{Amount}(o_i)$ value(s)

$$\begin{aligned} \text{Then, } \text{EOAE}(o_i) &= \sum R_{\text{equity}} * E_{\text{cohort}}(o)(\text{Amount}(o_i)) \\ &= \sum R_{\text{equity}} * [\alpha + \beta * \text{Amount}(o_i)] \end{aligned}$$

where summation occurs if $\text{Amount}(o_i)$ is a set of values (such as the object and allocated balances related to the object).

4. Calculate Other Revenue for All Objects (see Fig. 9)

OR Calculation Rule Type I (90)

Let OR_i = Financial Statement Other Revenue attribute subset ,

$\text{OR}_i(o_i)$ = The amount of OR_i apportioned to object o_i ,

$O(\text{OR}_i)$ = the objects that map to OR_i .

Let M be an OR calculation method, where M is dependent upon the OR subset under consideration. We then have the following.

If $M(OR_i)$ = a "balance" attribute method.

Define

$M(OR_i)(o_i)$ = An average balance method for calculating o_i 's OR

$$\text{and } OR_i(o_i) = OR_i * \frac{\text{Balance}(o_i)}{\sum_j (\text{Balance}(o_j))}$$

where the summation is over all o_i in $o_i(OR_i)$.

If $M(OR_i)$ = A "count" method for calculating o_i 's OR

Define

$M(OR_i)(o_i)$ = 1

$$\text{and } OR_i(o_i) = OR_i * \frac{1}{(\text{count}(a_j) \text{ in } O(OR_i))}$$

where the count is over all o_i in $o_i(OR_i)$.

If $M(OR_i)$ = "event count," we can define

$M(OR_i)(o_i)$ = Count of events in profit measurement period for object o_i

$$\text{and } OR_i(o_i) = OR_i * \frac{\text{count of events for object } o_i}{\sum_j (\text{count of events for object } (o_j))}$$

where the summation is over all o_i in $o_i(OR_i)$.

If $M(OR_i)$ = "event amount"

Define $M(OR_i)(o_i)$ = $\sum_{\text{events over the period}} (\text{event amounts for } o_i)$

$$\text{and } OR_i(o_i) = OR_i * \frac{\sum_{\text{events over the period}} (\text{event amounts for object } o_i)}{\sum_j \sum_{\text{events over the period}} (\text{event amounts for object } o_i)}$$

where the summation is over all events in $o_i(OR_i)$, and

the events are restricted to a class of event type. Then, we have the total OR for object o given by the sum of these allocations for all sets for which a has an association:

$$OR(o_i) = \sum (OR_i(o_i)), \text{ summing over } i.$$

As a generalization, these formulas can be written in shorthand where $M(OR)$ is the corresponding function of 'o' above, as:

$$OR_i(o_i) = OR_i * \frac{M(OR_i)(o_i)}{\sum_j M(OR_j)(o_i)}$$

and

$$OR(o_i) = \sum_i^{o_i \in O(OR_i)} \left[OR_i * \frac{M(OR_i)(o_i)}{\sum_j M(OR_j)(o_i)} \right]$$

OR Calculation Rule Type II (91)

The formula for OR calculation is given as follows:

Let o_i = Object being considered

$OR_i(o_i)$ = OR apportioned to a (if any) from a set OR_i

$Event(t)_i(o_i)$ = The event reflecting the activity of object o_i in the period restricted to a given event type t .

$Amount(Event(o_i))$ = An event amount

$Rev(Evt_i(o_i))$ = The revenue amount associated with this event. This is

assumed to be of the form

$$= \sum_{type\ t} \sum_i \left[\alpha_i * Count(Event(t)_i(o)) + \beta_i * Amt(Event(t)_i(o)) \right]$$

where α , β are pre-entered values.

$OR(o_i)$ = Total OR apportioned to object o_i

Then $OR(o_i)$ = $\sum_{type\ t} \sum_i (Rev(Event(t)_i(o)))$ summed over all the events of

o_i

+ apportioned revenue as in the Type I case.

$$= \sum_{type} \sum_i [x_i * Count(Event(t)_i(a)) + \beta_i * Amt(Event(t)_i(a))] + \sum_i (OR_i(o_i))$$

OR Calculation Rule Type III (92)

Let o_i = Object being considered
 $OR_i(o_i)$ = OR apportioned to the object (if any) from a set OR_i
 $Event(t)_i(o_i)$ = The events reflecting the activity of object o in the period restricted to a given event type t
 $Amount(Event(t)_i(o_i))$ = The event amount
 $Rev(Event(t)_i(o_i))$ = The revenue amount associated with this event.

This is assumed to be of the form

$$= \sum_{type} \sum_i [x_i * Count(Event(t)_i(o)) + \beta_i * Amt(Event(t)_i(o))] \text{ where } \alpha, \beta \text{ are}$$

pre-entered values based on event type. For completeness, $\alpha = \beta = 0$ in the event amount is null.

AM = The method of amortization = cash, SL, DB, interest
 $AM_k \{amount\}$ = Deferral on amount, using method AM , at time k ($= 0$ if $k > \text{life}$ and $\text{life} = 1$ if cash basis is selected.)
 $AM_{now} \{amount\}$ = Deferral on amount, using method M , at this period
note that this is at various points of life for various amounts.

Let $OR(o_i)$ = Total OR apportioned to object o_i .
Then $OR(o_i)$ = Amortized amounts in their first amortization period
+ amortized amounts in their higher amortization periods
+ amounts not amortized but apportioned from a pool as in Type I

We take this step at a time. First, consider the amounts in their first amortization period. These are calculated as follows, using the formula generated in Type II:

$$\begin{aligned} \text{Then } OR(o_i) &= \sum_{\text{type } t} \sum_i (\text{Rev}(\text{Event}(t)_i(o_i))) \text{ summed over all the} \\ &\quad \text{transactions of object } i \\ &\quad + \text{apportioned revenue as in the Type I case.} \\ &= \sum_{\text{type } t} \sum_i \left[x_i * \text{Count}(\text{Event}(t)_i(o_i)) + \beta_i * \text{Amt}(\text{Event}(t)_i(o_i)) \right] + \\ &\quad \sum_i (OR_i(o_i)) \end{aligned}$$

where the AM₁ methods vary with the event types. We can group the amounts being amortized by their amortization characteristics. For this purpose, let Pool₁(L, M) = the pools of amounts amortizing in this period for the first time according to life L and amortization method M. The new amortizing amounts can be rewritten as follows:

$$\text{New amortized amounts} = \sum_{L,M} \text{Pool}_1(L, M)$$

Similarly, define

Pool_k(L, M) = the pools of amounts amortizing in this period for the kth time according to life L and amortization method M, where L ≤ k.

N.B. any amortization calculation can be used if the calculation can be derived using known Object Attributes.

Then, the total OR for object o_i in this period is computed as follows:

$$\begin{aligned} OR(o_i) &= \sum_{\text{type } t} \sum_i \left[x_i * \text{Count}(\text{Event}(t)_i(o_i)) + \beta_i * \text{Amt}(\text{Event}(t)_i(o_i)) \right] \\ &\quad + \sum_{k>1} \sum_{L,M} \text{Pool}_k(L, M) \\ &\quad + \sum_i (OR_i(o_i)) \end{aligned}$$

$$= \sum_k \sum_{L,M} \text{Pool}_k(L, M) + \sum_i (\text{OR}_i(o_i))$$

OR Calculation Rule Type IVI (93)

Foregone OR:

Let Actual OR for object o_i = $\text{OR}_{\text{actual}}(o_i)$ - CASH AMOUNTS

Let Expected OR for object o_i = $\text{OR}_{\text{expected}}(o_i)$

Then, Foregone OR for object o_i = $\text{OR}_{\text{foregone}}(o_i)$
 = $\text{OR}_{\text{expected}}(o_i) - \text{OR}_{\text{actual}}(o_i)$ - CASH
 AMOUNTS

OR Calculation Rule Type V (94)

[0100] Any Other Revenue calculation that is non-iterative, canonical, and represents the entire GGAP valuation of non-balance sheet resource related revenues or expenses.

5. Calculate Direct Expense for All Objects (see Fig. 10)

DE Calculation Rule Type I (100)

[0101] None directly specified - use IE calculation rules (any type). For each IE rule used in this way, substitute $\text{DE}(o_i)$ for $\text{IE}(o_i)$ in any IE calculations used as DE.

DE Calculation Rule Type II (101)

[0102] Direct expense will be a variable dependent upon the object and the event being costed. These determine the unit cost to be used and the calculation type, along with the multiplier rule being used if external amounts are needed. Thus, using subscripts to indicate variables used,

$\text{DE}_{\text{object, event-type}}$

= unit cost_{event type} * (no. of events of this type in the period)
 + amounts taken from an event file
 + costs calculated as a percentage of Event Amount,

Where the unit costs, and revenue percentage by event type, are all entered by the user as pre-processing inputs.

Then, $DE_{\text{object}} = \sum_{\text{event types}} DE_{\text{object, event-type}}$ where the summation is over event types.

DE Calculation Rule Type III (102)

$DE_{\text{object, event-type, event-sub}}$
 = unit cost_{event type} * (no. of events of this type in the period)
 + amounts taken from an event file
 + costs calculated as a percentage of event amount

DE Calculation Rule Type IV (103)

[0103] Two calculations are made, each one using the above calculations, processing two independent DE attributes for each object. DE is calculated twice for each object, allowing for comparison of plan to actual values or standard to actual values or any scenario to scenario comparison.

DE Calculation Rule Type V (104)

[0104] Any Direct Expense calculation that is non-iterative, canonical, and represents the entire GGAP valuation of costs related to object or sub-object level details.

6. Calculate Provision for All Objects (see Fig. 11)

P Calculation Rule Type I (110)

[0105] The formula for calculating P of Object i is as follows, where $PG(o_i)$ denotes the P group in which o_i is a member:

$$P(o_i) = PG(o_i) * \frac{\text{Balance of } o_i}{\sum_{o_k \in \text{RPG}(o_i)} \text{Balance } o_k}.$$

P Calculation Rule Type II (111)

[0106] The formula for calculating P of o_i is as follows, using the same symbols as above and $RF(o_i)$ denotes the expected adjustment factor for o_i :

$$P(o_i) = PG(o_i) * \frac{\text{Balance}(o_i) * RF(o_i)}{\sum_{o_k \in \text{RPG}(o_i)} [\text{Balance}(o_k) * RF(o_k)]}.$$

P Calculation Rule Type III (112)

[0107] The formula for calculating P of object " o_i " is as follows, where $Pr(o_i)$ is a probability for object o_i .

$$P(o_i) = \text{Exposure}(o_i) * Pr(o_i) * \text{Expected Value Adjustment}(o_i) * \frac{1}{L_i}$$

Where L is the expected number of reporting periods during the life of o_i .

P Calculation Rule Type IV (113)

[0105] The addition of any of the Type I, II or III P rules applicable to an object i.

$$P(o_i) = P(o_i)_{\text{P Type I}} + P(o_i)_{\text{P Type II}} + P(o_i)_{\text{P Type III}} + P(o_i)_{\text{P Type IV}}$$

P Calculation Rule Type V (114)

[0106] Any Provision calculation that is non-iterative, canonical, and represents the entire GGAP valuation of expected costs related to future events, contingencies, timing effects.

7. Calculate Indirect Expense for All Objects (see Fig. 12)

[0107] Indirect expense, by its nature is not related directly to an Object, therefore apportionment techniques are used to allocate indirect expense to an Object. Any apportionment function is allowed as long as it is derivable at the object level using ratios of attributes available at the object level to the summation of this available attribute across all objects receiving the apportioned expense. Examples of this type of ratio calculation (the function "F" used in the IE calculation types) are:

- Ratio 1: Balance-based apportionment of IE.
Define Apportionment ratio using Current Balance of (o_i).

Thus, the allocation of Indirect Expense k becomes (function $F(IE_k)(o_i)$ in IE rules below):

$$IE_k * \frac{\text{Current Balance of } o_i}{\sum_j (\text{Current Balance of } o_j)}, \text{ summed over all objects in grouping } j.$$

- Ratio 2: Count-based apportionment of IE

Thus, the allocation of Indirect Expense k becomes (function $F(IE_k)(o_i)$ in IE rules below):

$$IE_k * \frac{1}{(\text{count of } o_j \text{ in } O(IE_k))}, \text{ for all objects in grouping } j.$$

- Ratio 3: Revenue-based apportionment of IE
Define $NI(o_i) + OR(o_i) = \text{Total Revenue (using NI \& OR rules above) for } (o_i)$.

Thus, the allocation of Indirect Expense k becomes (function $F(IE_k)(o_i)$ in IE rules below):

$$IE_k * \frac{NI(o_i) + OR(o_i)}{\sum_j (NI(o_j) + OR(o_j))}, \text{ summed over all objects in grouping } j$$

- Ratio 4: Event Count apportionment of IE
Count of events for (o_i) are restricted to an event type.

Thus, the allocation of Indirect Expense k becomes (function F(IE_k)(o_i) in IE rules below):

$$IE_k * \frac{\text{count of event for object } o_i}{\sum_j (\text{count of event for object } (o_j))}$$

for some event type, summed over all objects in grouping j.

- Ratio 5: Transaction Amount apportionment of IE
Summation of event amounts for (o_i), restricted to a event type.

Thus, the allocation of Indirect Expense k becomes (function F(IE_k)(o_i) in IE rules below):

$$IE_k * \frac{\sum_{\text{event over the period}} (\text{event amounts for object } (o_i))}{\sum_j \sum_{\text{event over the period}} (\text{event amounts for object } (o_j))},$$

for some event type, summed over all objects in grouping j.

- Ratio 6: Direct Expense apportionment of IE
Using DE rules above for O_i.

