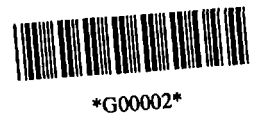
# SUPPLY CHAIN MANAGEMENT SUPPORTING SYSTEM, SUPPLY CHAIN MANAGEMENT METHOD, AND RECORDING MEDIUM ON WHICH INFORMATION PROCESSING PROGRAM OPERATED BY COMPUTER IS RECORDED




## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to an information processing technique used to support supply chain management, and more particularly relates to a supply chain management supporting technique which is useful under business conditions in which large quantities of merchandise of various types are produced, business conditions in which the merchandise that is handled fluctuates in a short cycle, business conditions in which the volatility of demand is high, and business conditions involving merchandise of a highly thematic or suppositional nature.

### 2. Description of the Related Art

The path (planning, development, design, production, shipping, marketing and the like) over which merchandise travels until it reaches the hands of the consumer is called the supply chain, and the optimal control of the supply chain in accordance with demand is referred to as supply chain management (SCM).

In the past, numerous techniques and computer systems have been proposed and developed in connection with SCM; most





of these systems are classified on the basis of concepts known as the "push type" and "pull type".

The basic nature of "push type" systems is initiative on the part of the producer, in which production plans are formed on the basis of advance prospects of demand, procurement of materials and production are performed prior to the generation of an actual demand, so that a warehoused stock is ensured, and this warehoused stock is distributed in the stage in which an actual demand is generated.

On the other hand, the basis of "pull type" systems is production in accordance with demand from the consumer; here, for example, known methods include BTO (build to order) in which production is initiated after receiving orders from consumers, CRP (continuous replenishment program) in which the amount of stock that has been sold is replenished, and the like.

## SUMMARY OF THE INVENTION

In recent years, pull type SCM has attracted much attention; however, it cannot be said that pull type SCM such as BTO or CRP are always suitable for used under business conditions in which large quantities of merchandise of various types are produced, business conditions in which merchandise that is handled fluctuates in a short cycle, business conditions in which the volatility of demand is high, or business conditions involving merchandise of a highly thematic

or suppositional nature, as in the apparel industry for example.

For instance, in the case of such business conditions, the consumer usually looks at existing products, compares several brands or the like, and then decides on a purchase. Accordingly, the marketing side must itself make a positive effort to offer goods that will be desired by the consumer; it may be said that BTO, in which the consumer places an order after determining the specifications beforehand, is an unfamiliar system to begin with. Furthermore, because of characteristics such as numerous product types, short product cycle, and high volatility and thematic nature of the merchandise, numerous materials and the like must be guaranteed beforehand in order to accomplish BTO, and such material warehousing ultimately leads to a sizeable holding risk.

Furthermore, in the case of CRP, this system can function effectively in cases where the product cycle is long, so that the merchandise assortment does not fluctuate. In cases where the cycle changes, i.e., in cases where the merchandise assortment changes, it is not realistic to predict replenishment quantities for merchandise of the next cycle on the basis of sales data for the previous cycle. This means that in the timing at which the cycle changes, sufficient warehoused stock cannot be guaranteed by CRP alone and must be ensured by means of prospective production.

Thus, under the abovementioned business conditions, it is difficult to construct an SCM system using pull type SCM alone; the role played by push type prospective production remains large.

Here, in the case of push type prospective production, it is extremely important to predict demand, and to make an appropriate determination of product types and production quantities. However, no technique that makes it possible to predict demand with sufficient precision has yet been established, and the difficulty of making such a prediction is especially increased in cases where the lead time in the production phase and the like exceeds a given time.

In actuality, therefore, product types and production quantities are usually determined on the basis of the experience and the like of the parties involved, and the precision of such forecasting depends in large part on the skill of the individual making such predictions. Accordingly, there are variations among the individuals involved, with excess warehousing or stock insufficiencies occurring depending on the merchandise involved. Such variation is a major factor that hinders the stability of SCM.

The inventor of the present application came to the conclusion that the reason for the occurrence of such variation according to the skill of the individual involved is attributable to the fact that there are no objective criteria for determining product types and production quantities. As a

result of serious consideration of this problem, the inventor noted that merchandise that has been produced (warehoused stock) is displayed to the consumer with retail shops as the opening, and devised the novel framework of determining product types and production quantities using the assortment of merchandise in retail shops as a criterion.

The present invention is based on such a concept; it is an object of the present invention to provide an SCM supporting system which reduces the degree of dependence on the experience and skill of the parties involved, and which makes it possible to construct a stable supply chain.

The SCM supporting system of the present invention is a supply chain management (hereafter referred to as "SCM") supporting system for supply chains which are constructed so that these chains include at least two of the following phases: product planning phase, product development phase, production preparation (design) phase, production phase, shipping phase, and marketing phase. This SCM supporting system comprises initial setting means for determining the quantities of merchandise disposed in a retail shop in accordance with the capacity of this retail shop, and for initially setting merchandise control information for this retail shop so that such quantities of merchandise are included; updating means for updating the merchandise control information by adding or correcting merchandise data for merchandise disposed in a retail shop to the merchandise

control information set for this retail shop; and input-output means for outputting reference information in specified phases on the basis of the merchandise control information set for a retail shop, and/or receiving information used to update the merchandise control information.

