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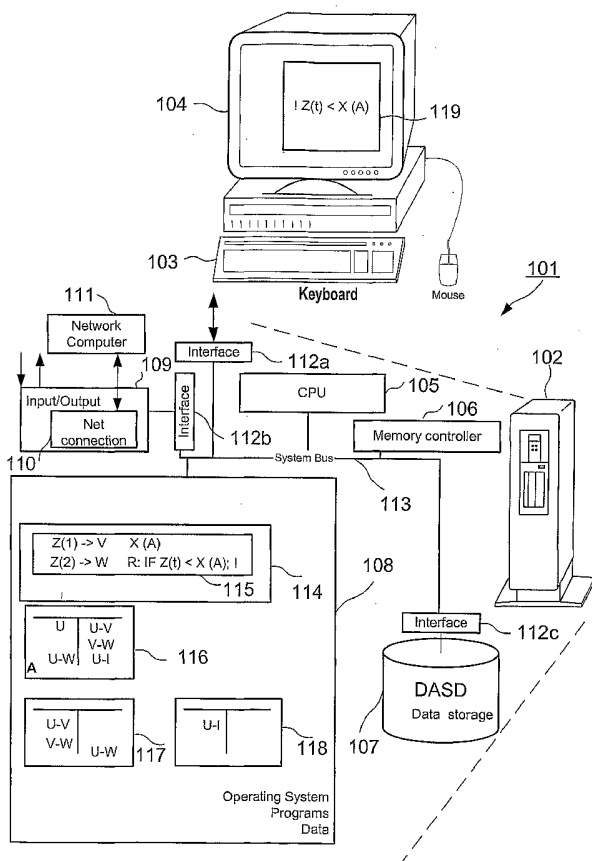
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(54) Title: METHODS AND SYSTEMS FOR AUTOMATIC EVALUATION OF BALANCE SHEET OBJECTS



(57) Abstract: Methods and systems are disclosed for automatic evaluation or value adjustment for balance sheet objects. In one embodiment, a book value for each object in an accounting system is automatically determined. A market value for each object is automatically determined. An intermediate variable from the book value and the market value is automatically formed. The intermediate variable is automatically tested to determine whether it satisfies one or more presettable conditions. One or more actions are performed depending upon the manner and/or degree that one or more of the conditions are satisfied.

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Methods and systems for automatic evaluation of balance sheet objects

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5 Description

The present invention generally relates to methods and systems for automatically evaluating value changes of balance sheet objects. More particularly, the present invention relates to the implementation of impairments, which are depreciations in value for an object or asset, such as securities.

When the value of an object decreases, normally either a decrease in value is entered in an asset account, and at the same time, an offsetting entry is made in a reserve account, or no entry is made. In line with prior implementations, an impairment is formed as needed during this process. An impairment is formed when the value of an object decreases permanently and/or falls below a particular limit value. In such a case, any reserve that may exist is liquidated and an appropriate sum is posted as an expense affecting net income.

However, this approach has a drawback in that a considerable expense arises. In particular, all assets for an object need to be manually checked for a permanent decrease in value by the user on a regular basis. This checking is time-intensive and susceptible to error. If a permanent decrease in value is identified, then it is also necessary for a user to manually initiate an action in a system. If the

complex checking means that a permanent decrease in value is not identified or is identified too late, this can suddenly have surprising and considerably negative effects on a company.

5 Thus, there is a need for a method, software application and/or data processing system providing a more efficient solution of at least a part of the problems described above, particularly it is desirable to provide methods and systems for automated evaluation  
10 of value changes of assets.

The above description is based on the knowledge of the present inventors and not necessarily that known in the art.

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The invention achieves this object by means of a method in line with Claim 1.

The subject matter of the invention is therefore a  
20 method for automatically evaluating value changes for balance sheet objects, the method comprising:  
automatically determining a book value for each object in an accounting system; automatically determining a market value for each object;  
25 automatically forming an intermediate variable from the book value and the market value;  
automatically testing the intermediate variable to determine whether it satisfies one or more presettable conditions; and  
30 automatically performing one or more actions depending upon the manner and/or degree to which one or more of the presettable conditions are satisfied.

Methods consistent with the invention provide a solution of the technical problem of providing an automated process or system for informing a company's management of value changes of a company's assets.

5 Changed values of assets may automatically be incorporated into the accounting system.

Methods consistent with the invention and its embodiments may be implemented using a computer system and an appropriately programmed computer program.

10

Thus, embodiments of the invention are further directed to a computer system, a computer program, and a computer readable medium including a carrier signal, each comprising program code or instructions for performing the inventive method and its embodiments.

15

Such computer program can be installed as one or more programs or program modules on different hardware systems (computers or computer systems), and run separately and independently of each other, in their entirety being capable of performing the inventive method and its embodiments. The different systems may be connected in the form of a network to communicate with each other.

20

Additional objects and advantages of the various embodiments of the invention will be set forth in part in the description, or may be learned by practice of the invention. The objects and advantages of the embodiments of the invention will be realized and attained by means of the elements and combinations particularly pointed out in the appended claims. Embodiments of the invention are disclosed in the

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detailed description section and in the appended independent and dependent claims.

The various embodiments can include and/or exclude different aspects, features and/or advantages, where applicable. In addition, various embodiments can combine one or more aspects or features of other embodiments, where applicable.

It is understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the embodiments of the invention, as claimed. The description of aspects, features and/or advantages of particular embodiments should not be construed as limiting other embodiments or the claims.