Thus, the allocation of Indirect Expense k becomes (function F(IE_k)(o_i) in IE rules below):

$$IE_k * \frac{DE(o_i)}{\sum_j (DE(o_j))}, \text{ summed over all objects in grouping } j.$$

- Ratio 7: Normalized (averaged) apportionment of IE

Thus, the allocation of Indirect Expense k becomes in IE rules below:

$$F(IE_k)(o_i) = [IE \text{ using Ratio 1 } F(IE_k)(o_i) + IE \text{ using Ratio 3 } F(IE_k)(o_i) + IE \text{ using Ratio 6 } F(IE_k)(o_i)] \div 3.$$

IE Calculation Rule Type I (120)

[0108] Indirect expense is apportioned to accounts using one of the first three apportionment ratios above. Accordingly, using the nomenclatures above,

$$IE(o_i) = (\text{Total IE to be apportioned}) * \frac{F(IE_k)(o_i)}{\sum_k F(IE_k)(o_i)}$$

IE Calculation Rule Type II (121)

[0109] The rules for partitioning IE and defining corresponding object groups are based on product and event attributes. The calculation of $IE(o_i)$ is exactly as described above, and is given by the following, where the F's are the given apportionment ratios (any of the seven apportionment ratios are permitted for any partition O or groupings of objects).

$$IE(o_i) = \sum_k^{o_i \in O(IE)} \left(IE_k * \frac{F(IE_k)(o_i)}{\sum_j^{o \in O(IE)} F(IE_k)(o_j)} \right)$$

IE Calculation Rule Type III (122)

[0110] For Indirect Expense before deferral calculations, the process is similar to that as listed for the Type II Level, where:

$$IE(o_i) = \begin{aligned} & \text{New amounts in their first period of amortization} \\ & + \text{Amounts not being amortized (cash basis)} \\ & + \text{Amounts in their 2}^{nd} \text{ through last amortization period.} \end{aligned}$$

Since we include non-amortized amounts (cash basis) to be considered as amortized with only one period, this is re-written as follows:

$$IE(o_i) = \begin{aligned} & \text{New amounts in their first period of amortization (including cash-} \\ & \text{basis)} \\ & + \text{Amounts in their 2}^{nd} \text{ through last amortization period.} \end{aligned}$$

Note that non-amortized amounts are made to fit this equation by considering them to be an amortization of one profit reporting period only. Each IE set can have a different amortization type or period, though all objects receiving a specific apportionment will share the same amortization Rule.

The new amounts to be deferred are computed, therefore, as the following:

$$\text{Before deferral } IE(o_i) = IE_k * \frac{F(IE_k)(o_i)}{\sum_{j \in O(IE)} F(IE_k)(o_j)} \text{ added over each set } IE_k \text{ to}$$

which o_i is related.

$$= \sum_k^{o \in O(IE)} \left(IE_k * \frac{F(IE_k)(o_i)}{\sum_{j \in O(IE)} F(IE_k)(o_j)} \right)$$

Each of these terms may be deferred over its amortization period according to any of the amortization rules (cash, straight line, declining balance, or interest amortization calculations). Since amortization methods may vary by set, we have the following, where $AM_1(L,R)$ is used to denote the amortization rule and its life:

$$IE(o_i) = \sum_k^{o_i \in O(IE)} AM_1(L,R) \left(IE_k * \frac{F(IE_k)(o_i)}{\sum_{j \in O(IE)} F(IE_k)(o_j)} \right)$$

To this is added the amounts with remaining amortization life for which amortization was begun in earlier periods.

IE Calculation Rule Type IV (123)

[0111] Multiple combinations of the any of the above IE type rules I, II, or III are calculated per object.

IE Calculation Rule Type V (124)

[0112] Any Indirect Expense apportionment calculation that is non-iterative, canonical, and represents the GAAP evaluation of indirect costs.

8. Calculate After-Tax Object Profit for All Objects (see Fig. 13)

$$\text{Profit}(o_i) = [\text{NIR}(o_i) + \text{OR}(o_i) - \text{DE}(o_i) - \text{IE}(o_i) - \text{P}(o_i)] * (1 - \text{EffectiveTaxRate})$$

where, for a two tier taxation system, Effective Tax Rate is calculated as:

$$\text{Effective Tax Rate} = (1 - \text{tax rate 2}) * (\text{tax rate 1}) + \text{tax rate 2}.$$

In the calculation of Effective Tax Rate, this formula assumes the two rates are effective rates which apply to the business conditions (not the nominal statutory rates), and that tax rate can be deducted from income in the calculation of tax rate. Then,

$$\text{Total Profit} = \sum_i [\text{Profit}(o_i)]$$

For those companies which use economic profit value calculations, the formula changes to:

$$\text{Profit}(o_i) = \{[\text{NIR}(o_i) + \text{OR}(o_i) - \text{DE}(o_i) - \text{IE}(o_i) - \text{P}(o_i)] * (1 - \text{EffectiveTaxRate})\} - \text{SVA}(o_i)$$

where

$$\text{SVA}(o_i) = \alpha(o_i) + \beta(o_i) * \text{Amount}(o_i)$$

and

$\alpha(o_i)$, $\beta(o_i)$ are functions for a cohort of objects in which o_i is a member, and $\text{Amount}(o_i)$ is given by a rule which maps o_i to a data value (such as balance, or allocated equity) also defined at the cohort level. (A cohort defined here represents a grouping of objects with similar risk characteristics, consistent with Modern Portfolio Theory and the Capital Asset Pricing Model.)

Shareholder Value Add (SVA) is a method financial analysts use to adjust profit measures for risk. The idea is to subtract from the profit measure the cost of the equity required to support whatever object is being measured. Companies use this risk adjustment measure essentially to burden the profit for risk being taken with the equity funds used by the object. These institutions will classify cohorts of risk and the risk cost equivalent as a percentage of account balance or allocated equity (i.e., "Hurdles").

DPM Example

[0113] In the airline industry a need for detailed customer profitability can be measured using DPM. Here the fundamental object is the seat, allowing consistent profitability values aggregated by route, aircraft type, as well as customer dimensions using data warehousing technology. The need for detailed customer profitability is being driven by the business impact analysis required to support loyalty and alliance strategic decisions. The following is a DPM profit calculation for a seat, with real profit measurement parameters simplified (not all aspects of true airline business is demonstrated) and where examples of each type of rule are utilized in DPM processing.

Flight: Air101

Date: 7/1/1998

From: London

To: New York

Equipment: Boeing 747-400

Classes: First (20 Seats); Business (80 Seats); Economy (300 seats)

DETAILED PROFIT METRIC PROCESSING

Step 1: Populate Database – assuming a relational database management system and terminology.

- Initialize database;

Extract, Condition, and Load the following tables: Planes, Flights,

Customers, Employees, Locations; The net balances in the Planes entity can be maintained by use of DPM amortization IE calculation from the prior period.

- Extract, Condition, and Load the following tables: Financial Transactions, Events; Manifest (occupant, seat, flight, date attributes);
- Extract, Condition, and Load the Financial Statement table;
- Calculate and populate Rate table;

Figure 14 shows a partial relational database schema showing the entities and attributes used in the example's processing.

Step 2: Maintain Object Groups and Rule Maps – a database processing routine is performed creating the following groupings:
Class to Seat

- Flight to Locations
- Seat to Plane

For ease in understanding the rule the specifications used to populate the database with rule parameters the processing instructions are shown below in the Rules. Also, most rules group by plane – the rule discussion below assumes this grouping without reference.

Step 3: Calculate Net Interest for Seat – Four types of NIR rules are processed - type I, II, III, IV for each seat. Interest rates are matched to plane purchase date for initial plane investments, and interest rates for plane net capitalizable improvements are funded with a 5 year pool of rates. Plane asset balances are kept in the Plane table maintained in Step 1.2 above.

NIR Type I: Carry cost of plane asset by seat is determined.

Rule

Populated in Step 2 are:

- The AAB(seat) parameter is Plane: net__orig_bal * (1/total seats on plane)
- The rt parameter is Treatment_rts: 25_yr_rate (maintained for each plane) There is no need for liability rates.

Calculate COF(seat) = AAB(seat) * rt for all seats on flight.

All other attributes are NI Type I calculations results are null. No grouping.

NIR Type II : Allocate net receivable/payable to seat for carry cost profit adjustment. This adjusts profitability for the impact of cash flows vs. accounting flows. This airline wants to apportion this cost across all revenue seats based on class_wt, a modeling parameter. A total weighted seat (tw) for the accounting period is a modeling parameter; where the seat factor is determined as a ratio of seat footprint to class portion of the plane's seat revenue space. (e.g. 1st = 15%, 2nd = 25% & 3rd = 60% of plane's seat revenue space with each seat evenly apportioned in class – 1/20, 1/80, 1/300 respectively, in this case.)

Rule

Populated in Step 2 are:

- The AB(seat) parameter is Financial: net_recv'ble * (1 / tws)
- The rt parameter is Treatment_rts: pool (for null plane row)

There is no need for liability rates.

Calculate COF(seat) = AB(seat) * rt * class_wt

Grouped by class all seats, so no_seats??? is no_seats1st value in the plane entity for first class seats on this plane, and so on for 2nd & 3rd class seat groups. The net recv'ble column is derived from the difference between sums of period_amts for the receivables minus sum of payable rows for this profit period.

All other attributes and NI Type II calculations results are null.

NIR Type III : Calculate the NI value of the customer mileage benefit

payable for each seat.

Rule

Populated in Step 2 are:

- The AB(seat) parameter is Customer: bene_miles * loyalty factor
- The rt parameter is Treatment_rts: pool (for null plane row)

There is no need for an asset rate.

Calculate $COF(seat) = AB(seat) * rt$

Since a customer can only occupy one seat, no groupings are used in this rule map.

All other attributes and NI Type III calculations results are null.

NIR Type IV: Calculate the NI impact of the plane's improvements for each seat. Upper classes interior, customer electronics and seating are improved faster during the life of the plane. Management strategy is for these improvements to be loyalty program related; they are amortized quicker and hence shorter funding requirement with less certain life. Therefore the loyal customers to pay proportionately more of the funding costs of improvement assets.

Rule

Populated in Step 2 are:

- The AB(seat) parameter is Plane:imp_net_bal * (1/tsw)
- The rt parameter is Treatment_rts: pool (for plane row) * Customer: loyalty_rtng

There is no need for a liability rate.

Calculate $COF(seat) = AB(seat) * rt * class_fac$

The unique class_fac values sum to 1. The rule map is grouped by classes (or class_fac).

All other attributes and NI Type IV calculations results are null.

NI EOAE- Option 4: Allocate equity based on mileage benefit and have it reduce NI by the weighted average cost of capital for the airline.

Rule

Populated in Step2 are:

- The Amount(seat) parameter is Customer:bene_miles
- The equity rate is 9.75%

Calculate EOAE(seat) = Amount(seat) * equity rate * cohort_wt

The cohort is based groups of each instance of loyalty_rtn and class of seat paired. Cohort_wt is "beta" and no "alpha."

[0114] All other attributes and EOAE calculations results are null.

Step 4: Calculate Other Revenues for each Seat – Revenue arises from ticket fares, duty free sales on board aircraft, excess baggage penalties collected, alliance code sharing license and multiple leg customer trips.

OR Type I: Apportion revenue from code sharing with alliance. Apportion revenue by seat allocated to alliance passenger.

Rule

Populated in Step 2 are:

- Flight:period_amt is alliance revenue per flight plus the sum of all flight/date alliance financial transactions.

Calculate OR(seat) = sum of Flight:period_amt *

(1/ no alliance seats available on flight)

Only for seats occupied by an alliance customer or a seat that is empty.

OR Type II: Use Transaction table to find direct passenger revenue by seat.

Rule

Populated in Step 2 are:

- Transaction:* (amounts, seats, flight, date, transaction type)
are populated for events, financial or non-financial.

Calculate $OR(seat) = \text{sum of Transaction:trn_amt}$

where type = "passenger_payment" for each seat.

No seat grouping in rule map.

OR Type III: Apportion flight freight revenue amongst all seats, weighted by class_wt.

Rule

Calculate $OR(seat) = \text{sum of Transaction:trn_amt} * \text{class_wt} * (1/(\text{no_seats}???)$

where type "freight" for each seat.

Group seats by class (??? Is 1st, 2nd, 3rd.) Class_wt is a normalized weight for apportioning revenue amongst classes.

OR Type IV: Calculate the loyalty mileage benefit by seat.

Rule

Calculate Forgone $OR(seat) = \text{Flight: ???_fare} - \text{sum of transactions:trn_amt}$ where type = "passenger_payment" for each seat.

Group by class for loyalty passenger occupied seats only.

Step 5: Calculate Direct Expenses for each Seat – Compute the direct cost of using the seat. This is true for both occupied and unoccupied seats. Fuel and flight deck crew are costs of all seats, while cost of duty free goods sold and meals are a function of occupied seats. Some costs are a function of the plane taking off, no matter the duration of the flight (e.g., maintenance.) Some costs are a function of class, such as cabin crew expense and customer consumables.

DE Type I: Show direct cost of non-food materials consumed in flight.

Rule

Populated in Step 2 are:

- Transactions:* is populated based on these direct costs.
Calculate $DE(seat) = Transactions:trn_amt$ for all flight and date rows where type = direct_exp for each seat.
No grouping in rule map.

DE Type II: Show direct cost duty free goods sold by seat.

Rule

Populated in Step 2 are:

- Transactions:* are populated based on these direct costs.
Calculate $DE(seat) = Transactions:trn_amt$ for all flight and date rows where type = duty_free for each seat.
No grouping in rule map.

DE Type III: Show direct cost of food and beverage consumed.

Rule

Populated in Step 2 are:

- Transactions:* are populated based on these direct costs
- Loading is calculated as the ratio of occupied to total class seats by class (cl_load) using manifest table and plane configuration values.

Calculate $DE(seat) = Flight: catering_cost * class_wt * cl_load$ for each seat.

Grouped by class in rule map.

DE Type IV: The staffing of each cabin has a maximum count with a minimum of 1 per 50 passengers. The air deck crew must fly the plane even if there are no passengers. Calculate DE twice, once for based on a labor cost per seat based on total crew cost and total seats; and calculate DE a second time with actual staff apportioned to actual passengers.

Rule

Populated in Step 2 are:

- Total crew cost (tcc1) parameter is derived using the employee entity for all crew on flight. $Tcc = \text{Employee:salary+bene} * (\text{Flight:schd_hours} + 1.5) / 110$
- Total crew cost (tcc2) parameter is derived using the employee entity for all crew on flight by class. $Tcc??? = \text{Employee:salary+bene} * (\text{Flight:schd_hours} + 1.5) / 110$

Note: $tcc = tcc1st + tcc2nd + tcc3rd$

Calculate $DE1(\text{seat}) = tcc * (1/(\text{total no. of seats on plane}))$

Calculate $DE2(\text{seat}) = tcc?? * (1/(\text{no. of seats occupied in class}))$
for each seat.

Grouped by class in rule map.

Step 6: Calculate Provisions for each Seat – The cost of expected future events are measured here. The airline self insures property, casualty and miscellaneous insurance premiums on a per flight basis. And a provision for future loyalty benefit, a function of loyalty rating, claimed is made in step 6.

P Type I: - The cost of the flight's insurance premium is apportioned to each seat.

Rule

Populated in Step 2 are:

- Insurance premium is maintained in the flight entity (total PG)

Calculate $P(\text{seat}) = \text{Flight:ins_prem} * 1/(\text{total no. seats on plane})$

No grouping in rule map.

P Type II: Provision for unusual maintenance cost is made on a function of the inverse of flight time and takeoffs in the last 12 months.

Rule

Populated in Step 2 are:

- Financial:period_amt is maintained in the financial entity by equipment type.
- Total flight hours and last 12 months take-offs are accumulated each month, their product is to_hrs parameter.