Preferably, the initial setting means initially set merchandise control information with this information divided into specified time period units, and the updating means are constructed so that the merchandise control information can be updated in the units obtained by this division.

In this case, it is desirable that the initial setting means determine groups so that one set of merchandise control information or a plurality of divided sets of merchandise control information that are continuous in the time direction are contained in each group, and that the updating means be constructed so that the merchandise control information can be managed in respective group units.

Furthermore, in cases where the updating means correct the merchandise control information in the divided units, it is desirable that the correction content be controlled in accordance with the time intervals of the divided periods.

Furthermore, in cases where the input-output means output reference information on the basis of merchandise control information in divided units, it is desirable that the phase that is the object of output be selected in accordance with the time intervals of the divided periods.

Furthermore, it is desirable that the abovementioned specified time period units be weekly units.

Furthermore, the updating means are preferably constructed so that the merchandise control information can be updated by adding or correcting in stages the attribute values of various attributes that constitute the merchandise data.

Furthermore, the initial setting means preferably determine the quantities of merchandise that are disposed in each merchandise disposition space of the abovementioned retail shop in accordance with the capacity of this retail shop, and initially set merchandise control information for this retail shop so that such merchandise quantities for each merchandise disposition space are included in this merchandise control information.

Preferably, furthermore, the initial setting means initially set merchandise control information in accordance with the capacity of a model retail shop of a specified scale, and the updating means are constructed so that the merchandise control information for the abovementioned model retail shop is updated. In this case, merchandise control information for a individual retail shop is set on the basis of merchandise control information for a model retail shop selected in accordance with the scale of this individual retail shop.

The supply chain management method of the present invention is a management method for supply chains which are constructed so that these chains include at least two of the

following phases: product planning phase, product development phase, production preparation (design) phase, production phase, shipping phase, and marketing phase. This supply chain management method comprises an initial setting step of determining the quantities of merchandise disposed in a retail shop in accordance with the capacity of this retail shop, and initially setting merchandise control information for this retail shop so that such quantities of merchandise are included; an updating step of updating the merchandise control information by adding or correcting merchandise data for merchandise disposed in a retail shop to the merchandise control information set for this retail shop; and an input-output step of outputting reference information in specified phases on the basis of the merchandise control information set for a retail shops, and/or receiving information used to update the merchandise control information.

Preferably, in the initial setting step, merchandise control information is initially set with this information divided into specified time period units, and in the updating step, the merchandise control information is updated in the units obtained by this division.

In this case, it is desirable that the initial setting step include a step in which groups are determined so that one set of merchandise control information or a plurality of divided sets of merchandise control information that are continuous in the time direction are contained in each group,

and that the updating step be constructed so that the merchandise control information is managed in respective group units.

Furthermore, in cases where merchandise information is corrected in the abovementioned divided units in the updating step, it is desirable that the correction content be controlled in accordance with the time intervals of the divided time periods.

Furthermore, in cases where reference information is output on the basis of merchandise control information in divided units in the input-output step, it is desirable that the phase that is the object of output be selected in accordance with the time intervals of the divided time periods.

Furthermore, in the initial setting step, it is desirable that the merchandise control information be initially set with this information divided into weekly units.

Preferably, furthermore, the merchandise control information is updated in the updating step by the addition or correction in stages of the attribute values of various attributes that constitute the merchandise data.

Preferably, furthermore, in the initial setting step, the quantities of merchandise that are disposed in each merchandise disposition space of the abovementioned retail shop are determined in accordance with the capacity of this retail shop, and merchandise control information for this retail shop is initially set so that such merchandise

quantities for each merchandise disposition space are included in this merchandise control information.

Preferably, furthermore, merchandise control information is initially set in the initial setting step in accordance with the capacity of a model retail shop of a specified scale, and the updating step is constructed so that merchandise control information for the abovementioned model retail shop is updated; furthermore, a step is provided in which merchandise control information for a retail shop is set on the basis of merchandise control information for such a model retail shop selected in accordance with the scale of this retail shop.

In the SCM supporting system and supply chain management method of the present invention, it is desirable that the abovementioned merchandise data comprise at least some of the following as attributes: namely, theme, product type (item), material, color and size.

The program of the present invention is characterized in that this program causes the respective steps of the supply chain management method of the present invention to be performed by a computer. The program of the present invention can be installed or loaded into a computer via various types of recording media such as CD-ROM, magnetic disks, semiconductor memories or the like.

## BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a diagram which is used to illustrate an SCM supporting system constituting a first embodiment of the present invention;

Fig. 2 is a block diagram which is used to illustrate the construction of the SCM supporting system constituting a first embodiment of the present invention;

Fig. 3 is a diagram which is used to illustrate the data structure in the MD map memory means;

Fig. 4 is a diagram which is used to illustrate the data structure of a unit MD map;

Fig. 5 is a diagram which is used to illustrate various attribute maps;

Fig. 6 is a flow chart which shows the flow of the MD map initial setting processing;

Fig. 7 is a diagram which is used to illustrate the capacity of a retail shop and the like;

Fig. 8 is a flow chart which shows the flow of the theme setting processing;

Fig. 9 is a flow chart which shows the flow of the item setting processing;

Fig. 10 is a flow chart which shows the flow of the material setting processing;

Fig. 11 is a diagram which is used to illustrate a construction that controls the correction content of the MD map on the basis of time intervals;

Fig. 12 is a diagram which is used to illustrate a construction that controls the phase for which reference information is output on the basis of time intervals; and

Fig. 13 is a diagram which is used to illustrate the relationship of time intervals, MD map correction content and output destination phase.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

(First Embodiment)

Embodiments of the present invention will be described below with reference to the attached figures. Fig. 1 is a diagram which is used to illustrate the role of an information processing system constituting a first embodiment of the present invention.

As is shown in Fig. 1, the information processing system 1 of the present invention provides reference information for the respective phases that constitute a supply chain, e. g., product planning phase, product development phase, production preparation (design) phase, production phase, shipping phase, marketing phase and the like, or refers to information in the respective phases, and thus acts to support SCM in connection with the respective phases.

Fig. 2 is a block diagram which shows the construction of the information processing system 1. As is shown in Fig. 2, the information processing system comprises MD map memory means 10, attribute map memory means 11, IF (interface) means

12, control means 13 and the like. Furthermore, the information processing system 1 is construction so that communication is possible with the respective systems involved in the supply chain, e. g., product planning system, product development system, production preparation (design) system, production system, shipping system, marketing system and the like via a communications network (LAN, internet, dedicated line, packet communications network or any combination of these, including both communication by wire and wireless communication).

It is sufficient if the information processing system 1 comprises the respective means described above; in physical terms, this system may be either a dedicated system or an all-purpose information processing device. For example, the information processing system of the present invention can be realized in an information processing device of common construction comprising a processing device, input means, memory means and output means by operating software that regulates the respective processing operations performed in the information processing method of the present invention. Furthermore, the abovementioned dedicated system or information processing device may be constructed by a single computer, or may be constructed by a plurality of computers that are dispersed on a network.

In the present invention, the types of merchandise that are handled can be determined in accordance with the design of

the system; in the present embodiment, a case in which articles of clothing are handled will be described as an example.

The MD map memory means 10 store merchandise control information (hereafter referred to as an "MD map" (merchandising map)) that specifies the merchandise assortment in each retail shop in correspondence with each retail shop (see Fig. 3 (a)).

The retail shops that correspond to the MD map can be set as model retail shops arranged by scale, such as large scale, medium scale and small scale. In this case, concrete MD map for each retail shop is set on the basis of the MD map for a model retail shop selected in accordance with the scale of this retail shop. Subsequently, the MD map memory means 10 stores MD maps for respective model retail shops.

As is shown in Fig. 3 (a), each MD map is set for a specified time period (one year in the example shown in the figure), and is divided into specified time period units, and is controlled with that units. The specified time period units may be set in accordance with merchandise cycles; for example, in cases where articles of clothing are the object of management, the time period units might conceivably be set as weekly units. Below, MD map that is divided into specified time period units will be referred to as unit MD map.

Furthermore, the concept of an MD cycle may also be introduced (see Fig. 3 (b)). The period of this MD cycle is

set on the basis of (for example) sales or marketing trends, seasons and the like so that the cycle includes one unit MD map or a plurality of unit MD maps that are continuous in the time direction. The period of this MD cycle can be freely set in accordance with merchandise characteristics and the like, and may be different for each model retail shop or MD cycle.

The unit MD map contains merchandise quantities and merchandise data for the merchandise disposed in the model retail shop in the abovementioned divided periods as information that specifies the merchandise assortments in the model retail shop. However, since the merchandise quantities are determined in accordance with the capacities of the model retail shop (as will be described later), unit MD maps that are assigned to the same model retail shop will as a rule contain the same merchandise quantities. Accordingly, a data structure in which merchandise quantities are caused to correspond to model retail shops may also be used.

In cases where a model retail shop has a plurality of merchandise disposition spaces, unit MD map is constructed so that the merchandise quantities and merchandise data are caused to correspond to the respective merchandise disposition spaces of the model retail shop (see Fig. 4 (a)). For example, the merchandise disposition spaces are shop furnishing units such as racks or the like; a plurality of such shop furnishing units may be combined and set as a single merchandise disposition space. In the example shown in Fig. 4

(a), the system is constructed so that merchandise quantities and merchandise data correspond to each of five merchandise disposition spaces, i. e., shop furnishing units 1 through 3, shop furnishing units 4 and 5, shop furnishing unit 6, shop furnishing unit 7 and shop furnishing unit 8.