Within the concept of this specification, the terms used shall have their usual meaning in the context of the field of data processing unless defined otherwise. Particularly, a computer system broadly refers to any stand alone computer such as a PC or a laptop or a series of computers connected via a network, e.g. a network within a company, or a series of computers connected via the internet. Computer systems and programs may be closely related. As used herein, phrases, such as "the computer provides" and "the program provides or performs specific actions", "a user performs a specific action" are used to express actions by a computer system that may be controlled by a program or to express that the program or program module may be designed to enable the computer system to perform the specific action or to enable a user to

perform the specific action by means of a computer system.

In this context, the term "automatically" is not intended to exclude a user's interactions with the computer system in the course of processing.

It should be understood that the term "presentment" as used herein broadly refers to the specialized definition normally associated with commercial paper (i.e. the production on a negotiable instrument to a drawee) as well as to providing information via electronic means. For example, this electronic presentment may be through the use of an Internet- or intranet website or via e-mail or SMS, e.g. by making a web site accessible to one or more persons. Electronic presentment may also take place by sending computer readable storage media, like disks, ZIP disks, magneto-optical disks, CDs, R/W discs, DVD ROMs etc., e.g. via standard mail.

Methods consistent with the invention and its embodiments may further be implemented, for example, by means of a computer system and a computer software which allows processing business software applications and which allows the use of data bases or database applications and Internet applications.

A first preferred embodiment is characterized in that the objects are securities.

A second preferred embodiment is characterized in that the market value is the price of the object or of the

security multiplied by the number of units available. In this case, the price may also be the current price or a daily price.

- 5 A third preferred embodiment is characterized in that the intermediate variable is a difference between the book value and the market value.

A further preferred embodiment is characterized in that  
10 the impairment price is the market price. The said value adjustment may be either an increase in value or a decrease in value. Since the latter is the more critical for a company, however, it is subsequently put in the foreground. For an increase in value, however,  
15 said features, steps and examples apply in a similar manner. An impairment is the specific case of a alteration in value. The impairment may be permanent or reversible.

- 20 A further preferred embodiment is characterized in that the impairment price is a market price increased or reduced by a presettable value. The presettable value, which may also be a percentage, may also be chosen such that the object no longer satisfies any of the preset  
25 conditions after a value has been adjusted.

In the aforementioned embodiments, the market price may be the current price or a daily price.

- 30 Methods consistent with the invention and its embodiments may further be implemented using a computer-implemented accounting system, for example. A program can automatically query the book value and/or



the acquisition value of the company's objects contained in the system from the database in the accounting system at settable intervals of time for the first mentioned step of the method. The second  
5 mentioned step may be implemented by virtue of current values for one or more objects being loaded automatically from a database which may be available over the Internet, for example the current prices of securities. In the third mentioned step, the program  
10 takes the book values which have been read and the current prices loaded and automatically calculates an intermediate variable, preferably a difference between the book value and the market value which reflects the current loss of value. In this case, the book value,  
15 the acquisition value and the market value preferably refer to the same time, which may be the current time, for example. By way of example, the book value of an object may change over time, e.g. as a result of credit entries or transfer postings. The intermediate variable  
20 is automatically checked by the program to determine whether it satisfies one or more conditions which may be implemented when the system is set up. A possible condition is the query whether the loss of value exceeds a certain, presettable sum within one or more  
25 presettable periods of time and whether the market price is below a certain, presettable value. These and all other indications of value too can naturally also be printed and calculated as percentages. Since the intermediate variable is subject to fluctuations, it is  
30 also possible to evaluate minimum and/or maximum and/or average values within one or more presettable periods of time and to check them to determine whether they satisfy one or more presettable conditions.

Suitable conditions are preferably queries regarding the disparity between the intermediate variable and an average value for the intermediate variable, ascertained over a settable period of time, by a  
5 presetable amount. The conditions also include queries regarding the disparity between the intermediate variable and a minimum disparity for the intermediate variable, ascertained over a settable period of time, by a presetable amount. The  
10 conditions further include queries regarding the disparity between the intermediate variable and a maximum disparity for the intermediate variable, ascertained over a settable period of time, by a presetable amount. And the conditions may include  
15 queries regarding the presetable number of disparities between the intermediate variable and a presetable auxiliary variable in a presetable period of time.

If one or more conditions have been satisfied, then,  
20 depending on the way in which and/or the degree each of the conditions is satisfied, one or more presetable actions are automatically performed that can be implemented when the system is set up, with the or each presetable action preferably being selected from a  
25 list comprising: calculation of an impairment price; sending of a message to a person; sending of a list containing proposals for action to a person; displaying advice regarding the way in which and/or the degree to which the or each of the conditions are satisfied on a  
30 display means, particularly a screen or a printout; performance of a value adjustment for the or each object in the company's accounting system.

In this context the impairment price may be the market price. Alternatively, the impairment price may be above the current market price, specifically such that the object no longer satisfies any of the presettable conditions after a value adjustment has been performed using this increased price. To achieve this, the price may be iteratively increased in settable steps until none of the conditions are satisfied any longer after the value adjustment has been performed. The price calculated in this manner may be automatically proposed to the company or to a user for selection.