Calculate $P(\text{seat}) = \text{Financial:period_amt} * 1/(\text{total no. of seats on plane}) * (\text{Plane:to_last12} * \text{Flight:schd_hrs}) / \text{to_hrs}$

No seat grouping in rule map.

P Type III: Providing for future loyalty benefit.

Rule

Populated in Step 2 are:

- Customer:bene_miles is maintained using prior periods provision for benefit miles by loyalty customer
- A parameter estimating the usage rate by loyalty cohort called burn factor

Calculate $P(\text{seat}) = \text{Flight:distance} * \text{burn}(\text{loyalty_rating})$

Grouping by loyalty rating in rule map.

P Type IV: Future order cancellation reserve.

Rule

Populated in Step 2 are:

- Future airplane order cancellation penalty (pen) and order size (fut_planes) is maintained in the financial entity

- Last 12 months loading is calculated by plane

Calculate $P(\text{seat}) = \text{pen} * (\text{Plane:orig_bal} / \text{fut_planes}) *$

$1 / (\text{total no. seats on plane}) * 1/24$. where last 12 months loading less than 75%.

Only seats on where last 12 months loading less than 75%.

Step 7: Calculate Indirect Expenses for each Seat – The calculation of indirect expense is the final step of detailed level profit calculation. Here remaining cost measures that are not differentiable by seat are measured. Fuel and oil, ground costs, regular aircraft maintenance, overheads, and general marketing expenses are apportioned in IE. The airline also wants to view customer profitability loaded with the cost of unoccupied seats.

IE Type I: General and administrative costs are apportioned to a seat in this rule.

Rule

Populated in Step 2 are:

- The periods financial entity is populated with all of the airlines G&A expenses (e.g., type of G&A are passenger services, navigation licenses, rentals, miscellaneous costs, premises and property taxes.) Allocate these costs based on seat revenue (NI + OR.)

Calculate $IE(\text{seat}) = \text{sum}(\text{Financial:trn_amt}) * (\text{sum}(\text{NI}(\text{seat})) + \text{sum}(\text{OR}(\text{seat}))) / (\text{Total OR} + \text{NI for period})$

No seat grouping in rule map for all Financial:type = "G&A".

IE Type II: Ground location costs, airport specific and gate expenses are apportioned by flight.

Rule

Populated in Step 2 are:

- Populate all of these expenses for the period Transactions:trn_amt with the type being the three letter international airport identifier.

- Calculate the number of seats flown to the flight airports during the profit period (tfc)

$$\text{Calculate IE(seat) = sum of Transactions:trn_amt} * \\ (1 / \text{tfc}) / 2$$

Group transactions by pair of airports in flight row for rule map, where only these types of expenses are included in the tuple.

IE Type III: Fixed asset depreciation is allocated to a seat.

Rule

Populated in Step 2 are:

- The net plane balances (Plane:net_orig_bal & Plane:imp_net_bal) are updated for last period's amortization or write-off.
- The amortization factor (function of amortization) given age of asset (for both original investment and improvements) is amfo and amfi for each plane.
- The tax planning estimate for taxable equivalent gross-up, due to accelerated tax amortization, is .8 = teg (less than 1 since a tax credit)

$$\text{Calculate IE(seat) = ((Plane:net_orig_bal - Plane:orig_bal) *} \\ \text{amfo) + (Plane:imp_org_bal - Plane: imp_org_bal) * amfi)) * teg *} \\ (1 / (\text{total no. seats on plane})) * (\text{Flight:schd_hrs} / \\ \text{Plane:hrs_last_12} / 12)$$

No grouping of seats in rule map.

IE Type IV: Indirect marketing expenses are apportioned by loyalty class for customer profit aggregations and by seat for other aggregations.

Rule

Populated in Step 2 are:

- Indirect marketing expense per loyalty tier per flight is parameterized as mef???, where ??? is 1st, 2nd, 3rd class.

Calculate IE(seat) = mef??? * (1 / (no. of occupied seats in
???))

Group seats by class in rule map.

IE Type V: For loyalty investment analysis, allocate all
DE for empty seats to occupied seats equally.

- Populated, after all prior steps are calculated, are the total DE less OR for each flight during the period, idef.

Calculate IE(seat) = idef / (total no. of occupied seats)

Only calculate for occupied seats.

Step 8: Calculate After-tax Seat Profit – The

After-tax Profit:

Rule

Populated in Step 2 are:

- The effective tax rate (etr) for the airline is maintained in the database.

Calculate Profit(seat) = sum(NI(seat) + OR(seat) + DE(seat) +
IE(seat) + P(seat)) * (1-etr)

Each seat is calculated individually, no grouping is used.

Shareholder Value-add: The airline has determined that
some routes have a greater risk of loss due to the volatility of loading
factors. Therefore each route is given a risk factor based on the last 12
months standard deviation of loading.

Rule

Populated in Step 2 are:

- Flight:risk_factor is maintained here
- Economic equity per average seat parameter (Flight:risk_factor) per route
- Cost of capital rate is parameterized (eqrt)

Calculate SHV(seat) = Profit(seat) – (Flight:risk_factor * eqrt)

Each seat is calculated.

[0115] From the foregoing, it will be appreciated that DPM provides a metric of profit measurement consistent with GAAP at a level of detail that has not been accomplished using the traditional General Ledger based data with analytical (apportioned) and/or sample survey based information.

[0116] This new ability to resolve profit measures at a detailed level without using analytical models or statistical extrapolation is a capability needed throughout industries that find their ability to determine a marginal decision's profit impact inadequate for optimization of ownership value. The use of rule driven and database measurement processes will give large scale businesses a lower cost of maintenance and technologically scaleable tool to measure profit at a level of precision or resolution not possible in prior financial performance measurement processes.

[0117] Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited, except as by the appended claims.

WHAT IS CLAIMED IS:

1. A process for determining object level profitability in a relational database management system, comprising the steps of:

preparing information to be accessed electronically through the relational database management system;

establishing, in the relational database, rules for processing the prepared information;

calculating independently at least one marginal value of profit for each object being measured using the established rules as applied to a selected set of prepared information;

calculating a fully absorbed profit adjustment value for each object being measured; and

combining the at least one marginal value of profit and the fully absorbed profit adjustment value to create a measure for object level profitability.

2. The process of claim 1, wherein the relational database comprises a structured query language (SQL).

3. The process of claim 1, wherein the preparing step further includes the step of calculating opportunity values of funds used or supplied by each object being measured.

4. The process of claim 1, wherein the establishing step includes the steps of providing the information necessary to select objects, and performing the correct profit calculus.

5. The process of claim 1, wherein the step of calculating at least one marginal value of profit includes the steps of calculating net interest (NI), other revenue (OR) and direct expense (DE), wherein net interest (NI) is the summation of interest income, value of funds provided and earnings on equity funds used

less the sum of interest expense and costs of funds used, other revenue (OR) is a measure of profit contribution from non-interest related sources, and direct expense (DE) is the profit value reduction due to marginal resource consumption by the object.

6. The process of claim 1, wherein the step of calculating at least one marginal value of profit includes the step of provisioning (P) for the selected set of prepared information, provisioning being the expected profit value adjustment for future outcomes related to the object.

7. The process of claim 6, wherein the step of calculating a fully absorbed profit adjustment value includes the step of calculating the value for indirect expense (IE) which is an apportioned profit value adjustment for all non-object related resource consumption.

8. The process of claim 7, wherein the combining step includes the steps of adding net interest (NI) and other revenues (OR), and subtracting therefrom direct expense (DE), provisioning (P) and indirect expense (IE).

9. The process of claim 8, including the step of adjusting the measure for object level profitability for taxes and/or object economic value.

ABSTRACT OF THE DISCLOSURE

A process for determining object level profitability includes the steps of (1) preparing information to be accessed electronically, (2) establishing rules for processing the prepared information, (3) calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information, (4) calculating a fully absorbed value of profit adjustment using established rules as applied to the selected set of prepared information, and (5) combining the at least one marginal value of profit and fully absorbed value of profit adjustment to create a measure for object level profitability. The inventive process gives management profit measures tailored to its need for accurate decision oriented profit information required to manage a large organization based on profit measurement.