The merchandise data is information that is used to specify merchandise, and is constructed from a plurality of attributes. For example, conceivable attributes of the merchandise data for articles of clothing include theme, product type (item), material, color, size and the like. Among these, theme attributes are attributes that express the direction and concept of product development, e. g., such attributes adopt attribute values such as ON (formal) OFF (casual), BRIDAL and the like. Furthermore, item attributes are attributes that express the type of clothing, e. g., such attributes adopt attribute values such as pullover (PO), jacket (JK) and the like. In cases where merchandise of a highly thematic nature such as clothing and sundries or the like are the object of the system, it is desirable that at least the theme be provided as an attribute.

Attributes such as theme and the like can be constructed in a hierarchical manner in accordance with the timing used to determine the attribute values. The term "hierarchy" refers to a data structure in which a plurality of attributes of subordinate hierarchical ranking correspond to each attribute of superior hierarchical ranking. For example, in cases where

specifications are determined so that [i] the theme is determined using a first timing, [ii] the material is determined using a second timing following the first timing, and [iii] color and size are determined using a third timing following the second timing, a data structure is produced in which a plurality of materials correspond to one theme, and a plurality of colors and sizes correspond to one material.

Furthermore, the item attributes are controlled in accordance with a data structure in which the theme attributes are given a superior hierarchical ranking in the same manner as in the case of the material attributes, and a plurality of items correspond to one theme. Accordingly, as in the case of the material attributes, these item attributes are as a rule determined following the first timing. However, since the item attribute values are determined with the item ratios considered from the standpoint of a profit indicator (as will be described later), it would also be possible to construct the system so that the item attributes are determined prior to the first timing.

In cases where the attributes are determined as described above, the data structures of the unit MD map are as shown in Figs. 4 (a) through 4 (c) (in conceptual terms). The matrix cell (shaded portion) shown in Fig. 4 (b) corresponds to the so-called "type" in articles of clothing, while the matrix cell (shaded portion) shown in Fig. 4 (c) corresponds to the so-called "SKU (stock keeping unit)" in articles of clothing.

In the present embodiment, as will be described later, the fact that attribute values are determined using different timings so that the MD map (unit MD map) is completed in a step by step manner is one of the characterizing features of the system. The data structure shown for example in Fig. 4 is one data structure that is suitable for realizing such a characterizing feature.

Furthermore, a conventional data base technique such as a relational data base or the like can be used for the control and retrieval of data in the MD map memory means 10.

The attribute map memory means 11 stores attribute maps for specified attributes of the merchandise data in correspondence with the MD maps of the respective model retail shops. These attribute maps express trends in attributes in the time direction, and are constructed so that the attribute values are caused to correspond to the time axis.

In cases where MD map is constructed for each merchandise disposition space, the attribute maps are similarly constructed so that these maps are caused to correspond to the respective merchandise disposition spaces. Furthermore, in cases where there are attributes with a superior hierarchical ranking, the attribute maps are restricted by the attribute maps of such superior attributes, and are constructed so that these maps are divided according to each attribute value of such superior attributes. Examples of these respective attribute maps are shown in Fig. 5. As is clear from this

figure, the material attribute map is constructed so that this map is divided for each of the attribute values of the theme attribute, which is superior attribute in terms of hierarchical ranking.

the IF means 12 are constructed so that information can be input and output with respect to the various systems and the information processing means 100 via a communications network, in addition to input device such as a keyboard or the like and output device such as a display, printer or the like. For example, the IF means 12 comprise a communications module such as a PPP driver, TCP/IP driver or the like.

The information process means 100 are constructed so that these means receive input from the user utilizing this information processing system, and output information to this user. An ordinary personal computer or portable terminal owned by the user can be used as the information processing means 100. Furthermore, the information processing means 100 may be constructed so that these means form a part of the present information processing system 1, or may be constructed as an external information processing device.

The control means 13 receive various types of input from the user via the information processing means 100 and respective systems, and perform MD map initial setting processing, MD map updating processing (theme setting processing, item setting processing, material setting processing, color/size setting processing and the like), MD

map checking processing (balance checking processing, profit indicator checking processing and the like), reference information input-output processing and the like. In Fig. 2, the abovementioned respective types of processing that are performed in the control means 13 are shown as respective functional means.

The control means 13 output screen information for menu displays to the user who has accessed this information processing system 1. The user can select various types of processing on the basis of such screen information, and can send requests for the execution of this processing to the information processing system 1.

The respective types of processing shown in Fig. 2 will be described below. Furthermore, the respective steps can be performed in an arbitrarily altered order as long as this causes no conflict in the content of the processing.