It is also possible to send a user a message, particularly an e-mail, which draws attention to the situation using a presettable standard text aligned with the condition in question. It is also possible to present a user with a list containing proposals for action, which are aligned with the respectively satisfied condition, for selection on a screen. By way of example, one or more impairment prices may be provided for entry. In addition, a display icon on a screen, which displays the book prices or values and/or the market prices or values of the objects in a company, can display advice drawing attention to the way in which and/or the degree to which the or each of the conditions are satisfied. For example, an icon such as a stylized traffic light may indicate an addition to the book price or market price. The traffic light can display "red" when a condition has arisen or "yellow" when a condition has almost arisen. When a condition has "almost" arisen, it is possible to define at system setup when a critical value has been reached by more than 80%, for example. In addition, it

is possible to use, automatically, a calculated impairment price or an impairment price that has been presented and selected by a user in order to adjust the value of the or each object in the accounting system.

5 To this end, the difference between an amortized acquisition value and the impairment value can be posted as an expense affecting net income, for example in an expense account. Reserves that have been formed can be liquidated so as to affect net income.

10

In the complete functional depiction of impairment in the course of the accounting operation of a company, the formation of impairments in line with US-GAAP and IAS may be accompanied by asset management for an  
15 existing impairment in line with US-GAAP and IAS and the liquidation of impairments in line with IAS. In addition, there may be a suitable reporting mechanism for existing impairments. Furthermore, there may be means for transferring historical impairments which  
20 have already been implemented and managed to the system.

There may also be transactions for forming impairments and for cancelling impairments which have been formed.

25 In addition, there may be a maintenance transaction for manually inputting impairment prices or values.

Further relevant user interfaces for handling impairments are the change in the conditions in a generic type of object, for example in a loan  
30 agreement.

The statements below refer to the fact that an impairment is formed on the basis of a permanent

decrease in value in the subsection, i.e. in the asset or purchase currency. The alternative, forming a valuation on the basis of a permanent decrease in value in the foreign exchange, i.e. in the valuation  
5 currency, if this is a foreign currency, is possible in a similar manner.

The level at which an impairment is formed may be an asset in a subledger in the account. In the case of  
10 securities, this can mean that an impairment is formed for an asset which is identified by a company code, a valuation range, a valuation class and an identification number and also differentiation terms (deposits, deposit group, portfolio, lot) stored in a  
15 customizing facility. In the case of loans, an impairment may be formed for an asset which is identified by company code, valuation range, valuation class and agreement number, i.e. for an agreement in a valuation range.

20 First, the (accounting) system may be used to store the information about what the level of the probably permanent decrease in value is. For this, the user can, in the case of securities, input a particular price, which may differ from the current market price. In the  
25 case of loans, a cash value may be stored. This "impairment price" or "impairment value" may be stored on the basis of the differentiations comprising company code, valuation range, valuation class and also identification number, deposits, deposit group,  
30 portfolio (securities) or agreement number (loans). Impairment prices or impairment values can thus be stored per asset. For manual input of the impairment prices or values, there may be a corresponding

maintenance transaction in the system. Impairments may be implemented either on scheduled valuation key dates, such as the end of the month, the quarter or the year, or on other dates. Implementation of an impairment does not necessarily include the implementation of normal valuation steps, such as price valuation or foreign currency valuation. Thus, if an impairment is intended to be formed at a time at which a scheduled valuation is also taking place (e.g. end of quarter), two functions may be initiated separately, in which case first the impairment formation and then the valuation should always be performed.

It is advantageous for the implementation of an impairment for an asset (object) if either the asset management type, 'securities/loans/money dealings' or the asset management type 'index bonds' is stored in the asset management method. In principle, it is possible to perform three steps: first amortization, then reset of all valuations not affecting net income in the subsection, and lastly depreciation affecting net income in the subsection.

If the asset management method for the corresponding asset stores an 'amortization' step, then it is possible to perform amortization on the key date of the impairment formation. The movements needing to be generated in that case may be generated using the update types which are also used for a normal valuation.

If appreciations or depreciations not affecting net income have arisen for the asset (object) in the subsection in the past (either through key date

valuations or transfer postings), then these can be reset. It is thus possible to use the two sums in the equity item's asset and valuation currency in the subsection and hence to generate a movement. If the two  
5 sums have different arithmetic signs, then two movements may be generated. When this step has been performed, the asset has an equity item not affecting net income in the subsection amounting to zero both in the asset currency and in the valuation currency. If  
10 there are no appreciation/depreciations not affecting net income in the subsection (this is possible, by way of example, in the case of an asset in the 'held to maturity' category), then nothing happens in this step. The update types which may be used to generate the  
15 movements may be stored separately in the customizing facility (when the system is set up).

It is also possible to perform depreciation not affecting net income. This involves depreciation in the  
20 subsection. This is first calculated in the asset currency taking into account the previously stored impairment price or value and is then converted to valuation currency using the foreign exchange market price. The depreciation sums are used to generate a  
25 movement which is posted so as to affect net income. In the sum ledger, this depreciation resulting from an impairment is identified separately from the rest of the valuations. The update types used to generate the movements may be stored separately in the customizing  
30 facility. The basis for the depreciation affecting net income in the subsection is the explicitly stored impairment prices or values.

The book value of an asset can be in an asset currency and in a valuation currency. These two sums implicitly produce the "foreign exchange book price". This implicit foreign exchange book price may be changed  
5 either by resetting the valuation not affecting net income in the subsection or by using the depreciation affecting net income in the subsection.

An impairment in the case of bonds frequently means aligning future sets of plans with interest or  
10 redemptions. This can be done by manually changing the conditions in the generic group. In this case, it should be remembered that such alignment operations have effects on all assets in the corresponding generic group, such as, for example, on all deposits and also  
15 on all valuation ranges. Effects of such alignment operations can arise, as discussed below.