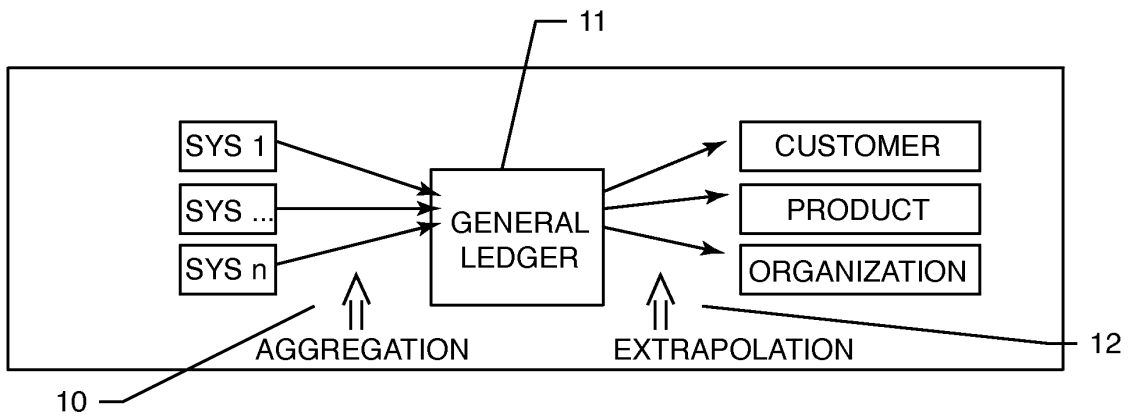


FIG. 1
PRIOR ART

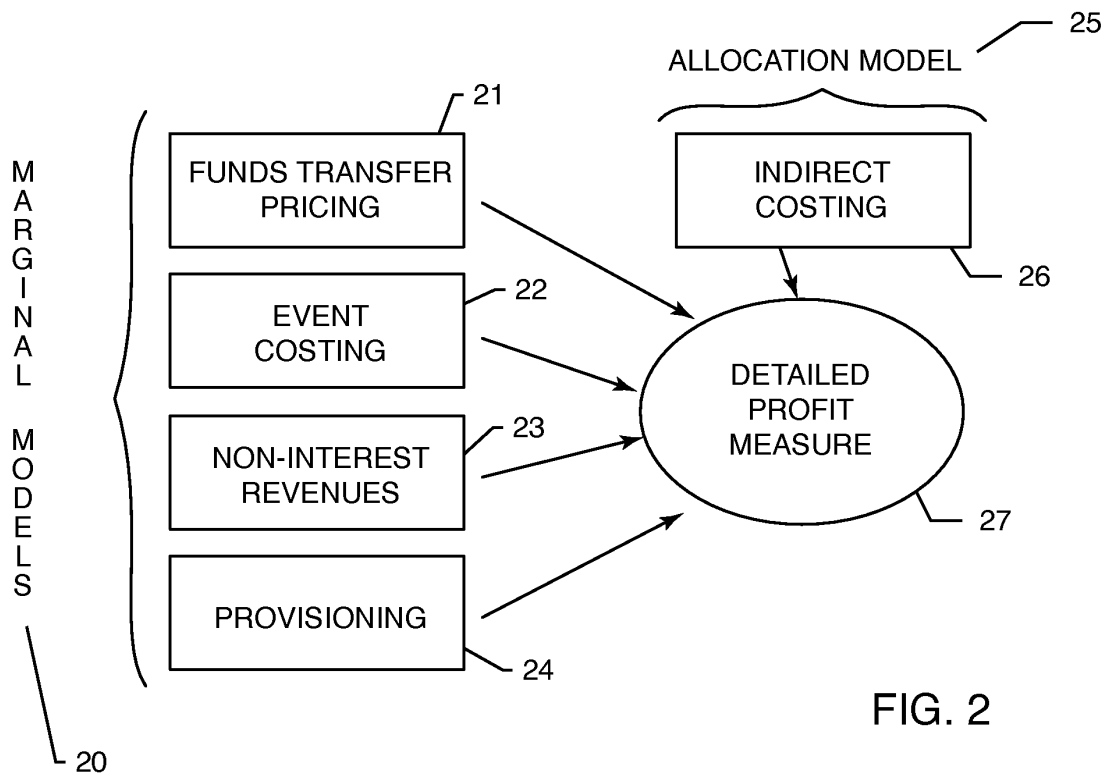


FIG. 2

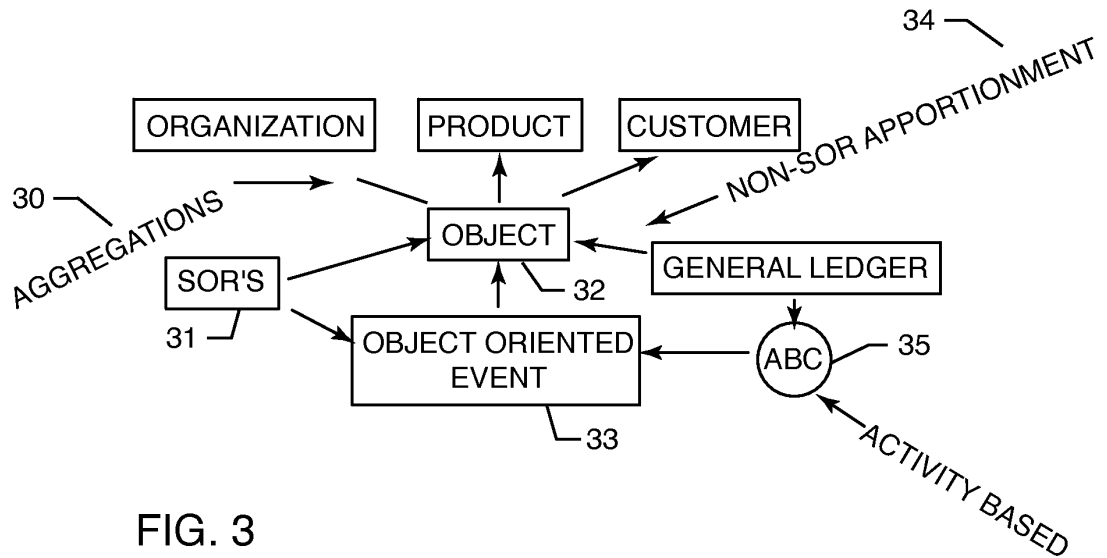


FIG. 3

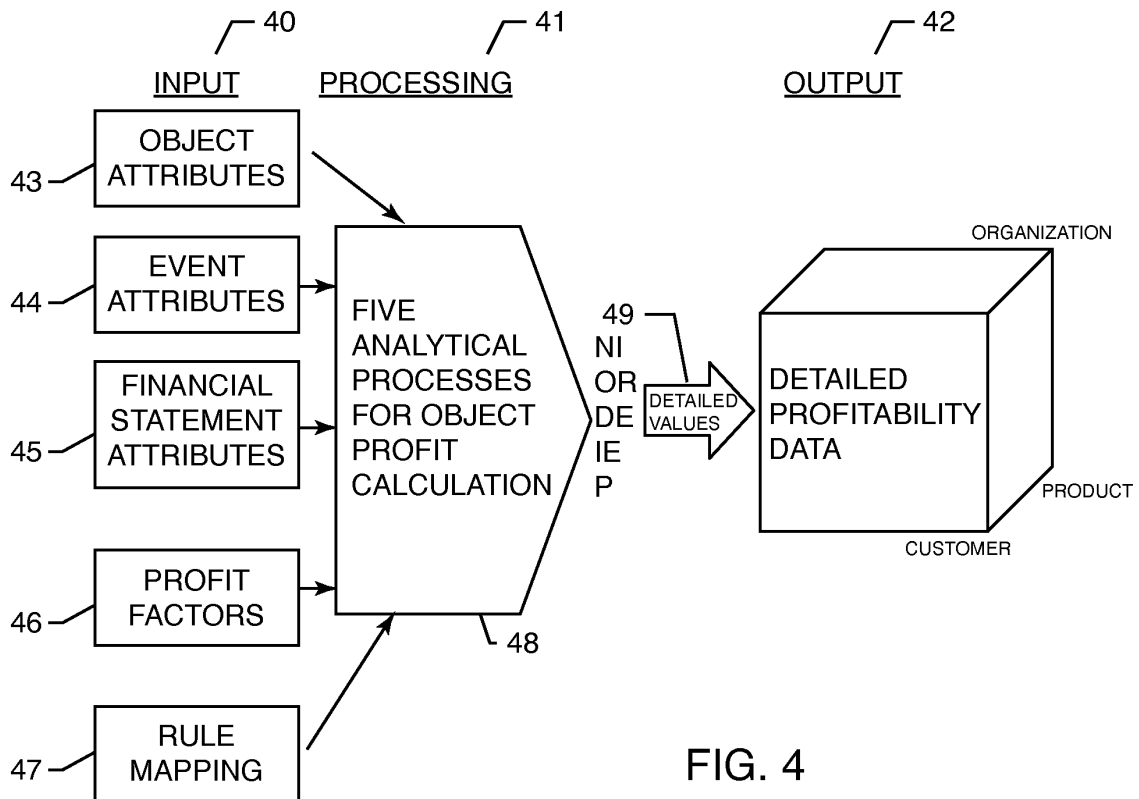


FIG. 4

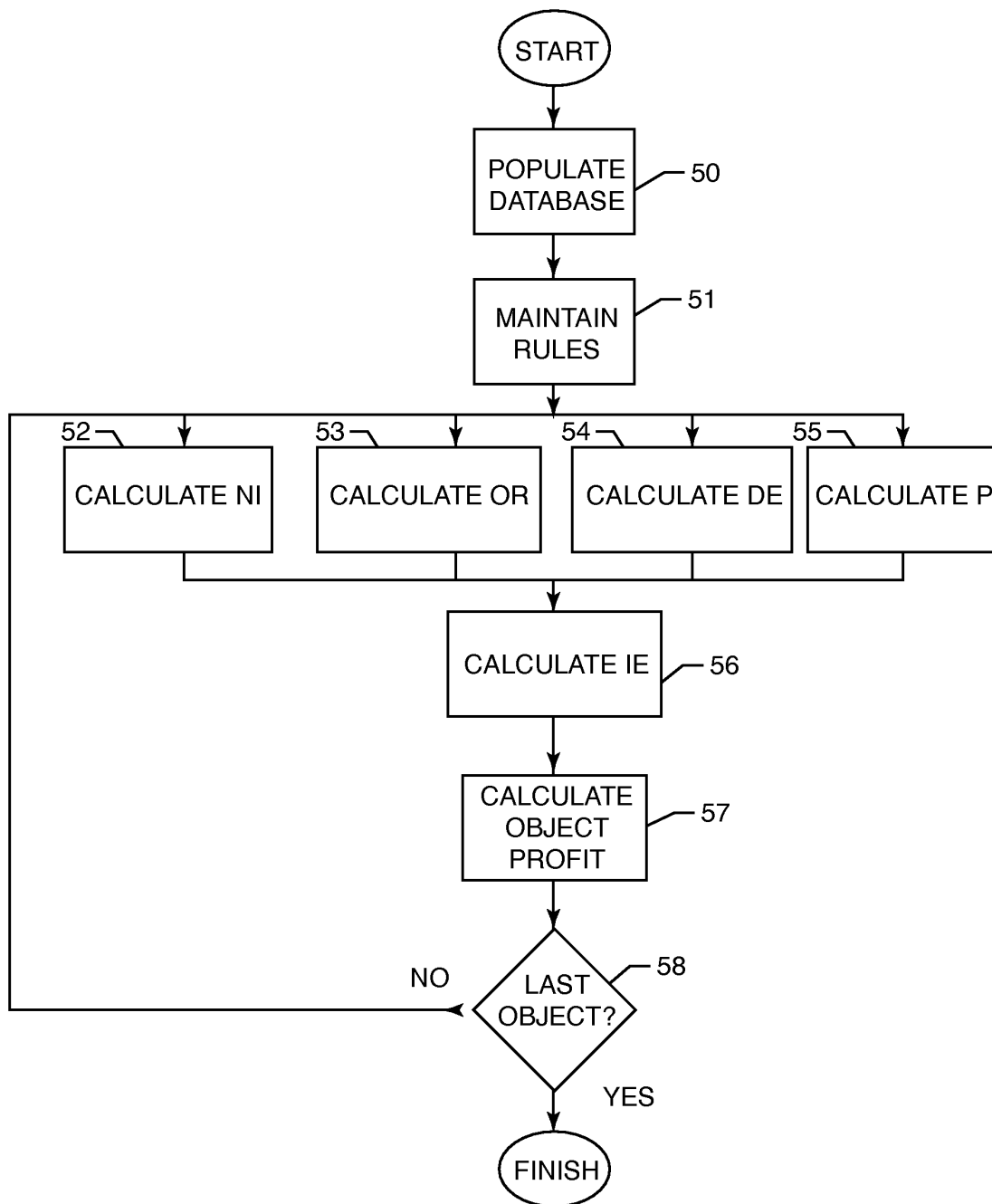


FIG. 5

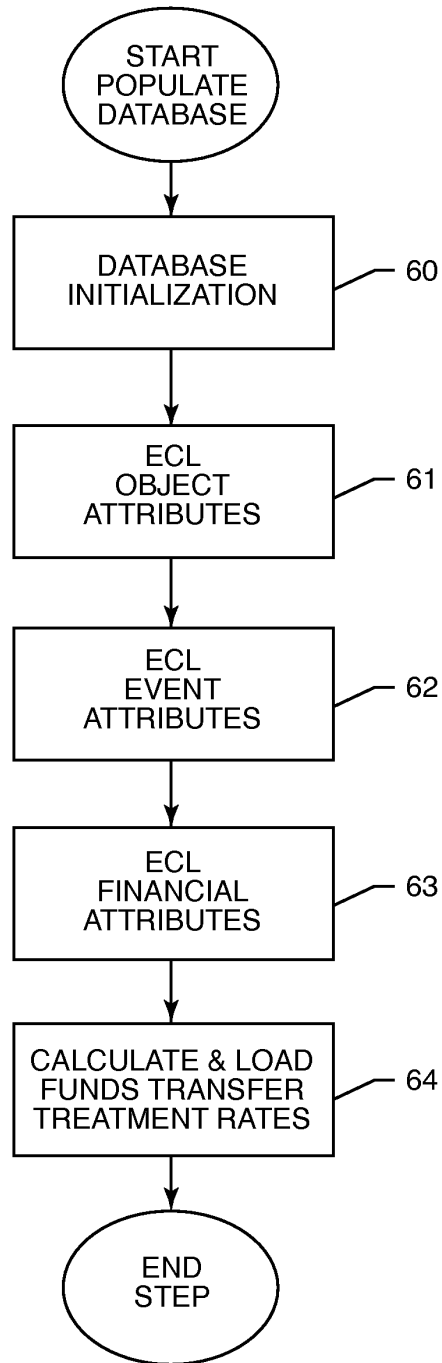


FIG. 6

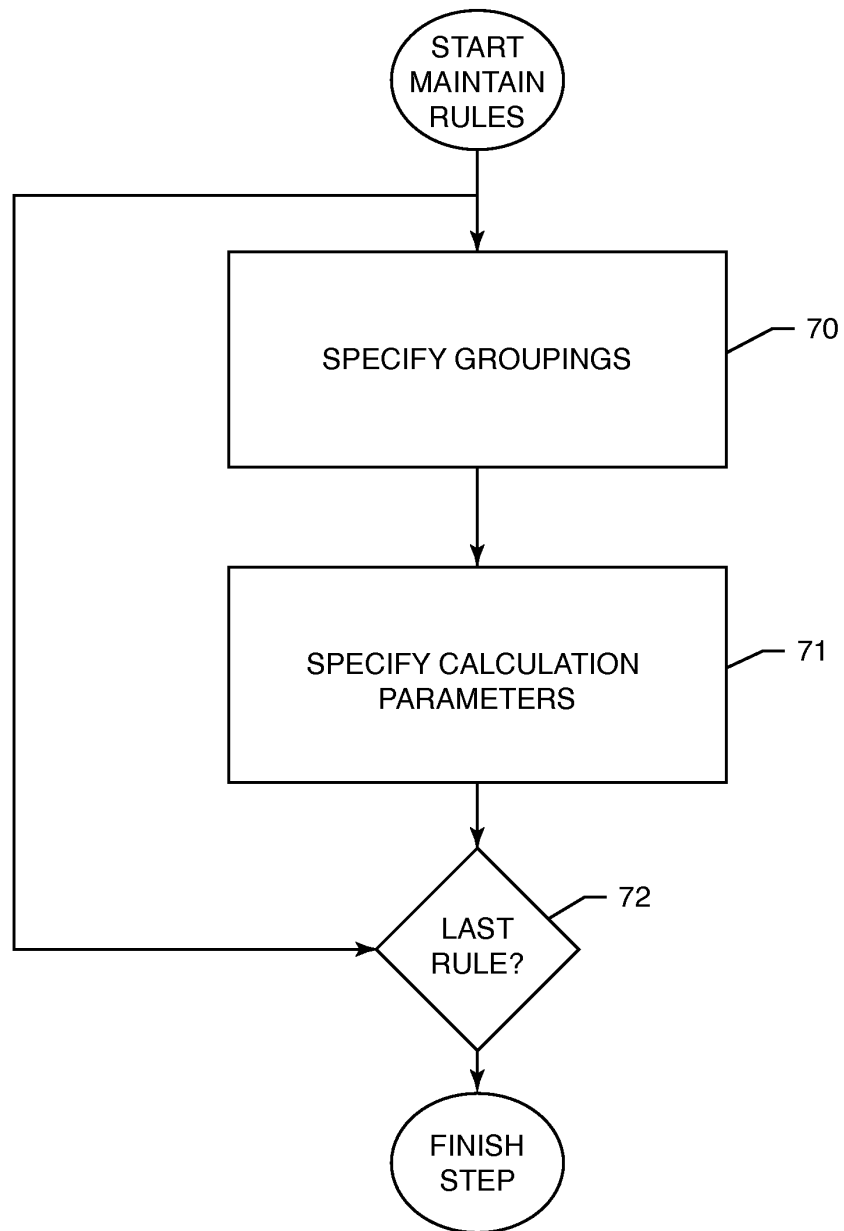
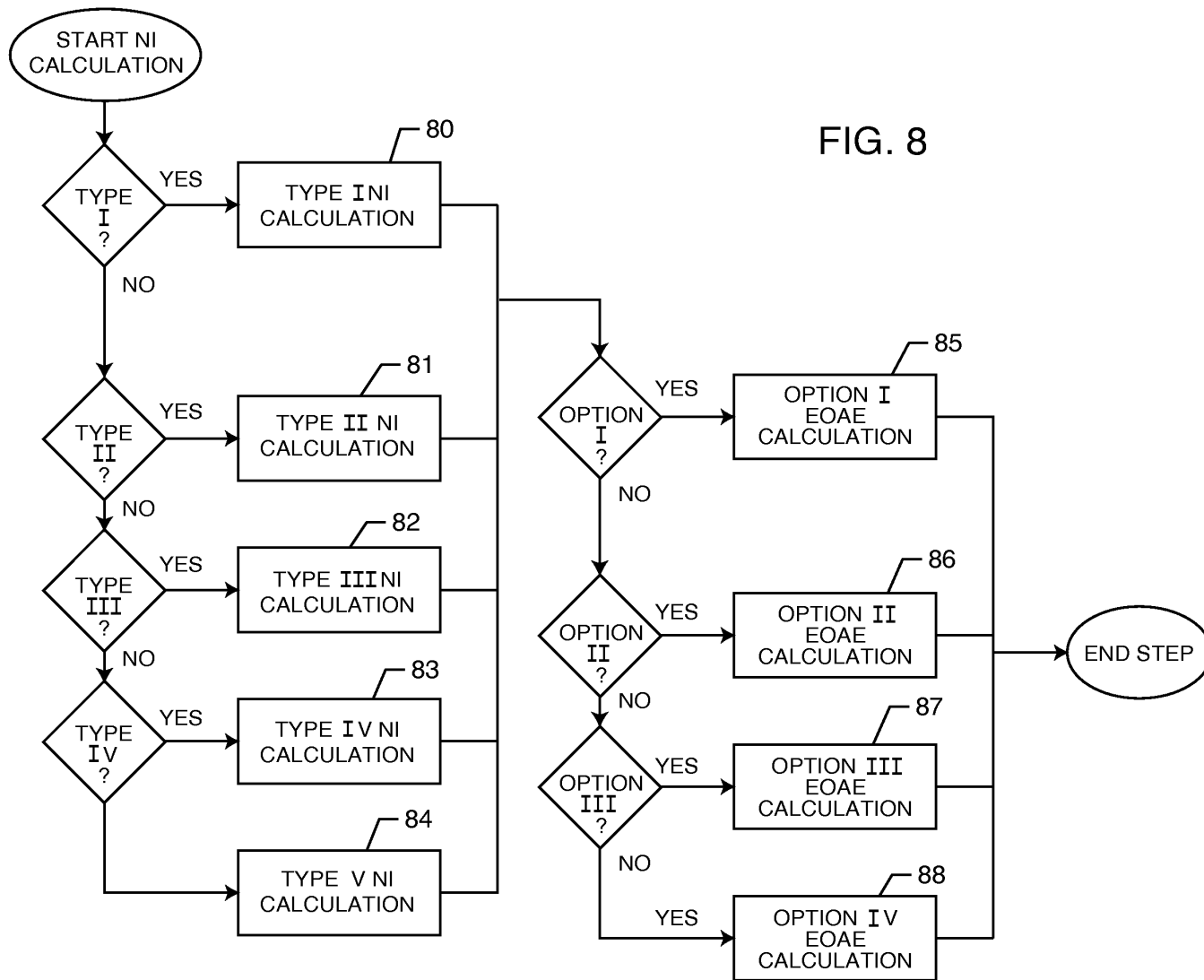