(MD Map Initial Setting Processing: Fig. 6)

The "MD map initial setting processing" refers to processing which determines the quantities of merchandise disposed in a retail shop in accordance with the capacities of this retail shop, and which initially sets the MD map for this retail shop so that such merchandise quantities are included in these MD map. In the present embodiment, the MD map initial setting processing performs the initial setting of MD maps for respective model retail shops.

First, the control means 13 ensure the availability of fixed-time-period memory regions used to store MD maps in the MD map memory means 10 for the respective model retail shops. The MD map memory regions are divided on the basis of predetermined time period units (e. g., weekly units) so that unit MD map memory regions are ensured (S100). Here, the time period units can be set by the user, and may be set individually for each model retail shop or MD map.

As a result, the MD map memory means 10 are constructed as shown in Fig. 3 (a), and the control means 13 can access (control) the MD map for each model retail shop in such divided time period units (i. e., by each individual unit MD map).

Next, on the basis of input from the user, the control means 13 determine the MD cycle for each MD map so that one or a plurality of unit MD maps that are continuous in the time direction are included in this MD cycle (S101). Several MD cycles may be determined for one MD map, and the time periods may be different for each MD cycle.

As a result, the MD map memory means 10 are constructed as shown in Fig. 3 (b), and the control means 13 can access (control) the MD map for the each model retail shop by each individual MD cycle.

Next, for each model retail shop, the control means 13 receive the capacity of this model retail shop from the outside (S102).

The "capacity" of a retail shop is information that specifies the volume of merchandise disposition space in the retail shop. For example, in the case of a retail shop that handles articles of clothing, the merchandise disposition space is specified in terms of shop furnishing units; accordingly, the number of shop furnishing units and the size of the respective shop furnishing units correspond to the capacity. Fig. 7 (a) shows an example of this capacity. In this example, the size of the shop furnishing units is specified by the length of these shop furnishing units in the horizontal direction.

The capacity of a model retail shop may be input into the present information processing system 1 by the user, or may be acquired from an outside data base, e. g., a retail shop design data base or the like (not shown in the figures). In cases where the user inputs this capacity, the input-output means of the information processing means 100 or the like are constructed so that (for example) an input screen is displayed on a display device, and the user is caused to input the necessary information by means of a conversational format.

Next, on the basis of a predetermined merchandise disposition pitch, the control means 13 calculate the quantity of merchandise that can be disposed in the abovementioned capacity that has been received (S103). Here, the merchandise disposition pitch can be set by the user, and can be set individually for each model retail shop, and further for each

merchandise disposition space. Furthermore, the system may also be constructed so that a plurality of merchandise disposition spaces are formed into a group, and the quantity of merchandise is calculated with this group taken as a single merchandise disposition space.

For instance, Fig. 7 (b) shows an example of the calculation of the quantity of merchandise in a case where a capacity such as that shown in Fig. 7 (a) is received. In this example, shop furnishing units 1 through 3 and shop furnishing units 4 and 5 are respectively formed into groups. Furthermore, since the size of the shop furnishing units is specified by the horizontal length of these shop furnishing units, the merchandise disposition pitch is also set as the horizontal pitch. As is seen from this figure, the quantities of merchandise that can be disposed in the respective merchandise disposition spaces can be determined by respective INTEGER values of (sum of horizontal lengths with one group/horizontal pitch of merchandise disposition).

Next, the control means 13 refer to the MD map memory means 10, and perform initial setting of the MD maps by storing the abovementioned determined merchandise quantities in the MD map (respective unit MD map) for each model retail shop, with these merchandise quantities being caused to correspond to the respective merchandise disposition spaces (S104).

Thus, in the present embodiment, among the information that constitutes the MD map, merchandise quantities are determined in the initial setting stage in accordance with the capacities of the model retail shop, while merchandise data is not determined in the initial setting stage, but is rather determined in stages in the MD map updating processing (described later).

(MD Map Updating Processing)

The "MD map updating processing" is processing that updates the MD map that are set for each retail shop by adding or correcting merchandise data for the merchandise that is disposed in this retail shop. In the present embodiment, the MD map updating processing updates MD maps for respective model retail shops.

Here, the "addition of merchandise data" refers to the determination of the attribute values of attributes that constitute the merchandise data, and the storage of these attribute values in the MD map. Furthermore, the "correction of merchandise data" refers to the alteration of attribute values that are already stored in the MD map.

In the MD map updating processing, the attribute values of respective attributes are determined in stages (step by step) using a plurality of different timings. In the present embodiment, the system is constructed so that the attribute values are determined in stages in the order "theme, item,

material, color/size" using arbitrary timings from the product planning phase to the production phase in the supply chain. Since the present embodiment deals with articles of clothing, which are highly thematic, the timing (order) in which the attribute values are determined is set so that the updating of the MD map is theme-driven.

Below, the MD map updating process will be described for each attribute. Furthermore, when the respective processing operations described below are performed, it is assumed that the MD map that is the object of updating is selected by the user.