An effect on the amortization for the impairment formation is normally not desired. Care should therefore be taken during the alignment operations to  
20 ensure that the calculated LAC or SAC values are not influenced. The depreciation affecting net income for the impairment formation is not affected by the alignment operations, since the depreciation is performed on the basis of an explicitly stored  
25 impairment price. The same applies to subsequent key date valuations.

As in the case of bonds, an impairment in the case of loans frequently means aligning future sets of plans with interest or redemptions. This can also be  
30 depicted manually using changed or new conditions. In this case, such alignment operations relate to all valuation ranges. Effects of such alignment operations can arise as described below.



An effect on the amortization for the impairment formation is normally not wanted. In the case of alignment operations, it is therefore necessary to ensure that the calculated LAC or SAC values are not  
5 influenced. A loan's cash value calculated by the system can be influenced by the alignment operations. If this cash value is used as an impairment value, then there may be effects on the depreciation affecting net income within the context of the impairment formation.  
10 These effects are normally wanted. If the key date valuation involves the use of the loan's cash value calculated by the system, then for the above reason (influence on the cash value) it is also possible to influence subsequent key date valuations. These  
15 effects are normally wanted.

For the function for forming an impairment, there will be an appropriate cancellation function. It is possible to cancel per asset. If there are key date valuations  
20 after the impairment which is to be cancelled, then these may be cancelled separately beforehand. Cancelling an impairment entails cancellation of all derived business transactions (net income from prices) already booked which there may be afterwards.

25 The following description lists selected business transactions. It describes what effects these business transactions have on an existing impairment or what effects an existing impairment has on these business  
30 transactions.

Apart from one exception, the valuation of an asset with an existing impairment is performed in line with

the settings in the associated asset management method. The exception exists in connection with amortizations. Amortizations are not performed for assets with an existing impairment, i.e. if this valuation step is  
5 stored in the asset management method, it is suppressed and a corresponding message is output in the valuation log. For an asset with an existing impairment, the resetting of a valuation works in a similar manner to the case with no impairment.

10 These statements mean, in particular, that, in the case of valuations, appreciations can arise in the subsection again, and that balances can also be built up again on the equity item not affecting net income subsection.

15

Asset outgoings in this case include the business transactions of redemption to be received, redemption to be paid, unscheduled redemption, sale, nominal alignment and deposit outgoing. Asset incomings in this  
20 case include business transactions of payment (active), payment (passive), purchase, nominal alignment and deposit incoming.

For asset outgoings, an existing impairment is booked out from the asset in a nominal or unit-based  
25 proportion. An amortization within the context of generating the derived business transaction may be suppressed for an existing impairment.

An asset incoming does not affect an existing impairment. An amortization arising on the basis of the  
30 incremental method is suppressed for an existing impairment.

In this case, transfer postings include the business transactions of deposit transfer, valuation class transfer and capital transfer.

In the case of transfer postings, an existing  
5 impairment in the source asset is transferred to the destination asset in a nominal or unit-based proportion irrespective of the transfer type of the destination asset's asset management method.

If there is an impairment in the source asset  
10 (destination asset), then any waiting amortization is suppressed in the source asset (destination asset). If there is no impairment in the source asset (destination asset), then any waiting amortization is performed in the source asset (destination asset).

15 These statements mean, in particular, that transfer postings can also result in impairments arising on an asset in the category trading.

The following capital measures can incorporate value  
20 adjustments formed and, in particular, impairments: share split, share exchange, capital reduction, capital increase from company means, conversion of issue currency, transfer of young shares to old shares, entry of subscription rights and other capital measures.

25 For the effect of capital measures on assets with an existing impairment, the following needs to be taken into account: if a capital measure were to alter the amortized acquisition value without impairment of an asset, then the amortized acquisition value including  
30 the impairment would need to be aligned in a similar manner. What this specifically means for the capital measures supported by the system is explained below.

A share split and a capital increase from company means are comparable to an incoming and have no influence on an existing impairment.

5 A capital reduction has no effect on an existing impairment.

A share exchange and a transfer of young shares to old shares are comparable to a transfer posting; an existing impairment is thus transferred in a unit based proportion from the source asset (outgoing share to be  
10 exchanged or young share) to the destination asset (incoming share to be exchanged or old share). If there is an impairment in the source asset (destination asset) in this context, then any waiting amortization is suppressed in the source asset (destination asset).

15 If there is no impairment in the source asset (destination asset), then any waiting amortization is performed in the source asset (destination asset).

During conversion of the issue currency, an existing impairment is converted in a similar manner to the rest  
20 of the components of the asset.

When entering subscription rights, any impairment existing on the share is transferred to the subscription right proportionally in a similar manner to the rest of the components.

25 For any other capital measure, the procedure with an existing impairment is similar to the way in which the amortized acquisition value without an impairment would be treated.

30 The following rights can incorporate value adjustments formed and, in particular, impairments: exercise warrant on shares, exercise warrant on interest, exercise warrant on index, exercise warrant on

currency, exercise subscription right, exercise convertible bond, separate warrant bond, exercise puttable bond, exercise callable bond and share exchange.

- 5 The following applies, in principle, for the effect of exercises of right on assets with an existing impairment: if the exercise of a right were to alter the amortized acquisition value without impairment of an asset, then the amortized acquisition value  
10 including the impairment would need to be aligned in a similar manner. What this specifically means for the rights supported by the system is explained below.