FIG. 7



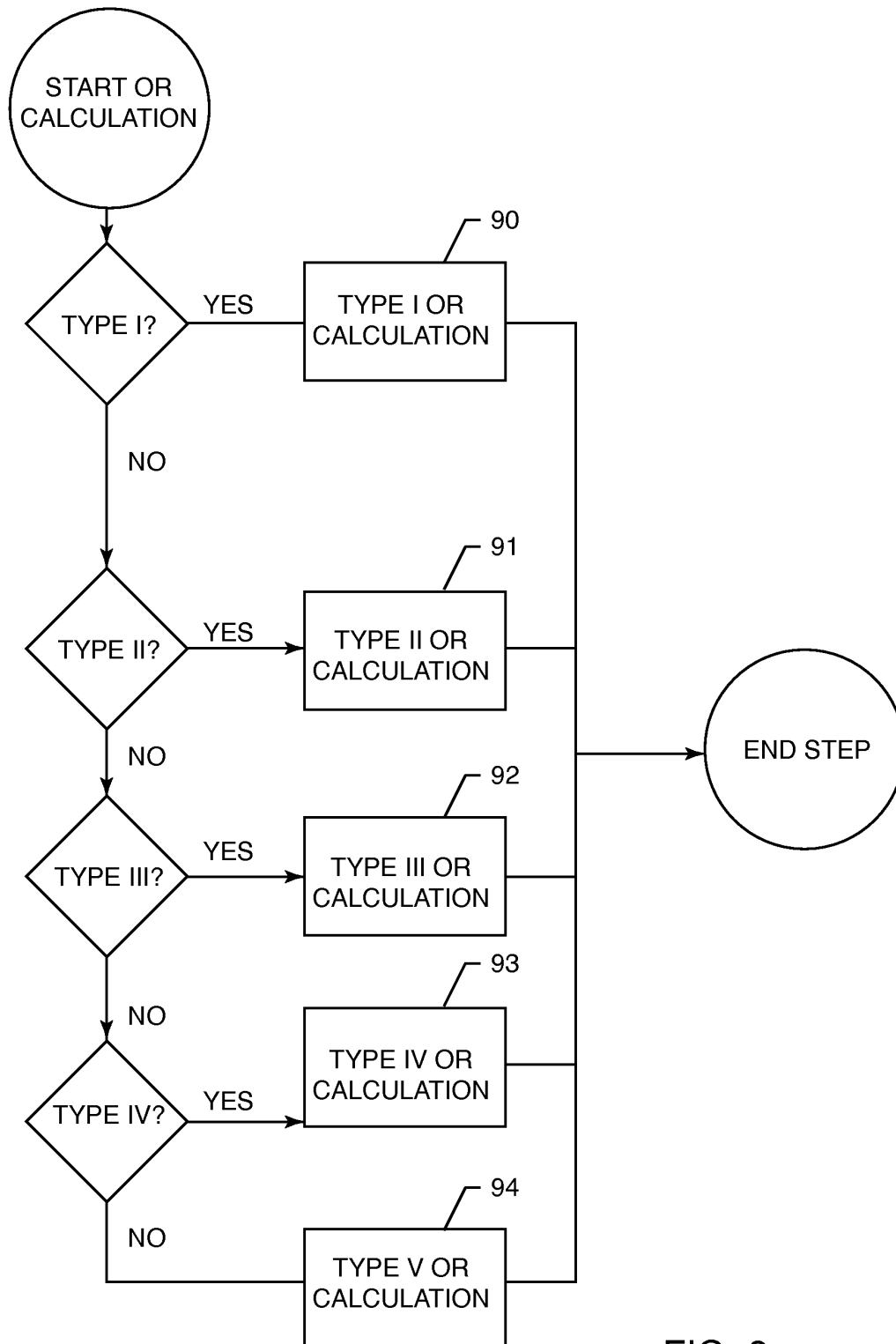


FIG. 9

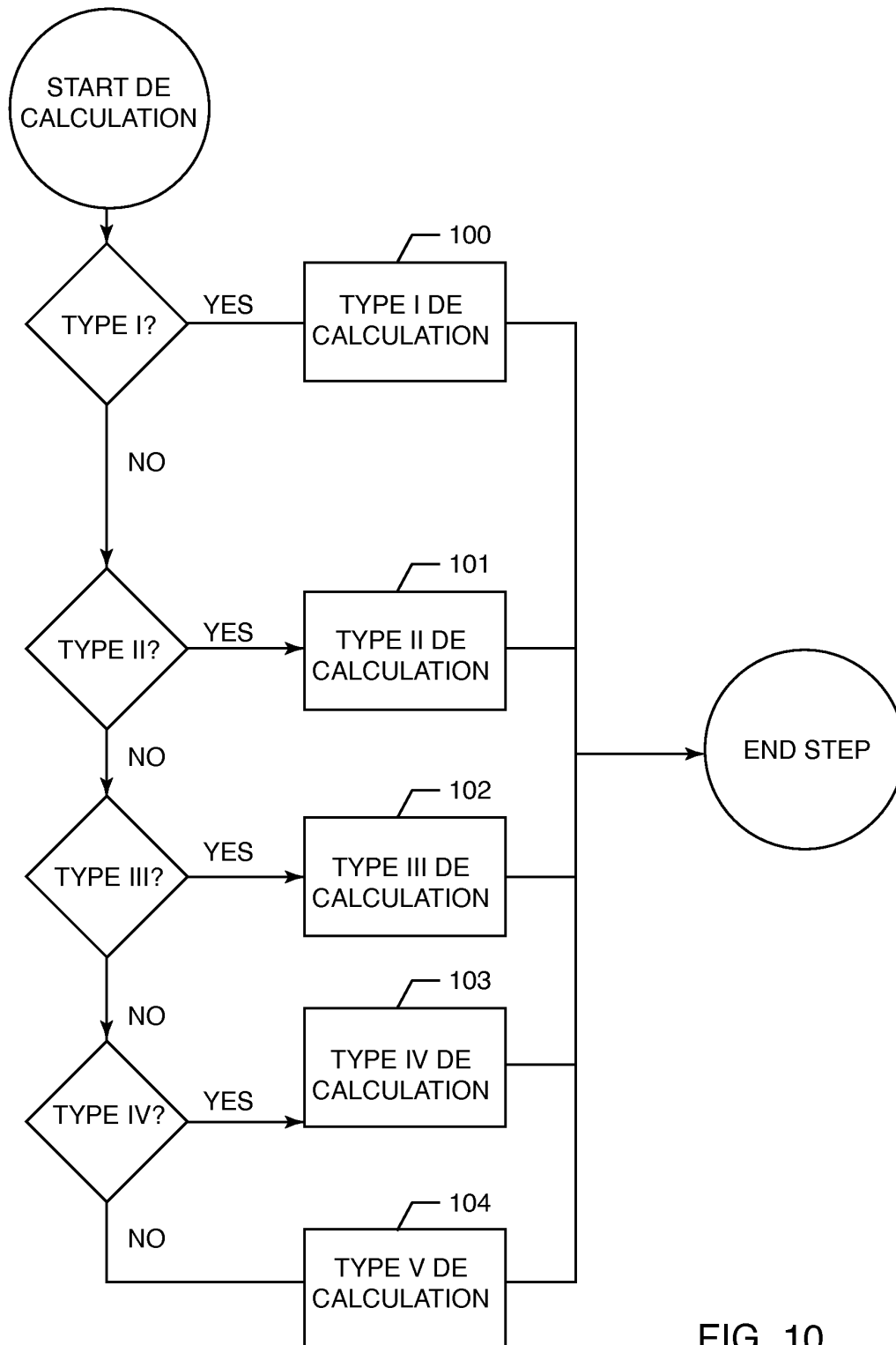


FIG. 10

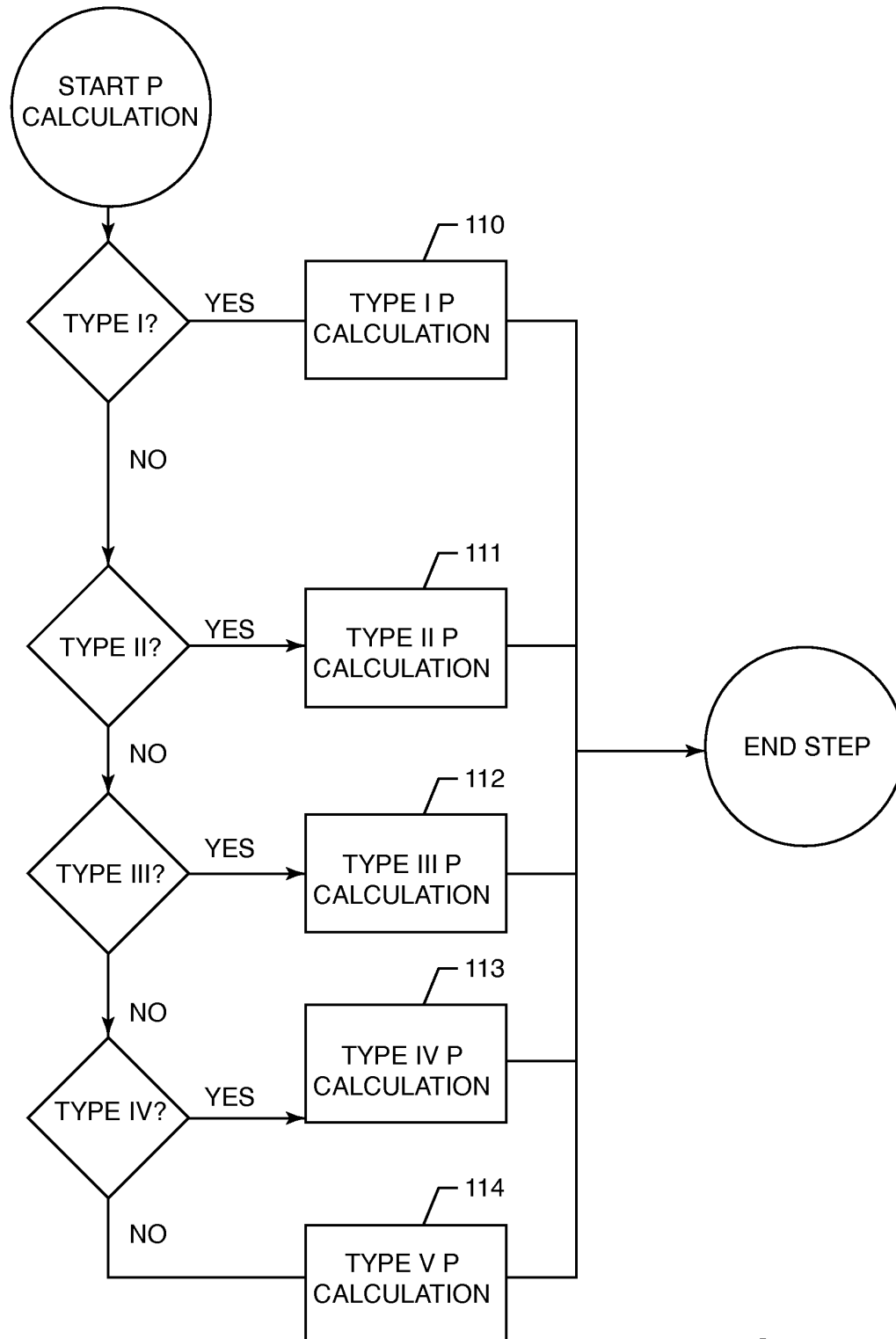


FIG. 11

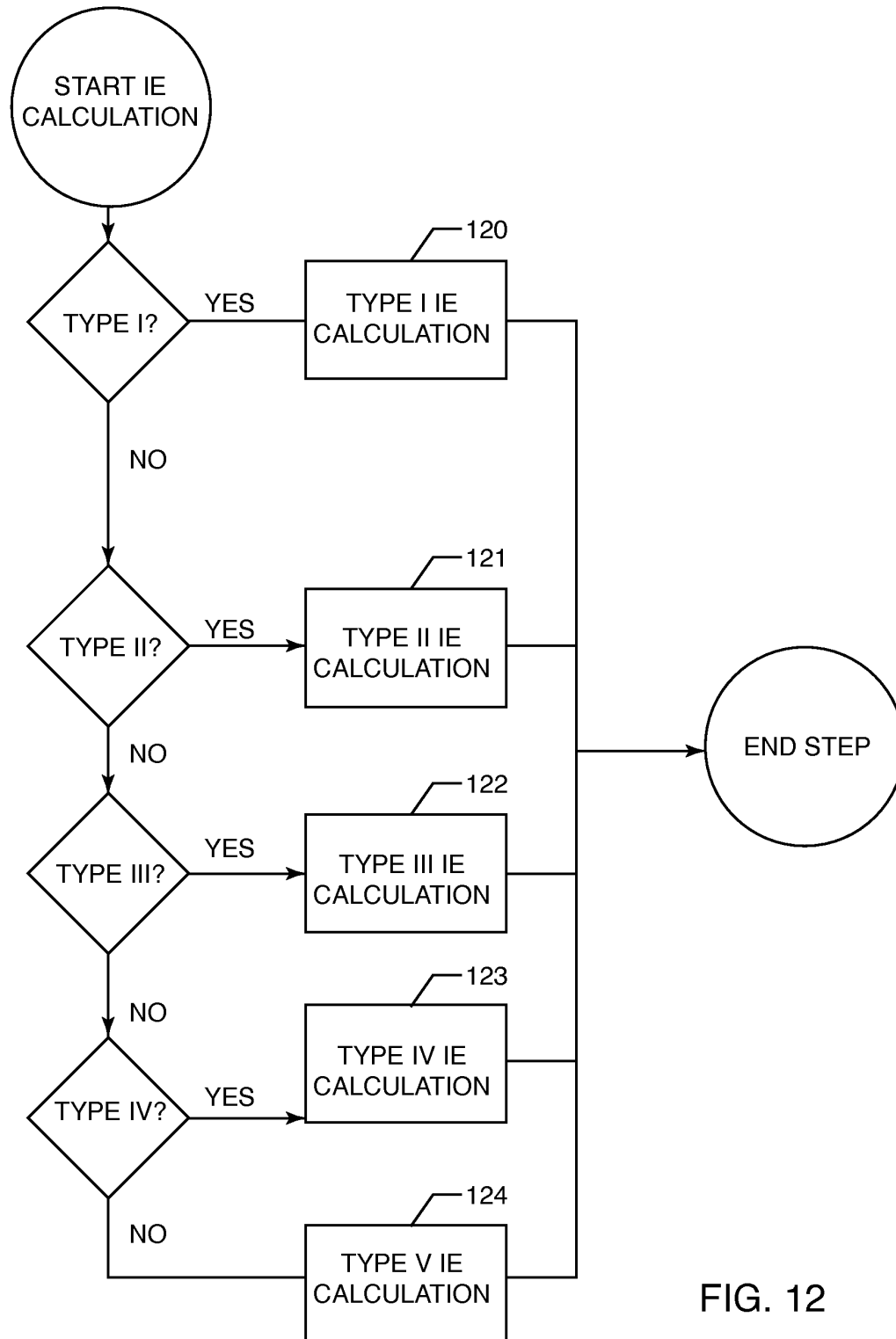


FIG. 12

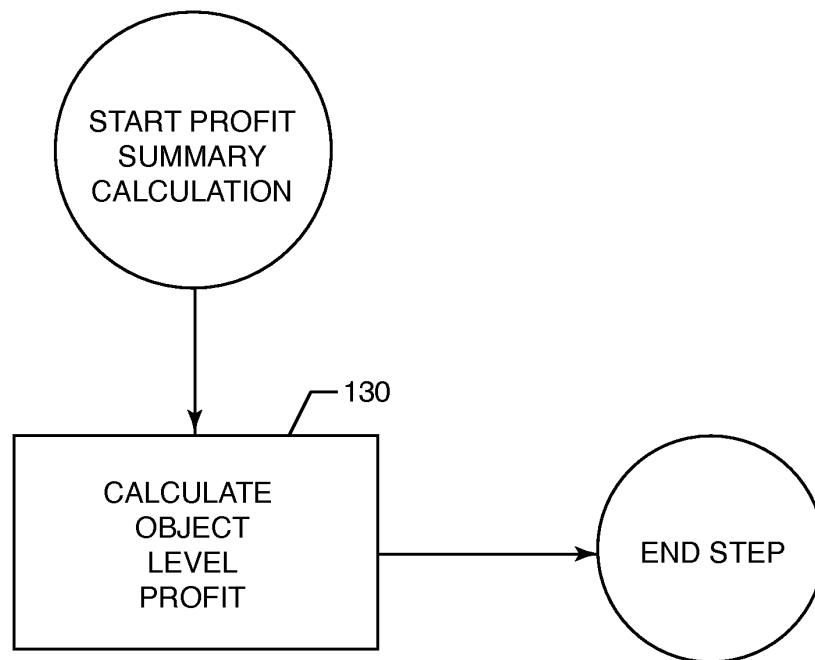


FIG. 13

Airtime
Database
Schema
Entity

Attributes
====>>>>

DPM Example

Plane	row_id	orig_bal	et_orig_ba	p-orig_b	mp_net_ba	to_last_12	rs_last_1	no_seats 1	no_seats 2	no_seats 3	teg	...
	plane_id											

Flight	row_id	t_origination	pt_landing	1st_fare	2nd_fare	3rd_fare	schd_hours	distance	lliance_re	ins_fac	risk_factor	...
	flt_id											

Customer	row_id	loyalty_rtn	ene_miles	or_score	alliance	...
	cust_id					

Employee	row_id	salary&be	...
	emp_id		

Financial	row_id	period_am	fin_name	period	type	...
	finan_id					

Transactions	row_id	tm_amt	seat	fit	date	type	...
	tran_id						

Treatment rts	row_id	25_yr_rate	pool_rt	...
	treatment_id			

grouping tables:

emp_to_flt_dt	row_id	emp_id	flt_id
---------------	--------	--------	--------

cust_to_tran	row_id	cust_id	tran_id
--------------	--------	---------	---------

cust_to_seat	row_id	cust_id	seat_id	flt_id
--------------	--------	---------	---------	--------

plane_to_flight	row_id	plane_id	flt_id	date
-----------------	--------	----------	--------	------

loc_to_gnd_cst	row_id	loc_id	finan_id
----------------	--------	--------	----------

12 / 12

FIG. 14

- 1 -

prior application and the national or PCT International filing date of this application.

<u>60/128,769</u>	<u>April 9, 1999</u>	<u>Pending</u>
Appln. Ser. No.	Filing Date	Status

<u>PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY</u>	<u>BERK-37617</u>
Title	Attorney Docket No.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Scott W. Kelley, Registration No. 30,762; Stuart O. Lowry, Registration No. 26,563; John D. Bauersfeld, Registration No. 24,496; John E. Kelly, Registration No. 24,269; Kamran Fattahi, Registration No. 35,758; and Aaron T. Borrowman, Registration No. 42,348.

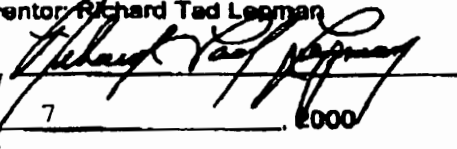
Direct all telephone calls to Scott W. Kelley, Esq. at telephone No. (818) 347-7900.

Address all correspondence to:

Scott W. Kelley
KELLY BAUERSFELD LOWRY & KELLEY, LLP
6320 Canoga Avenue, Suite 1650
Woodland Hills, California 91367

- 3 -

Full name of sole inventor: Richard Ted Leeman

Inventor's signature: 

Date: Apr. 7 2000

Residence: London, United Kingdom

Citizenship: UNITED STATES OF AMERICA

Post Office Address: Park House
21 Ravenscourt Park
London W8 OTJ
United Kingdom

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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		
First Named Inventor/Applicant Name:		Richard Tad Lepman		
Filer:		Scott W. Kelley/Jody Cohan		
Attorney Docket Number:		BERKE-53633		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				462

Electronic Acknowledgement Receipt	
EFS ID:	9345304
Application Number:	13017952
International Application Number:	
Confirmation Number:	7662
Title of Invention:	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY
First Named Inventor/Applicant Name:	Richard Tad Lepman
Customer Number:	26252
Filer:	Scott W. Kelley/Jody Cohan
Filer Authorized By:	Scott W. Kelley
Attorney Docket Number:	BERKE-53633
Receipt Date:	31-JAN-2011
Filing Date:	
Time Stamp:	17:30:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$462
RAM confirmation Number	5271
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Application Data Sheet	53633_ADS.pdf	1031792 7ebc35ff4d5ab1d91teecbd6a84f7cfe90f0bc94	no	4
Warnings:					
Information:					
2		12401101_App_as_filed.pdf	1910028 4f68d6c56a39e7182d847f8ddf3bfa24d9a3d251	yes	55
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	52	
	Claims		53	54	
	Abstract		55	55	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	12401101_Drawings_as_filed.pdf	148198 5b59c8843de5c3cb7e123270f3bf624db0e05a1f	no	12
Warnings:					
Information:					
4	Oath or Declaration filed	12401101_Dec_POA.pdf	81316 fcee97f0e68cf0b24ad564153d1bbab5fda506d	no	3
Warnings:					
Information:					
5	Fee Worksheet (PTO-875)	fee-info.pdf	33409 b4aa22a6c852f01fdcbd35952f242dd651f9711b	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			3204743		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 13/017,952				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	82		N/A				
SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A	N/A	270		N/A				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	9	minus 20 = *	x 26 =	0.00	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x 110 =	0.00						
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00						
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	462		TOTAL				
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
13/017,952	01/31/2011	3693	462	BERKE-53633	9	1

CONFIRMATION NO. 7662

26252
KELLY LOWRY & KELLEY, LLP
6320 CANOGA AVENUE
SUITE 1650
WOODLAND HILLS, CA 91367

FILING RECEIPT



OC000000045971647

Date Mailed: 02/14/2011

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Richard Tad Lepman, Berkeley, CA;

Power of Attorney:

John Kelly--24269 Aaron Borrowman--42348
John Bauersfeld--24496
Stuart Lowry--26563
Scott Kelley--30762
Kamran Fattahi--35758

Domestic Priority data as claimed by applicant

This application is a CON of 12/401,101 03/10/2009 PAT 7,882,137 *
which is a DIV of 11/354,798 02/15/2006 PAT 7,596,521
which is a CON of 09/545,628 04/07/2000 ABN
which claims benefit of 60/128,769 04/09/1999
(*)Data provided by applicant is not consistent with PTO records.

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

If Required, Foreign Filing License Granted: 02/11/2011

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/017,952**

Projected Publication Date: 05/26/2011

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

Preliminary Class

705

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	Group Art Unit: 3687
	)	
Richard Tad Lepman	)	Examiner: Andrew J. Rudy
	)	
Serial No. 13/017,952	)	
[Continuation of Serial No.	)	
12/401,101]	)	Docket No. BERKE-53633
	)	
Filed: January 31, 2011	)	
[Concurrently; parent filed March 10,	)	
2009]	)	
	)	
For: PROCESS FOR DETERMINING	)	
OBJECT LEVEL PROFITABILITY	)	
_____	)	

PRELIMINARY AMENDMENT

MS: Amendment
Commissioner for Patents
VIA E-FILE
Alexandria, VA

Dear Sir or Madam:

In the above-identified continuation application, filed concurrently herewith, the following Preliminary Amendment is submitted:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 7 of this paper.

Remarks/Arguments begin on page 20 of this paper.

Amendments to the Specification:

At page 1, amend Paragraph 0001 as follows:

[0001] This application is a continuation of co-pending U.S. Application Serial No. 12/401,101, filed March 10, 2009, which is a division of co-pending U.S. Application Serial No. 11/354,798, filed February 15, 2006, which is a continuation application of United States Patent Application Serial No. 09/545,628, filed April 7, 2000, which claims priority from provisional patent application Serial No. 60/128,789, filed April 9, 1999.

At page 8, amend Paragraph 0044 as follows:

[0044] In the step of establishing for processing the prepared information for rule establishment providing the information necessary to select objects and perform the correct profit calculus is accomplished. The step of calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information includes calculating net interest, other revenue, direct expense, and/or provision for the selected set of prepared information. Net Interest (NI) is the summation of interest income, value of funds provided and earnings on equity funds used less the sum of interest expense and cost of funds used. Other Revenues (OR) is a measure of profit contribution from non-interest related sources. Direct Expense (DE) is the profit value reduction due to marginal resource consumption by the object. Provisioning (P) is the expected profit value adjustment for future outcomes related to the object. Indirect Expense (IE) is an apportioned profit value adjustment for all non-object related resource consumption by the business.

At page 8, delete Paragraph 0045 as follows:

~~[0045] The step of fully absorbed profit adjustment, Indirect Expense (IE), is an apportioned profit value adjustment for all non-object related resource consumption by the business.~~

At page 8, amend Paragraph 0046 as follows:

[0046] In the step of combining the five profit values, $NI + OR - DE - P - IE$, may be adjusted for taxes and/or object economic value. Some of the profit values may have no rules and hence null or zero value.

At page 11, amend Paragraph 0069 as follows:

[0069] This classification provides for additive profit measures across the five components. The calculation process is designed to be independent across classes 1, 2, 3, & 4 & 5 above with the addition of class five to preserve sum-of-the-parts integrity without simultaneous calculations typically found in profit measurement processes. When all five profit measures (49) are summed at the lowest level of profit detail, a consistent set of profit values for all types of aggregations (30) are possible – all profit measurement then originates from the same point in a profit database. The simultaneous use of these five analytical frameworks makes possible a detailed level of profit calculation consistent with GAAP.

At page 12, amend Paragraph 0072 as follows:

[0072] In the step of establishing for processing (41) the prepared information on how to select objects and perform the correct profit calculus rule mapping (47) is accomplished. The

step of calculating (48) at least one marginal value of profit using established rules as applied to a selected set of prepared information includes calculating net interest (NI), other revenue (OR), direct expense (DE), and/or provision for the selected set of prepared information. Provisioning (P) is expected profit value adjustment for future outcomes related to the object. ~~The step of fully absorbed profit adjustment, indirect expense (IE), is an~~ apportioned profit value adjustment for a non-object related resource consumption by the business. The foregoing elements of the invention, which have been explained at a micro-elemental level, can be advantageously employed in massive and parallel processing power (41). The present invention gives businesses the ability to resolve profit measures at a level of detail (49) necessary for all types of applications of profit oriented performance measurement or detailed profitability data as an output (42) for enabling aggregation (30) to a particular customer, product or organization within a business.

At page 19, amend Paragraph 0084 as follows:

[0084] With reference to FIG. 5, the database is first populated (50). Rules are maintained (51), as will be more fully discussed herein, and the NI, OR, DE, ~~and P and IE~~ are calculated (52-~~56~~55). Next, ~~the IE is calculated (56) to arrive at all objects calculated~~ profit values are summed for a calculation of the object profitability (57). This process is repeated for all objects. After the last object (58), the process is finished as the detailed profitability database is obtained. FIGS. 6-13 describe in more detail the steps taken in FIG. 5 in accordance with the present invention.

At page 35, amend Paragraph 0107 as follows:

[0107] Indirect expense, by its nature is not related directly to an Object, therefore apportionment techniques are used to allocate indirect expense to an Object. Any apportionment function is allowed as long as it is derivable at the object level using ratios of attributes available at the object level to the summation of this available attribute across all objects receiving the apportioned expense. In sum implementations this calculation is dependent on object level calculations and therefore processed sequentially (e.g. ratios 3 & 6 below). Otherwise, when the IE rules are independent of object level calculations IE can be processed in parallel with the other profit calculations (e.g. ratios 1, 2, 4, 5, & 7) . Examples of this type of ratio calculation (the function "F" used in the IE calculation types) are:

At page 55, amend the Abstract as follows:

A process for determining object level profitability includes the steps of (1) preparing information to be accessed electronically, (2) establishing rules for processing the prepared information, (3) calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information, ~~(4) calculating a fully absorbed value of profit adjustment using established rules as applied to the selected set of prepared information,~~ and (54) combining the at least one marginal value of profit and fully absorbed value of profit adjustment to create a measure for object level profitability. The inventive process gives management profit measures tailored to its need for accurate decision oriented profit information required to manage a large organization based on profit measurement.

ABSTRACT

A process for determining object level profitability includes the steps of (1) preparing information to be accessed electronically, (2) establishing rules for processing the prepared information, (3) calculating at least one marginal value of profit using established rules as applied to a selected set of prepared information, and (4) combining the at least one marginal value of profit and fully absorbed value of profit adjustment to create a measure for object level profitability. The inventive process gives management profit measures tailored to its need for accurate decision oriented profit information required to manage a large organization based on profit measurement.

The listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

[Claim 1] (Currently amended) A process for determining object level profitability in a relational database management system, comprising the computer implemented steps of:

providing a computerized profit database having profit information;

providing a relational database management system operable in association with the computerized profit database;

preparing the profit information to be accessed electronically through the relational database management system, including the step of calculating opportunity values for funds used or supplied by each object being measured;

establishing, in the relational database, rules for processing the prepared information, including the steps of providing information necessary to select objects and performing a profit calculus;

calculating using the relational database management system to independently calculate at least one marginal value of profit for each object being measured using the established rules as applied to a selected set of prepared information; and

calculating a fully absorbed profit adjustment value for each object being measured; and

combining the at least one marginal value of profit and the fully absorbed profit adjustment value to create a measure for object level profitability.

[Claim 2] (Original) The process of claim 1, wherein the relational database comprises a structured query language (SQL).

[Claim 3] (Cancelled)

[Claim 4] (Cancelled)

[Claim 5] (Currently amended) The process of claim 1, wherein the step of calculating at least one marginal value of profit includes the steps of calculating net interest (NI), other revenue (OR) and direct expense (DE), wherein net interest (NI) is the summation of interest income, value of funds provided and earnings on equity funds used less the sum of interest expense and costs of funds used, other revenue (OR) is a measure of profit contribution from non-interest related sources, and direct expense (DE) is the profit value reduction due to marginal resource consumption by the object and indirect expense (IE) due to non-object related resource consumption.

[Claim 6] (Original) The process of claim 1, wherein the step of calculating at least one marginal value of profit includes the step of provisioning (P) for the selected set of prepared information, provisioning being the expected profit value adjustment for future outcomes related to the object.

[Claim 7] (Currently amended) The process of claim 6, ~~wherein including the step of calculating a fully absorbed profit adjustment value includes the step of~~ by calculating the value for indirect expense (IE) which is an apportioned profit value adjustment for all non-object related resource consumption.

[Claim 8] (Original) The process of claim 7, wherein the combining step includes the steps of adding net interest (NI) and other revenues (OR), and subtracting therefrom direct expense (DE), provisioning (P) and indirect expense (IE).

[Claim 9] (Original) The process of claim 8, including the step of adjusting the measure for object level profitability for taxes and/or object economic value.

[Claim 10] (New) The process of claim 1, wherein the opportunity values are based on matched maturity funds transfer pricing theory, where the values are market alternative supplies or uses of funds having matched interest and payment characteristics.

[Claim 11] (New) The process of claim 5, wherein the Net Interest (NI) is calculated as:

$$\begin{aligned}\text{Int Inc } (o_i) &= \text{Interest Income of object } o_i \\ - \text{COF } (o_i) &= \text{Cost of funds used by object } o_i \\ - \text{Int Exp } (o_i) &= \text{Interest Expense for object } o_i \\ + \text{VOF } (o_i) &= \text{Value of funds provided by object } o_i\end{aligned}$$

according to:

$$\begin{aligned}\text{Int Inc } (o_i) &= \text{AAB } (o_i) * \text{rate}_{\text{asset}} (o_i), \text{ only if object attribute doesn't exist,} \\ \text{COF } (o_i) &= \text{AAB } (o_i) * R_t \\ \text{Int Exp } (o_i) &= \text{ALB } (o_i) * \text{rate}_{\text{liability}} (o_i), \text{ only if object attribute doesn't} \\ &\text{exist, and}\end{aligned}$$

$$\text{VOF } (o_i) = \text{ALB } (o_i) * R_t,$$

wherein:

$$\begin{aligned}\text{AAB } (o_i) &= \text{Average Asset Balance of the object } o_i, \\ \text{ALB } (o_i) &= \text{Average Liability Balance of the object } o_i, \\ \text{rate}_{\text{asset}} (o_i) &= \text{Effective interest rate for object } o_i \text{ as an asset balance,} \\ \text{rate}_{\text{liability}} (o_i) &= \text{Effective interest rate for object } o_i \text{ as a liability} \\ &\text{balance, and}\end{aligned}$$

R_t = Treatment rate based on the identified treatment for the object's product attributes.

[Claim 12] (New) The process of claim 11, including the step of calculating earnings on allocated equity, where the summation is taken over all asset balances, according to:

$$EOAE(o_i) = R_{equity} * ER * \sum AB_{(asset, t)}(o_i), \text{ wherein:}$$

$AB_{(asset, t)}(o_i)$ = Average Asset balances of the object o_i , including any allocated asset balances,

ER = Equity Ratio, and

R_{equity} = Treatment Rate for equity.

[Claim 13] (New) The process of claim 11, including the step of calculating earnings on allocated equity according to:

$$EOAE(o_i) = R_{equity} * \sum [Amount(o_i) * W(Wt(o_i)) * Cap Ratio], \text{ wherein:}$$

$Amount(o_i)$ = Amount(s) associated with object 'a' This may be the average asset balances of the object 'o_i' including any allocated asset balances, or may be an object parameter,

$Wt(type(o_i))$ = Code needed to identify the weight for object o balances, at the object-type level,

$W(Wt(type(o_i)))$ = determined by the weight code,

Cap Ratio = An appropriate risk-weighted capital ratio chosen, and

R_{equity} = Treatment Rate for equity.

[Claim 14] (New) The process of claim 11, including the step of calculating earnings on allocated equity, according to:

$$EOAE(o_i) = \sum R_{equity} * E_{cohort}(o)(Amount(o_i)), \text{ or } \sum R_{equity} * [\alpha +$$

$\beta * Amount(o_i)]$, wherein:

Amount(o_i) = An amount or amounts related to the object, such as average balances of the object (denoted $AB_{(c,t)}(o_i)$,

Cohort(o_i) = The cohort of objects in which object o is a member,

$E_{\text{cohort}}(o_i)$ = The equity allocation rule for the cohort of object o , according to a linear (two-valued) function that operates on Amount(o_i) of the form $\alpha + \beta \cdot \text{Amount}(o)$, and

R_{equity} = Treatment Rate(s) for equity for the Amount(o_i) value(s).

[Claim 15] (New) The process of claim 5, wherein Net Interest (NI) is calculated as the summations over the possible balance variables for the object, according to:

$$\text{Int Inc}(o_i) = \sum_{\forall c,t} AB_{(\text{asset } c,t)}(o_i) * \text{rate}_{(\text{asset } c,t)}(o_i), \text{ calculate only if}$$

object attribute doesn't exist,

$$- \text{COF}(o_i) = \sum_{\forall c,t} AB_{(\text{asset } c,t)}(o_i) * R_{(\text{asset } c,t)} R_{(c,t)}(\text{pt}(o))$$

$$- \text{Int Exp}(o_i) = \sum_{\forall c,t} AB_{(\text{liability } c,t)}(o_i) * \text{rate}_{(\text{liability } c,t)}(o_i), \text{ only if object}$$

attribute doesn't exist,

$$+ \text{VOF}(o_i) = \sum_{\forall c,t} AB_{(\text{liability } c,t)}(o_i) * R_{(\text{liability } c,t)} R_{(c,t)}(\text{pt}(o)), \text{ wherein:}$$

$AB_{(c,t)}(o_i)$ = Average Balances of the object o_i ,

$\text{rate}_{(c,t)}(o_i)$ = Effective interest rate for the corresponding balance asset or liability,

$R_t(o)$ = Object o 's product type/group as needed to identify treatment rate,

$R_{(c,t)}(\text{pt}(o))$ = Rate (treatment rate) for objects of this product type/group, given the balance class, and tier,

$\text{Int Inc}(o_i)$ = Interest Income of object o_i ,

COF (o_i) = Cost of funds used by object o_i,
 Int Exp (o_i) = Interest Expense for object o_i, and
 VOF (o_i) = Value of funds provided by object o_i.

[Claim 16] (New) The process of claim 15, including the step of calculating earnings on allocated equity, where the summation is taken over all asset balances, according to:

$$EOAE(o_i) = R_{equity} * ER * \sum AB_{(asset, t)}(o_i), \text{ wherein:}$$

$AB_{(asset, t)}(o_i)$ = Average Asset balances of the object o_i, including any allocated asset balances,

ER = Equity Ratio, and
 R_{equity} = Treatment Rate for equity.

[Claim 17] (New) The process of claim 15, including the step of calculating earnings on allocated equity according to:

$$EOAE(o_i) = R_{equity} * \sum [Amount(o_i) * W(Wt(o_i)) * Cap Ratio], \text{ wherein:}$$

Amount(o_i) = Amount(s) associated with object 'a' This may be the average asset balances of the object 'o_i' including any allocated asset balances, or may be an object parameter,

Wt(type(o_i)) = Code needed to identify the weight for object o balances, at the object-type level,

W(Wt(type(o_i))) = determined by the weight code,

Cap Ratio = An appropriate risk-weighted capital ratio chosen, and

R_{equity} = Treatment Rate for equity.

[Claim 18] (New) The process of claim 15, including the step of calculating earnings on allocated equity, according to:

$EOAE(o_i) = \sum R_{equity} * E_{cohort}(o)(Amount(o_i)), \text{ or } \sum R_{equity} * [\alpha +$
 $\beta * Amount(o_i)], \text{ wherein:}$
 $Amount(o_i) =$ An amount or amounts related to the object, such as
average balances of the object (denoted $AB_{(c,s,t)}(o_i)$,
 $Cohort(o_i) =$ The cohort of objects in which object o is a member,
 $E_{cohort}(o_i) =$ The equity allocation rule for the cohort of object o ,
according to a linear (two-valued) function that operates on $Amount(o_i)$ of the
form $\alpha + \beta * Amount(o)$, and
 $R_{equity} =$ Treatment Rate(s) for equity for the $Amount(o_i)$ value(s).

[Claim 19] (New) The process of claim 5, wherein Net Interest (NI) is calculated as the summations over the possible balance attributes for the objects, according to:

$$\begin{aligned}
 \text{Int Inc } (o_i) &= \sum_{\forall c,t} AB_{(asset\ c, t)}(o_i) * rate_{(asset\ c,t)}(o_i), \text{ only if object} \\
 &\text{attribute doesn't exist,} \\
 - \text{COF } (o_i) &= \sum_{\forall c,t} AB_{(asset\ c, t)}(o_i) * R_{(asset\ c, t)}(type_{p,a}(o_i)), \\
 - \text{Int Exp}(o_i) &= \sum_{\forall c,t} AB_{(liability\ c,t)}(o_i) * rate_{(liability\ c,t)}(o_i), \text{ only if object} \\
 &\text{attribute doesn't exist,} \\
 + \text{VOF}(o_i) &= \sum_{\forall c,t} AB_{(liability\ c, t)}(o_i) * R_{(c,t)}(type_{p,a}(o_i)),
 \end{aligned}$$

wherein:

$AB_{(c, t)}(o_i)$ = Average Balances of the object o_i ,
 $rate_{(c, t)}(o_i)$ = Effective interest rate for the corresponding balance,
 $Type_{p, a}(o_i)$ = Object o_i 's product and object attributes as needed to
identify treatment,

$R_{(c, t)}(\text{type}_{p, a}(o_i))$ = Rate (treatment rate) for this object's product type, given the balance class, and tier/tenor,

$\text{Int Inc}(o_i)$ = Interest Income of object o_i ,

$\text{COF}(o_i)$ = Cost of funds used by object o_i ,

$\text{Int Exp}(o_i)$ = Interest Expense for object o_i , and

$\text{VOF}(o_i)$ = Value of funds provided by object o_i .

[Claim 20] (New) The process of claim 19, including the step of calculating earnings on allocated equity, where the summation is taken over all asset balances, according to:

$$\text{EOAE}(o_i) = R_{\text{equity}} * \text{ER} * \sum \text{AB}_{(\text{asset}, t)}(o_i), \text{ wherein:}$$

$\text{AB}_{(\text{asset}, t)}(o_i)$ = Average Asset balances of the object o_i , including any allocated asset balances,

ER = Equity Ratio, and

R_{equity} = Treatment Rate for equity.

[Claim 21] (New) The process of claim 19, including the step of calculating earnings on allocated equity according to:

$$\text{EOAE}(o_i) = R_{\text{equity}} * \sum [\text{Amount}(o_i) * W(\text{Wt}(o_i)) * \text{Cap Ratio}], \text{ wherein:}$$

$\text{Amount}(o_i)$ = Amount(s) associated with object 'a' This may be the average asset balances of the object 'o' including any allocated asset balances, or may be an object parameter,

$\text{Wt}(\text{type}(o_i))$ = Code needed to identify the weight for object o balances, at the object-type level,

$W(\text{Wt}(\text{type}(o_i)))$ = determined by the weight code,

Cap Ratio = An appropriate risk-weighted capital ratio chosen, and

R_{equity} = Treatment Rate for equity.

[Claim 22] (New) The process of claim 19, including the step of calculating earnings on allocated equity, according to:

$$EOAE(o_i) = \sum R_{equity} * E_{cohort}(o)(Amount(o_i)), \text{ or } \sum R_{equity} * [\alpha + \beta * Amount(o_i)], \text{ wherein:}$$

Amount(o_i) = An amount or amounts related to the object, such as average balances of the object (denoted AB_(c,s,t)(o_i),

Cohort(o_i) = The cohort of objects in which object o is a member,

E_{cohort}(o_i) = The equity allocation rule for the cohort of object o, according to a linear (two-valued) function that operates on Amount(o_i) of the form $\alpha + \beta * Amount(o)$, and

R_{equity} = Treatment Rate(s) for equity for the Amount(o_i) value(s).

[Claim 23] (New) The process of claim 5, wherein Net Interest (NI) is calculated where summations are over the possible balance variables for the object, according to:

$$Int\ Inc(o_i) = \sum AB_{(asset\ c,\ t)}(o_i) * rate_{(asset\ c,\ t)}(o_i) \text{ only if object attribute doesn't exist,}$$

- COF(o_i) = $\sum AB_{(asset\ c,\ t)}(o_i) * R_{(asset,\ t)}(type_{p,a,b}(o_i)),$

- Int Exp(o_i) = $\sum AB_{(liability,\ t)}(o_i) * rate_{(liability,\ t)}(o_i) \text{ only if object attribute doesn't exist,}$

+ VOF(o_i) = $\sum AB_{(liability,\ t)}(o_i) * R_{(liability,\ t)}(type_{p,a,b}(o_i)), \text{ wherein:}$

AB_(c,t)(o_i) = Average Balances of the object,

rate_(c,t)(o_i) = Effective interest rate for the corresponding balance amounts,

type_{p,a,b}(o_i) = Object o_i's product, object attribute, and behavior types as needed to identify treatment rate,

$R_{(c,b)}(\text{type } p,a,b(o_i))$ = Rate (treatment rate) for objects of this product type, balance class, and tier/tenor,

Int Inc(o_i) = Interest Income of object o_i ,

COF (o_i) = Cost of funds used by object o_i ,

Int Exp (o_i) = Interest Expense for object o_i , and

VOF (o_i) = Value of funds provided by object o_i .