(MD Map Updating Processing: Theme Setting Processing: Fig. 8)

In cases where the theme setting is selected by the user, the control means 13 display an input screen for the theme attribute map via the image processing means 100 or the like (S200). In this case, the control means 13 refer to the MD map memory means 10, ascertain how the merchandise disposition spaces, MD cycles and the like have been set in the MD map that is the object of updating, and set the input screen so that one or more theme attribute values are received for each merchandise disposition space. Furthermore, the MD cycles are displayed so that the user can refer to these cycles when the user inputs information.

On the basis of this input screen, the user can assign themes to each merchandise disposition space on the time axis while considering the relationships of themes to merchandise disposition spaces and MD cycles (market trends, sales trends and the like). In this case, furthermore, it is not absolutely necessary to assign themes that are closed within the MD cycles; themes may also be assigned so that these themes extend across a plurality of MD cycles.

On the basis of the input from the user, the control means 13 determine the theme attribute map, and store this map in the attribute map memory means 11 in correspondence with the MD map that is the object of updating (S201).

Next, the control means 13 match the time axis of the MD map that is the object of updating with the time axes of the abovementioned determined theme attribute map (S202). Then, for each unit MD map contained in the MD map that is the object of updating, theme attribute values that are set on the same time axis as these unit MD maps in the theme attribute map are selected for each merchandise disposition space (S203). Furthermore, the respective selected theme attribute values are added to the respective unit MD maps as attribute values of merchandise data for each merchandise disposition space (S204).

Furthermore, matching with the time axis of the theme attribute map is obtained for the material attribute map, so

that the theme attribute values set in the theme attribute map are reflected in the material attribute map (S205).

(MD Map Updating Processing: Item Setting Processing: Fig. 9)

In case where the item setting is selected by the user, the control means 13 receive item ratios for each MD cycle from the user via the information processing means 100 or the like (S300). The item ratios can be specified by the proportions of the respective item attribute values, e. g., (PO = 30%, JK = 20%, ...).

Here, instead of receiving item ratios for each MD cycle, it would also be possible to construct the system so that (for example) the item ratios for the next MD cycle are automatically set using the item ratios used in the previous MD cycle as a reference.

Furthermore, it would also be possible to construct the system so that item ratios for each MD cycle are calculated on the basis of profit target values such as CFROI (cash flow return on investment) or the like, past marketing results, business plans or the like, and to provide these values to the user as default values or reference values.

Furthermore, it would also be possible to construct the system so that a check is made on the basis of the received item ratios and mean profit per item as to whether or not the

profit target values can be achieved in a case where these item ratios are used.

Next, the control means 13 refer to the MD map that is the object of updating and acquire the merchandise quantities that are stored in each merchandise disposition space; the control means 13 then multiply these values by item ratios for the respective MD cycles, thus determining combination of item attribute values and merchandise quantities (for example, {(PO, 60), (JK, 40), ...}) for each merchandise disposition space and each MD cycle (S301).

Then, to each of the unit MD maps of the MD map that is the object of updating, the combination of item attribute values and merchandise quantities determined in S301 in connection with the MD cycle containing this unit MD map is added as merchandise data attribute values for each merchandise disposition space (S302) (see Fig. 4 (b)).

(MD Map Updating Processing: Material Setting Processing: Fig. 10)

In cases where the material setting is selected by the user, the control means 13 refer to the attribute map memory means 11, and make a judgement as to whether or not corresponding theme attribute map has been set (S400). In cases where corresponding theme attribute map has not been set, the control means 13 output a message or the like to the user so that corresponding theme attribute map is first set. In

the present embodiment, the timing at which the material attributes are determined is set as a timing that is later than the timing at which the theme attributes are determined.

On the other hand, in cases where corresponding theme attribute map has already been set, a material attribute map input screen is displayed by the information processing means 100 or the like (S401). In this case, the control means 13 refer to the MD map memory means 10, ascertain how the merchandise disposition spaces and MD cycles have been set in the MD map that is the object of updating, and set the input screen so that one or more material attribute values are received for each merchandise disposition space. Furthermore, the MD cycles are displayed so that the user can refer to these cycles when inputting information.

On the basis of such an input screen, the user can assign materials to each merchandise disposition space on the time axis while considering the relationships of materials to merchandise disposition spaces, MD cycles, themes and the like. In this case, furthermore, it is not absolutely necessary to assign materials that are closed within the MD cycles; materials may also be assigned so that these materials extend across a plurality of MD cycles. However, since there is a hierarchical relationship between theme attributes and material attributes, the user must assign material attribute values so that these values are closed within the theme attribute values.

The control means 13 determine the material attribute map on the basis of the input from the user, and store this material attribute map in the map attribute memory means 11 in correspondence with the MD map that is the object of updating (S402).

Next, for each MD map that is the object of updating, the control means 13 match the time axis of the MD map that is the object of updating with the time axes of the abovementioned determined material attribute map (S403). Then, for each unit MD map, materials that are set on the same time axis as this unit MD map are respectively selected for each merchandise disposition space (S404). Furthermore, for each unit MD map that is the object of updating, the abovementioned respectively selected material attribute values are added as merchandise data attribute values to each merchandise disposition space (S405).