Exercising a warrant with physical delivery (on shares  
15 or on interest), exercising a subscription right, exercising a convertible bond and a share exchange are comparable to a transfer posting; an existing impairment is thus transferred from the source asset to the destination asset. If there is an impairment on a  
20 convertible bond, then any waiting amortization is suppressed during the exercise.

Exercising a warrant with a cash settlement (on shares, interest, index or currency) is comparable to an outgoing. An existing impairment is booked out.

- 25 Exercising a puttable or callable bond is comparable to an outgoing (bond is returned to issuer, right is with issuer (puttable) or owner (callable)). An existing impairment is booked out. Any waiting amortization is suppressed for an existing impairment.

- 30 Separating a warrant bond may be regarded as a transfer posting with a source asset (bond cum) and two destination assets (bond ex and warrant). An impairment existing on the warrant bond is transferred completely

to the bond ex, i.e. the warrant has no impairment following separation. This procedure is similar to the amortization component, which is likewise transferred completely to the bond ex. All the remaining components  
5 may be distributed over the two destination assets, specifically in line with the ratio 'bond ex market value/bond cum market value' at the time of separation. If there is an impairment for the warrant bond, then any waiting amortization is suppressed.

10

There may also be means for evaluating the performed or existing impairment. This may be achieved by an asset component for performed impairments, which is available in asset development lists as a start, delta and end  
15 value. The value of this component goes into the amortized acquisition value, which is likewise available as a start, delta and end value in asset development lists.

20 Accepting historical impairments is possible for an additional valuation range within the context of an initialization process. In this case, initial values proposed by the system may be used for the individual asset components or may be used in modified form. A  
25 historical impairment can in that case be set per asset on the 'impairment' component. Upon the asset initialization business transaction generated in a further step, the impairment is then automatically revealed to the appropriate asset in the subledger.

30

The advantages of the inventive method or programs can essentially be seen in that it becomes possible for the first time to examine a multiplicity of objects or

assets in accounting systems for permanent value change on a regular basis and with comparatively little expense. The automated checking allows conspicuous objects to be identified even before a balance sheet  
5 key date, which means that it is possible to react in good time. Possible reactions are, by way of example, performance of depreciations affecting net income in good time, sale or subsequent purchase of the objects in good time or transfer of the object. Since the  
10 consequences of a permanent decrease in value identified for objects too late have potentially surprising and considerable effects on a company which affect net income, the company's net income situation may be identified early.

15

Processors suitable for the execution of a computer program according to an exemplary embodiment of the invention include, by way of example, both general and special purpose microprocessors, and any one or  
20 more processors of any kind of digital computer. Generally, a processor will receive instructions and data from a read-only memory or a random access memory or both. The essential elements of a computer are a processor for executing instructions and one or more  
25 memory devices for storing instructions and data. Generally, a computer will also include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices (storage means) for storing data, e.g., magnetic,  
30 magneto-optical disks, or optical disks. Information carriers suitable for embodying computer program instructions and data include all forms of non-volatile memory, including by way of example semiconductor

memory devices, such as EPROM, EEPROM, and flash memory devices; magnetic disks such as internal hard disks and removable disks; magneto-optical disks; and CD-ROM and DVD-ROM disks. The processor and the memory can be  
5 supplemented by, or incorporated in, ASICs (application-specific integrated circuits).

To provide for interaction with a user, the invention can be implemented on a computer system having a  
10 display device such as a CRT (cathode ray tube) or LCD (liquid crystal display) monitor for displaying information to the user and a keyboard and a pointing device such as a mouse or a trackball by which the user can provide input to the computer. Other kinds of  
15 devices can be used to provide for interaction with a user as well; for example, feedback provided to the user can be any form of sensory feedback, such as visual feedback, auditory feedback, or haptic feedback; and input from the user can be received in any form,  
20 including acoustic, speech, or haptic input.

A further exemplary implementation of the invention is explained in more detail below with reference to  
Figure 1.

25

Figure 1: shows a schematic illustration of a computer system having a program in line with the invention.

30 Referring to FIG. 1, a computer system 101 comprising computer 102 and operating means 103, 104, in accordance with a preferred embodiment of the present invention is illustrated. Those skilled in the art will



appreciate that the method and apparatus of the present invention apply equally to any computer system, regardless of whether the computer system is a complicated multi-user computing apparatus or a single user device such as a personal computer or workstation. Computer 102 suitably comprises a processor 105, main memory 108, a memory controller 106, an auxiliary storage interface 112c, a general input/output interface 112b and a terminal interface 112a, all of which are interconnected via a system bus 113. Note that various modifications, additions, or deletions may be made to computer system 101 illustrated in FIG. 1 within the scope of the present invention such as the addition of cache memory or other peripheral devices. FIG. 1 is presented to simply illustrate some of the salient features of computer system 101.

Processor 105 performs computation and control functions of computer system 101, and comprises a suitable central processing unit (CPU). Processor 105 may comprise a single integrated circuit, such as a microprocessor, or may comprise any suitable number of integrated circuit devices and/or circuit boards working in cooperation to accomplish the functions of a processor. Processor 105 may suitably execute (object-oriented) computer programs within main memory 108.