[Claim 24] (New) The process of claim 23, including the step of calculating earnings on allocated equity, where the summation is taken over all asset balances, according to:

$$EOAE(o_i) = R_{\text{equity}} * ER * \sum AB_{(\text{asset},t)}(o_i), \text{ wherein:}$$

$AB_{(\text{asset},t)}(o_i)$ = Average Asset balances of the object o_i , including any allocated asset balances,

ER = Equity Ratio, and

R_{equity} = Treatment Rate for equity.

[Claim 25] (New) The process of claim 23, including the step of calculating earnings on allocated equity according to:

$$EOAE(o_i) = R_{\text{equity}} * \sum [\text{Amount}(o_i) * W(Wt(o_i)) * \text{Cap Ratio}], \text{ wherein:}$$

Amount(o_i) = Amount(s) associated with object 'a' This may be the average asset balances of the object ' o_i ' including any allocated asset balances, or may be an object parameter,

$Wt(\text{type}(o_i))$ = Code needed to identify the weight for object o balances, at the object-type level,

$W(Wt(\text{type}(o_i)))$ = determined by the weight code,

Cap Ratio = An appropriate risk-weighted capital ratio chosen, and

R_{equity} = Treatment Rate for equity.

[Claim 26] (New) The process of claim 23, including the step of calculating earnings on allocated equity, according to:

$$EOAE(o_i) = \sum R_{equity} * E_{cohort}(o)(Amount(o_i)), \text{ or } \sum R_{equity} * [\alpha + \beta * Amount(o_i)], \text{ wherein:}$$

Amount(o_i) = An amount or amounts related to the object, such as average balances of the object (denoted AB_(c,s,t)(o_i),

Cohort(o_i) = The cohort of objects in which object o is a member,

E_{cohort}(o_i) = The equity allocation rule for the cohort of object o, according to a linear (two-valued) function that operates on Amount(o_i) of the form $\alpha + \beta * Amount(o)$, and

R_{equity} = Treatment Rate(s) for equity for the Amount(o_i) value(s).

[Claim 27] (New) The process of claim 7, wherein the value for indirect expense (IE) is calculated as:

$$\text{before deferral } IE(o_i) = IE_k * \frac{F(IE_k)(o_i)}{\sum_j F(IE_k)(o_j)} \text{ added over each set } IE_k \text{ to}$$

which o_i is related,

$$= \sum_k^{o \in O(IE)} \left(IE_k * \frac{F(IE_k)(o_i)}{\sum_j F(IE_k)(o_j)} \right)$$

and each of these terms is deferred over its amortization period according to any of the amortization rules (cash, straight line, declining balance, or interest amortization calculations), and where AM₁(L,R) is used to denote the amortization rule and its life:

$$IE(o_i) = \sum_k^{o_i \in O(IE)} AM_i(L, R) \left(IE_k * \frac{F(IE_k)(o_i)}{\sum_j^{o_j \in O(IE)} F(IE_k)(o_j)} \right), \text{ and}$$

the result increased by the amounts with remaining amortization life for which amortization was begun in earlier periods.

[Claim 28] (New) The process of claim 6, provisioning (P) of each object is calculated according to:

$$P(o_i) = PG(o_i) * \frac{\text{Balance of } o_i}{\sum_k^{o_k \in RPG(o_i)} \text{Balance } o_k}, \text{ wherein:}$$

PG(o_i) denotes the P group in which o_i is a member.

[Claim 29] (New) The process of claim 6, wherein provisioning (P) is calculated as:

$$P(o_i) = PG(o_i) * \frac{\text{Balance}(o_i) * RF(o_i)}{\sum_k^{o_k \in RPG(o_i)} [\text{Balance}(o_k) * RF(o_k)]}, \text{ wherein:}$$

PG(o_i) denotes the P group in which o_i is a member, and

RF(o_i) denotes the expected adjustment factor for o_i.

[Claim 30] (New) The process of claim 6, wherein provisioning (P) is calculated as:

$$P(o_i) = \text{Exposure}(o_i) * \text{Pr}(o_i) * \text{Expected Value Adjustment}(o_i) * \frac{1}{L_i}, \text{ wherein:}$$

Pr(o_i) is a probability for object o_i, and

L is the expected number of reporting periods during the life of o_i.

[Claim 31] (New) The process of claim 9, wherein the step of adjusting the measure for object level profitability is calculated as:

$$\text{Profit}(o_i) = \{[\text{NIR}(o_i) + \text{OR}(o_i) - \text{DE}(o_i) - \text{IE}(o_i) - \text{P}(o_i)] * (1 - \text{EffectiveTaxRate})\} - \text{SVA}(o_i),$$

where

$$\text{SVA}(o_i) = \alpha(o_i) + \beta(o_i) * \text{Amount}(o_i),$$

and

$\alpha(o_i)$, $\beta(o_i)$ are functions for a cohort of objects in which o_i is a member, and $\text{Amount}(o_i)$ is given by a rule which maps o_i to a data value (such as balance, or allocated equity) also defined at the cohort level.

[Claim 32] (New) The process of claim 9, wherein the step of adjusting the measure for object level profitability includes the calculation:

$$\text{Profit}(o_i) = [\text{NIR}(o_i) + \text{OR}(o_i) - \text{DE}(o_i) - \text{IE}(o_i) - \text{P}(o_i)] * (1 - \text{EffectiveTaxRate})$$
 where, for a two tier taxation system, Effective Tax Rate is calculated as:

$$\text{Effective Tax Rate} = (1 - \text{tax rate 2}) * (\text{tax rate 1}) + \text{tax rate 2}.$$

REMARKS

Applicant submits this Preliminary Amendment which sets forth the claims to be considered in the initial examination of the application.

Respectfully submitted,

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Electronic Patent Application Fee Transmittal				
Application Number:		13017952		
Filing Date:		31-Jan-2011		
Title of Invention:		PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY		
First Named Inventor/Applicant Name:		Richard Tad Lepman		
Filer:		Scott W. Kelley/Jody Cohan		
Attorney Docket Number:		BERKE-53633		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	10	26	260
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	9462142
Application Number:	13017952
International Application Number:	
Confirmation Number:	7662
Title of Invention:	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY
First Named Inventor/Applicant Name:	Richard Tad Lepman
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Application Type:	Utility under 35 USC 111(a)

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Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Preliminary Amendment	53633_Prelim_Amendment.pdf	88099 1145afc3fd898f531bc815bf6fc5532761530740	no	20
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	30335 eb6eb339aae2616f9ed28dea3bee62093568d055	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			118434		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 13/017,952		Filing Date 01/31/2011		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
TOTAL			TOTAL							
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	02/16/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
Total (37 CFR 1.16(i))	* 30	Minus	** 20	= 10	X \$26 =	260	OR	X \$ =		
Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE					TOTAL ADD'L FEE					
260					260					
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =		
Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =		
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE					TOTAL ADD'L FEE					
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633

CONFIRMATION NO. 7662

26252
KELLY LOWRY & KELLEY, LLP
6320 CANOGA AVENUE
SUITE 1650
WOODLAND HILLS, CA 91367

PUBLICATION NOTICE



Title:PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

Publication No.US-2011-0125621-A1

Publication Date:05/26/2011

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTICE OF ALLOWANCE AND FEE(S) DUE

26252 7590 08/09/2013
KELLY & KELLEY, LLP
6320 CANOGA AVENUE
SUITE 1650
WOODLAND HILLS, CA 91367

EXAMINER

RUDY, ANDREW J

ART UNIT

PAPER NUMBER

3687

DATE MAILED: 08/09/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633	7662

TITLE OF INVENTION: PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	11/12/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

26252 7590 08/09/2013
KELLY & KELLEY, LLP
6320 CANOGA AVENUE
SUITE 1650
WOODLAND HILLS, CA 91367

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633	7662

TITLE OF INVENTION: PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	11/12/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
RUDY, ANDREW J	3687	705-030000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633	7662

26252	7590	08/09/2013
KELLY & KELLEY, LLP 6320 CANOGA AVENUE SUITE 1650 WOODLAND HILLS, CA 91367		

EXAMINER	
RUDY, ANDREW J	

ART UNIT	PAPER NUMBER
3687	

DATE MAILED: 08/09/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 496 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 496 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/017,952	Applicant(s) LEPMAN, RICHARD TAD	
	Examiner ANDREW JOSEPH RUDY	Art Unit 3687	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the 16 February 2011 Amendment.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1,2 and 5-32. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☒ Notice of References Cited (PTO-892) | 5. ☒ Examiner's Amendment/Comment |
| 2. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

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DETAILED ACTION

1. Applicant's February 16, 2011 Amendments to the Specification are acceptable and have been entered.
2. Applicant's February 16, 2011 Amendment cancelled claims 3 and 4.
3. Pertinent references of interest are noted on the attached PTO-892.

Allowable Subject Matter

4. Pursuant to Applicant's February 16, 2011 AMENDMENT and REMARKS, claims 1, 2 and 5-32 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record, either alone or in combination, does not disclose, or suggest, Applicant's claim language.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW JOSEPH RUDY whose telephone number is (571)272-6789. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Gart can be reached on 571-272-3955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW JOSEPH RUDY/
Primary Examiner
Art Unit 3687

Notice of References Cited	Application/Control No. 13/017,952	Applicant(s)/Patent Under Reexamination LEPMAN, RICHARD TAD	
	Examiner ANDREW JOSEPH RUDY	Art Unit 3687	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,970,476	10-1999	Fahey, Bill G.	705/28
*	B	US-6,393,387	05-2002	Adriaans et al.	703/27
*	C	US-6,400,996	06-2002	Hoffberg et al.	700/83
*	D	US-7,575,501	08-2009	Molnar, Charles J.	451/5
*	E	US-7,596,521	09-2009	Lepman, Richard Tad	705/35
*	F	US-7,882,137	02-2011	Lepman, Richard Tad	707/793
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	13/017,952	LEPMAN, RICHARD TAD	
	Examiner	Art Unit	
	ANDREW JOSEPH RUDY	3687	

SEARCHED			
Class	Subclass	Date	Examiner
705	28,30,35 ,36R,36T,3 7,38, 39	8/7/2013	AJR
705	400	8/7/2013	AJR
703	27	8/7/2013	AJR

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
705	30,35,36T	8/7/2013	AJR

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
Continuity data reviewed.	8/7/2013	AJR
Inventor name search conducted.	8/7/2013	AJR
Bibliographic data updated.	8/7/2013	AJR

Issue Classification 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	13/017,952	LEPMAN, RICHARD TAD	
	Examiner	Art Unit	
	ANDREW JOSEPH RUDY	3687	

ISSUE CLASSIFICATION									
ORIGINAL				CROSS REFERENCE(S)					
CLASS		SUBCLASS		CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
705		30		705	36T				
INTERNATIONAL CLASSIFICATION									
G	0	6	Q						
				40/00					
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XXXXXXXXXXXXXXXXXXXXXXX (Assistant Examiner) (Date)				/Andrew Joseph Rudy/ 8/7/2013					
(Legal Instruments Examiner) (Date)									
				Total Claims Allowed: 30					
				O.G. Print Claim(s)		O.G. Print Fig.			
				1		5			

☐ Claims renumbered in the same order as presented by applicant		☐ CPA		☐ T.D.		☐ R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original
1	1	29	31		61		121
2	2	30	32		62		122
	3		33		63		123
	4		34		64		124
3	5		35		65		125
4	6		36		66		126
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7	9		39		69		129
8	10		40		70		130
9	11		41		71		131
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BIB DATA SHEET

CONFIRMATION NO. 7662

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
13/017,952	01/31/2011 RULE	705	3687	BERKE-53633		
APPLICANTS Richard Tad Lepman, Berkeley, CA; ** CONTINUING DATA ***** This application is a CON of 12/401,101 03/10/2009 PAT 7882137 * which is a DIV of 11/354,798 02/15/2006 PAT 7596521 which is a CON of 09/545,628 04/07/2000 ABN which claims benefit of 60/128,769 04/09/1999 (*)Data provided by applicant is not consistent with PTO records. ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 02/11/2011						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /ANDREW JOSEPH RUDY/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 12	TOTAL CLAIMS 9	INDEPENDENT CLAIMS 1
ADDRESS KELLY & KELLEY, LLP 6320 CANOGA AVENUE SUITE 1650 WOODLAND HILLS, CA 91367 UNITED STATES						
TITLE PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY						
FILING FEE RECEIVED 722	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit		

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(Depositor's name)
VIA E-MAIL
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633	7662

TITLE OF INVENTION: PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	11/12/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
RUDY, ANDREW J	3687	705-030000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.	2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.	1 <u>KELLY & KELLEY, LLP</u> 2 _____ 3 _____
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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Electronic Patent Application Fee Transmittal				
Application Number:	13017952			
Filing Date:	31-Jan-2011			
Title of Invention:	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY			
First Named Inventor/Applicant Name:	Richard Tad Lepman			
Filer:	Scott W. Kelley/Lori Byer			
Attorney Docket Number:	BERKE-53633			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	890	890

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1190

Electronic Acknowledgement Receipt	
EFS ID:	17280036
Application Number:	13017952
International Application Number:	
Confirmation Number:	7662
Title of Invention:	PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY
First Named Inventor/Applicant Name:	Richard Tad Lepman
Customer Number:	26252
Filer:	Scott W. Kelley/Lori Byer
Filer Authorized By:	Scott W. Kelley
Attorney Docket Number:	BERKE-53633
Receipt Date:	31-OCT-2013
Filing Date:	31-JAN-2011
Time Stamp:	14:15:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

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Payment Type	Credit Card
Payment was successfully received in RAM	\$1190
RAM confirmation Number	551
Deposit Account	
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Issue Fee Payment (PTO-85B)	53633_Issue_Fee_Transmittal. PDF	70978 ad714a53f083b184b17e1f8872275c7d85b233ef	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32136 d0275b50def04c1cca643acb2f6ee85a1e8dfa29	no	2
Warnings:					
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Total Files Size (in bytes):			103114		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

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(Depositor's name)
VIA E-MAIL (Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	01/31/2011	Richard Tad Lepman	BERKE-53633	7662

TITLE OF INVENTION: PROCESS FOR DETERMINING OBJECT LEVEL PROFITABILITY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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EXAMINER	ART UNIT	CLASS-SUBCLASS
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5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Scott W. Kelley/

Date 11-13-2013

Typed or printed name Scott W. Kelley

Registration No. 30,762

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/017,952	12/17/2013	8612316	BERKE-53633	7662

26252 7590 11/26/2013
KELLY & KELLEY, LLP
6320 CANOGA AVENUE
SUITE 1650
WOODLAND HILLS, CA 91367

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 496 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

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APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Richard Tad Lepman, Berkeley, CA;

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