(MD Map Updating Processing: Color/Size Setting Processing)

In cases where the user selects the color/size setting, the control means 13 refer to the attribute map means 11, and make a judgement as to whether or not corresponding material attribute map has been set. In cases where such corresponding map has not been set, the control means 13 output a message or the like to the user so that corresponding material attribute map is first set. The reason for this is that in the present embodiment, the timing at which color attributes and size

attributes are determined is set as a timing that is later than the timing at which material attributes are determined.

On the other hand, in cases where corresponding material attribute map has already been set, the control means 13 refer to the MD map memory means 10, read out the unit MD map selected by the user (among the unit MD maps contained in the MD map that is the object of updating), and display a color/size attribute input screen using the information processing means 100 or the like for each combination of theme attribute values, item attribute values and material attribute values.

On the basis of this display screen, the user can determine variations in color and size while considering the relationships of these factors to merchandise disposition spaces, MD cycles, themes, items, materials and the like.

Next, the control means 13 add the color attribute values and size attribute values determined by the user to the unit MD map selected by the user as merchandise data attribute values for each merchandise disposition space. When the attribute values of these color attributes and size attributes are added, the unit MD maps are completed.

Furthermore, the MD map updating processing includes correction processing (MD map correction) that updates attribute values that are already stored in the MD map; such correction processing will be described later.

(MD Map Checking Processing)

"MD map checking processing" is processing that performs a balance check that verifies the attribute value balance of the attributes of the merchandise data, a profit indicator check that verifies whether or not the profit target values can be achieved, and the like, for the updated MD maps.

The control means 13 verify the attribute value balance for the three attributes of item, color and size at the timing at which the MD maps are updated (or at a preset timing such as the time at which the MD maps are completed or the like). In concrete terms, the control means 13 create a histogram of the item attribute values, color attribute values and size attribute values for each unit MD map on the basis of the merchandise data contained in this unit MD map, and determine the degree of bias on the basis of this histogram. Then, in cases where this degree of bias exceeds a preset reference value, the user is notified of this fact. Furthermore, the user can set the reference value of the degree of bias, and this reference value can be set separately for each model retail shop and MD map, and for each attribute.

Furthermore, the control means 13 also verify whether or not the profit target values can be achieved in cases where production, marketing or the like is performed on the basis of the MD maps, with this verification being performed at the timing at which prices are set as attributes of the merchandise data in the MD maps (this timing may conceivably

be (for example) the same timing as the timing at which color/size attributes are determined), or at a preset timing such as the time at which the MD maps are completed or the like. In concrete terms, the total profits obtained in cases where production, marketing or the like is performed on the basis of the MD maps for all retail shops is calculated for a specified calculation period (e. g., quarterly), and a profit indicator such as CFROI is determined on the basis of these values. In cases where this profit indicator falls below a certain preset reference value, the user is notified of this fact. Furthermore, the reference value for the profit indicator can be set by the user, or be set automatically by using planning target values, which may be received from a management planning supporting system or the like.

(Reference Information Input-Output Processing)

"Reference information output processing" is processing that outputs reference information for specified phases constituting the supply chain on the basis of the MD maps set for the respective model retail shops. Furthermore, "reference information input processing" is processing that receives reference information used to update the MD maps from specified phases that constitute the supply chain.

(Input-Output of Reference Information for Development Phase)

For example, the development phase/production preparation (design) phase are conceivable as phases for which reference information is input and output. The development phase/production preparation (design) phase are phases in which work such as the preparation of designs, paper patterns, samples and the like is performed as a pre-process leading up to actual production. In such phases, a production preparation system or the like which is used to unify information concerning raw materials and auxiliary materials, and which has the function of controlling the respective processes up to the point of sample completion, and the function of converting the substance of merchandise processing plans into data, operates as a system that is used to realize SCM.

The development phase/production preparation (design) phase are positioned relatively high on the upstream side in the supply chain; accordingly, there is a highly urgent need for the early acquisition of information indicating what kind of merchandise should be produced, and when this merchandise should be produced.

In the present embodiment, in consideration of such points, the processing is constructed so that reference information based on the MD maps is output to the production preparation system or the like (for example) at the first timing (i. e., the stage in which themes or items are confirmed), or at the latest at the second timing (i. e., in

the stage in which materials are confirmed). Furthermore, the processing is constructed so that information concerning determined designs and samples, raw materials, auxiliary materials and the like is received from the production preparation system.

By using such a construction, it is possible for the production preparation system or the like to acquire merchandise data attributes such as themes, items and materials, that are important for development and design, in a stage that precedes the complete confirmation of the merchandise data, so that the development phase/production preparation (design) phase can be caused to proceed by so-called advance reading. Furthermore, by receiving information concerning designs and samples, raw materials, auxiliary materials and the like from the production preparation system or the like, it is possible to use this information as reference information for updating the MD maps.