Auxiliary storage interface 112c allows computer system 101 to store and retrieve information from auxiliary storage devices, such as magnetic disk (e.g., hard disks or floppy diskettes) or optical storage devices (e.g., CD-ROM). One suitable storage device is a direct access storage device (DASD) 107. As shown in FIG. 1, DASD 107 may be a hard disk drive which may read programs and data from a hard disk. It is

important to note that while the present invention has been (and will continue to be) described in the context of a fully functional computer system, those skilled in the art will appreciate that the mechanisms of the present invention are capable of being distributed as a program product in a variety of forms, and that the present invention applies equally regardless of the particular type of signal bearing media to actually carry out the distribution. Further examples of signal bearing media include: recordable type media such as floppy disks and CD ROMS, and transmission type media such as digital and analogous communication links, including wireless communication links.

Memory controller 106, through use of a processor is responsible for moving requested information from main memory 108 and/or through auxiliary storage interface 112c to processor 105. While for the purposes of explanation, memory controller 106 is shown as a separate entity, those skilled in the art understand that, in practice, portions of the function provided by memory controller 106 may actually reside in the circuitry associated with processor 105, main memory 108, and/or auxiliary storage interface 112c.

Terminal interface 112a allows system administrators and computer programmers to communicate with computer system 101, normally through monitor 104, keyboard 103, mouse, trackball and the like or through programmable workstations. Although the system 101 depicted in FIG. 1 contains only a single main processor 105 and a single system bus 113, it should be understood that the present invention applies equally to computer systems having multiple processors and multiple system buses. Similarly, although the system bus 113 of the

preferred embodiment is a typical hardwired, multidrop bus, any connection means that supports directional communication in a computer-related environment could be used.

5 Input/output interface 112b allows computer system 101 via processor 105 to communicate with general input/output means 109, including a net connection 110, for sending and/or receiving data, e.g. for a net connection with one or more further computer systems  
10 111, or for sending or receiving of data to or from other parties. A plurality of computer systems like computer system 101, can be connected via the net connection 110 in the form of a network. In such a case, the network computers 111 can be used as further  
15 input/output means, including the use as further storage locations.

In the preferred embodiment, memory 108 suitably includes an operating system, programs and data, a program 114 comprising one or more programs or program  
20 modules 115, for carrying out the inventive method. Loaded in the main memory are also an asset account 116, an expense account 118 and a reserve account 117, which may be accessed by the programs 115, 114. It goes without saying that the accounts may also be stored in  
25 a data store 107 for access and for editing.

It should be understood that for purposes of this application, in memory 108 is used in its broadest sense, and can include Dynamic Random Access Memory  
30 (DRAM), Static RAM (SRAM), flash memory, cache memory, etc. While not explicitly shown in FIG. 1, memory 108 may be a single type of memory component or may be composed of many different types of memory components.

For example, memory 108 and CPU 105 may be distributed across several different computers that collectively comprise system 101. It should also be understood that programs in memory 108 can include any and all forms of computer programs, including source code, intermediate code, machine code, and any other representation of a computer program.

The operating system provides the basic functionality that controls the computer system 101. Operating system can comprise any suitable operating system, such as IBM's OS/400, OS/2, Microsoft's Windows, Java and the various flavours of UNIX. The database 117 provides the mechanism for persistently storing object data in the computer system 101, and can be any suitable, preferably relational database such as those available from IBM, Oracle or Microsoft.

Those skilled in the art will appreciate that more than one of the mentioned processors may work in parallel in a computer system.

Computer system 101 may be used to carry out the inventive method and its embodiments, as described by way of non-limiting example below.

The program 114 in the example is a piece of accounting software, having one (or more) module(s) 115 for carrying out the inventive method. The program 114 manages the asset account 116, in which an object A having a book value U has been entered. The module 115 first reads the book value of A and secondly, at a first time 1, a market price Y(1) in line with a value V for the object A which is smaller than U. Next, a

reserve is formed in the reserve account 117 in line with the intermediate variable  $U-V$ , and is offset in the asset account 116. In addition, an impairment price  $Z(1)$  is formed which may be equal to  $Y(1)$  but which may also differ from  $Y(1)$ . The module 115 automatically and regularly monitors the prices of the objects and accordingly reads a market price  $Y(2)$  with the value  $W$  of the object  $A$ , where  $W < V$ , at a second time 2. The value of  $A$  has thus decreased by the further sum  $V-W$ . Accordingly, a further provision  $V-W$  is formed in the reserve account 117 and is offset in the asset account 116. An impairment price  $Z(2)$  is also formed again. The module 115 automatically checks at regular intervals, at different times  $t$ , whether the value of  $Z(t)$  satisfies a preset rule  $R$ . The rule  $R$  may state that if the impairment price  $Z(t)$  is below a preset value  $X$ , a warning 119 is output on the screen 104. In that case, automatically or following confirmation by a user, an impairment is formed by first calculating an impairment value  $I$  using the impairment price  $Z(t)$ , then balancing the reserve account 117 with the asset account 116 (entry with sum  $U-W$ ) and finally entering the value loss  $U-I$  into the expense account 118 which affects net income.

25

Modifications and adaptations of the present invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. The foregoing description of an implementation of the invention has been presented for purposes of illustration and description. It is not exhaustive and does not limit the invention to the precise form disclosed. Modifications and

variations are possible in light of the above teachings or may be acquired from the practicing of the invention. For example, the described implementation includes software, but systems and methods consistent  
5 with the present invention may be implemented as a combination of hardware and software or in hardware alone. Additionally, although aspects of the present invention are described for being stored in memory, one skilled in the art will appreciate that these aspects  
10 can also be stored on other types of computer-readable media, such as secondary storage devices, for example, hard disks, floppy disks, or CD-ROM; the Internet or other propagation medium; or other forms of RAM or ROM.

15 Computer programs based on the written description and flow charts of this invention are within the skill of an experienced developer. The various programs or program modules can be created using any of the techniques known to one skilled in the art or can be  
20 designed in connection with existing software. For example, programs or program modules can be designed in or by means of Java, C++, HTML, XML, or HTML with included Java applets or in SAP R/3 or ABAP. One or more of such modules can be integrated in existing e-  
25 mail or browser software.

While illustrative embodiments of the invention have been described herein, the present invention is not limited to the various preferred embodiments described  
30 herein, but includes any and all embodiments having equivalent elements, modifications, omissions, combinations (e.g., of aspects across various embodiments), adaptations and/or alterations as would

be appreciated by those in the art based on the present disclosure. The limitations in the claims are to be interpreted broadly based on the language employed in the claims and not limited to examples described in the present specification or during the prosecution of the application, which examples are to be construed as non-exclusive. For example, in the present disclosure, the term "preferably" is non-exclusive and means "preferably, but not limited to." Means-plus-function or step-plus-function limitations will only be employed where for a specific claim limitation all of the following conditions are present in that limitation: a) "means for" or "step for" is expressly recited; b) a corresponding function is expressly recited; and c) structure, material or acts that support that structure are not recited.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the claims.

The patent claims submitted with the application are wording proposals without prejudice for attaining extended patent protection. The applicant reserves the right to claim further combinations of features previously disclosed only in the description or any other combinations of features disclosed in the description. Expressions in brackets in the claims do not represent limiting features.

Back references used in subclaims point to the further development of the subject matter of the main claims; they are not to be understood as dispensing with the attainment of independent, objective protection for the combination of features in the subclaims containing a  
5 back reference.

It will be noted that when features are linked by "or", this "or" is respectively to be understood firstly as  
10 being a mathematical "or" and secondly as an "or" which excludes the respective other possibility.

It will also be pointed out that the statements relating to all known arrangements which do not refer  
15 to particular printed documents are known primarily to the applicant or inventor, which means that the applicant or inventor reserves the right to protect them provided that they are not also known to the public.

20

Explanation of business terms

Asset:

An asset is an evaluatable unit, for example a loan in  
25 a valuation range or a security in a deposit and a valuation range.

Asset component:

The values of an asset are divided into asset  
30 components (e.g. acquisition value, book value). Each asset component carries a value in the asset currency and in the valuation currency.



Acquisition value:

Asset component which contains the purchase value of the asset and the costs incurred for the incomings.

5 Amortization:

The amortization distributes an existing premium or discount over the retention period. Amortization is also understood to mean the asset component which contains the results of amortizations performed.

10

Amortized acquisition value:

Asset component which contains the sum comprising acquisition value, amortization and impairment.

15 Book value:

Asset component which contains the amortized acquisition value and the results of all valuations performed (e.g. valuation in the subsection, valuation in the foreign exchange).

20

Asset currency:

Any asset component carries, inter alia, a value in asset currency. The asset currency is the currency of issue for securities, for example.

25

Valuation currency:

Any asset component carries, inter alia, a value in valuation currency. The valuation currency is the currency in which a company balances accounts in a

30 valuation range.

Asset management method:

The asset management method stipulates what steps are taken when valuing an asset or when ascertaining the derived business transactions for an asset and in what  
5 order the steps need to be performed.

Valuation in the subsection or price valuation:

Valuation in the subsection or price valuation is understood to mean the result of the comparison between  
10 market value and book value for an asset taking into account particular valuation rules. Subsection valuation is also understood to mean the asset component which contains the results of price valuations performed.

15

Valuation in the foreign exchange or foreign currency valuation:

Valuation in the foreign exchange or foreign currency valuation is understood to mean the result of the  
20 comparison between the foreign currency market price and the foreign currency book price of an asset taking into account particular valuation rules. Foreign exchange valuation is also understood to mean the asset component which contains the results of foreign  
25 currency valuations performed.

Valuation range:

Valuation ranges are used to allow the assets to be allocated to various account rendering specifications  
30 (e.g. HGB, IAS, US-GAAP).

Market price:

Price of a security at a marketplace

Market value:

The market value of an asset is the market price multiplied by the quantity available (e.g. number of  
5 shares).

Impairment price:

Price at which an impairment is to be performed

10 Impairment value:

The impairment value of an asset is the impairment price multiplied by the quantity available (e.g. number of shares).

15 Derived business transaction:

When a business transaction is performed for an asset (e.g. incoming, outgoing, transfer posting), a derived business transaction is generated for it which, by way of example, contains the net income from prices which  
20 results from the business transaction.

**Patent Claims**

1. Method for automatically evaluating value changes for balance sheet objects, the method comprising:  
5 automatically determining a book value for each object in an accounting system; automatically determining a market value for each object;  
10 automatically forming an intermediate variable from the book value and the market value;  
automatically testing the intermediate variable to determine whether it satisfies one or more  
15 presetable conditions; and  
automatically performing one or more actions depending upon the manner and/or degree to which one or more of the presetable conditions are  
20 satisfied.
2. Method according to Claim 1, where the objects are securities.
- 25 3. Method according to Claim 1 or 2, where the market value is the price of the object or of the security multiplied by the number of units available.
- 30 4. Method according to one or more of Claims 1 to 3, where the intermediate variable is a difference between the book value and the market value.

5. Method according to one or more of Claims 1 to 4, where the or each presettable condition is selected from a list comprising:
- 5 - disparity between the intermediate variable and an average value for the intermediate variable, ascertained over a settable period of time, by a presettable amount;
  - 10 - disparity between the intermediate variable and a minimum disparity for the intermediate variable, ascertained over a settable period of time, by a presettable amount;
  - 15 - disparity between the intermediate variable and a maximum disparity for the intermediate variable, ascertained over a settable period of time, by a presettable amount;
  - presettable number of disparities between the intermediate variable and a presettable auxiliary variable in a presettable period of time.
- 20 6. Method according to one or more of claims 1 to 5, wherein the or each action is selected from a list comprising:
- 25 - calculating an impairment price;
  - sending a message to a person;
  - sending a list containing proposals for action to a person;
  - presenting advice for a degree to which the or each of the conditions are satisfied on a display means, particularly a screen or a print-out;
  - 30 - performing a value adjustment for the or each object in the accounting system.

7. Method for checking a digital document according to Claim 6, where the impairment price is the market price.
- 5 8. Method according to Claim 6, where the impairment price is a market price increased or reduced by a presettable value.
9. Computer system for performing a method according to one or more of the preceding claims, comprising:
- 10 - means for storing data;  
- means for storing programs;  
- means for executing programs;
- 15 - program-code means for performing a method according to one or more of Claims 1 to 8.
10. Computer program comprising program-code means for performing all of the steps in any method according to any combination of claims 1 to 8 when the program is executed on a computer.
- 20
11. Computer-program product comprising program-code means which are stored in a computer-readable data storage medium and are suitable for performing a method according to any combination of Claims 1 to 8 when they are executed on a computer.
- 25

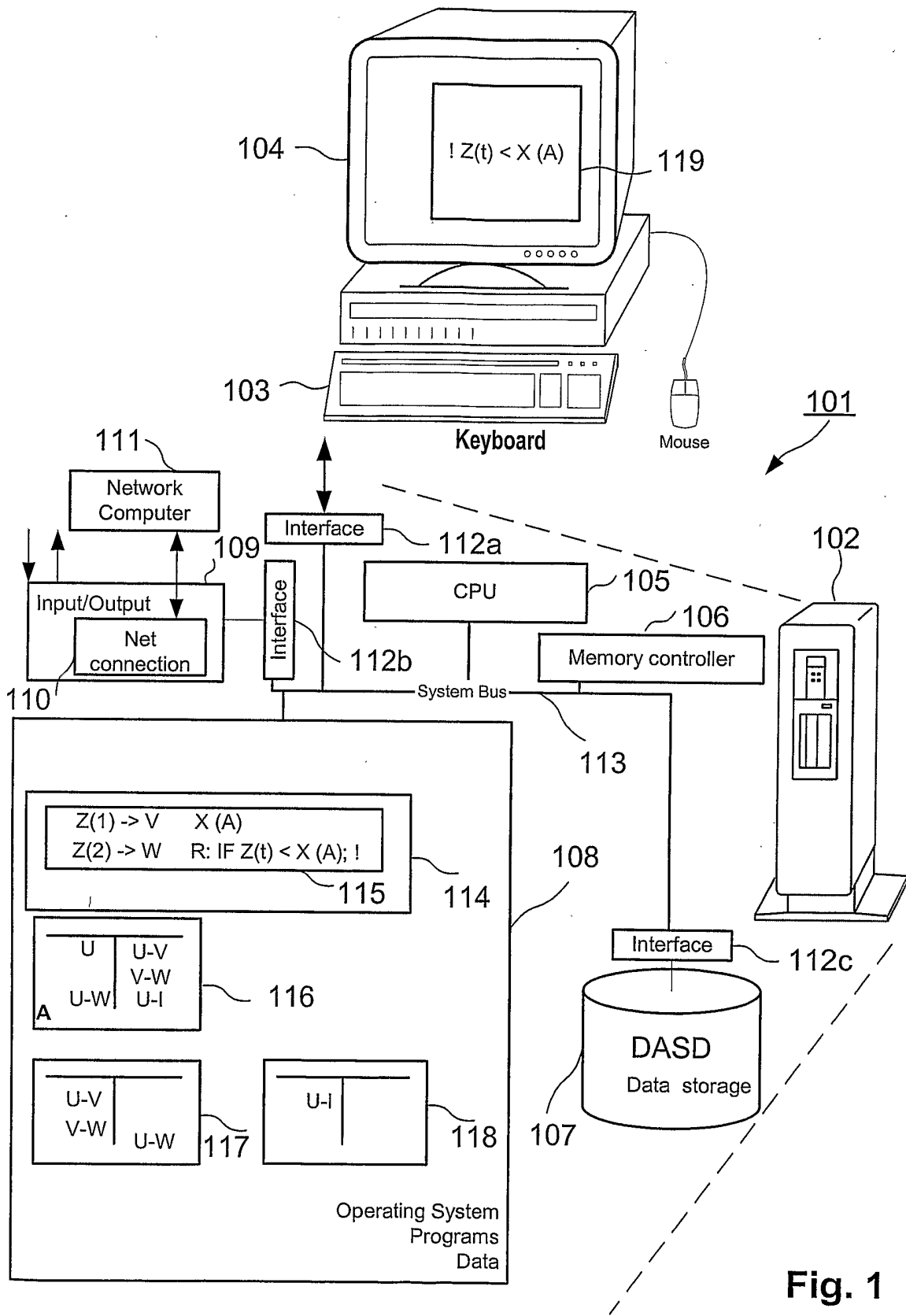


Fig. 1