(Input-Output of Reference Information for Production Phase)

For example, the production phase is conceivable as another phase for which reference information is input and output. The production phase is a phase in which provision of raw materials and auxiliary materials, control of raw material warehousing, designation and control of production, designation of shipping and the like are performed. In such a phase, a production designation system or the like which has

the function of predicting raw material order quantities and the like operates as a system that is used to realize SCM.

In a conventional production phase, production plans are established on the basis of the experience and the like of the parties involved, and the provision of raw materials and the like and designation of production and the like are performed in accordance with these production plans. However, since there are no definite criteria for determining production quantities in the production plans, there are many cases in which excessive amounts of raw materials and the like are prepared, and excessive amounts or production are designated.

In the present embodiment, in consideration of such points, the processing is constructed so that reference information is output to the production designation system or the like on the basis of the MD maps. Furthermore, the processing is constructed so that information such as designated production quantities, delivery dates and the like are received from the production designation system or the like.

In this case, in the production designation system or the like, merchandise assortments in the retail shops can be utilized as a reference for determining production quantities; for example, the production phase can be caused to proceed in an appropriate manner so that the amounts of raw materials and the like that are required in order to maintain the merchandise assortments in the respective retail shops for a

specified period of time are prepared, and so that the required production is similarly designated. Furthermore, by receiving information concerning designated production quantities, delivery dates and the like, it is possible (for example) to confirm production quantities in the MD maps.

Furthermore, in cases where reference information is output after the stage in which materials and the like are confirmed (second timing), the provision of raw materials and the like can be performed by advance reading in the production designation system or the like in the same manner as in the production preparation system or the like. As a result, the lead time can be shortened.

(Input-Output of Reference Information in Shipping Phase)

For example, the shipping phase is conceivable as another phase for which reference information is input and output. The shipping phase is a phase in which the shipping of produced merchandise from DC (distribution centers) to retail shops, the shipping of such merchandise from retail shops to DC, and the shipping of merchandise between retail shops or the like is performed. In such a phase, a shipping system or the like which has a warehousing control function, a shipping routing function and the like operates as a system that is used to realize SCM.

In a conventional shipping phase, merchandise distribution involving the questions of what to dispose in

which retail shops is performed with consideration being given to the scale and the like of the respective retail shops only in the shipping phase, i. e., in the stage in which production of the merchandise has been completed. Accordingly, distribution plans that achieve a balanced distribution of merchandise to the respective retail shops must be established in the shipping phase, so that the lead time from the completion of production to the actual shipping to the retail shops is prolonged.

In the present embodiment, in consideration of such points, the processing is constructed so that completed MD maps are output to the shipping system or the like as reference information. Furthermore, the processing is constructed so that information concerning excessive quantities or insufficient quantities of merchandise or the like for each retail shop is received from the shipping system or the like.

In t his case, since the completed MD maps confirm the merchandise assortments in the retail shops, merchandise distribution/return/replenishment can as a rule be performed on the basis of the MD maps in the shipping system or the like, so that there is no need for the establishment of a revised distribution plan. As a result, the shipping phase can be caused to proceed quickly and efficiently. Furthermore, by receiving information concerning excessive quantities or insufficient quantities of merchandise or the like for each

retail shop from the shipping system or the like, it is possible to confirm the conditions of the merchandise assortments in the respective retail shops.

(Effect of Reference Information Input-Output Processing)

Thus, in the present embodiment, since the system is constructed so that reference information based on MD maps that specify the merchandise assortments in the retail shops is output for the respective phases that constitute the supply chain, SCM can be performed while taking into account the merchandise assortments in the respective retail shops in each phase.

In particular, since the MD map include the quantities of merchandise that are disposed in the retail shop, and since these merchandise quantities are determined in accordance with the capacities of the retail shop in the initial setting of the MD map, SCM can be performed with constant consideration being given to the physical restrictions of capacity by referring to the MD map in the respective phases.

Furthermore, since the MD map is constructed so that this map is divided into unit MD maps in specified time period units, and so that merchandise data can be added to each unit MD map, it is possible to control the merchandise assortments in the retail shop in a dynamic manner even in cases where the fluctuation period of the merchandise cycle is short by setting the time period units in accordance with the

merchandise cycle. As a result, SCM can be performed in a dynamic manner in accordance with the merchandise cycle in all phases by referring to the unit MD maps.

Furthermore, since the merchandise attributes in the MD map are determined in stages following the initial setting of the MD map, reference can be made to the merchandise assortments in the retail shop at various levels and various timings in the respective phases, from the timing at which superior-level attributes (e. g., theme or the like) are determined to the timing at which subordinate-level attributes (e. g., color, size or the like) are determined, so that SCM can be efficiently performed by performing advance reading or the like.

(Correction of MD Map)

The MD map updating processing is constructed so that the attribute values of respective attributes can be corrected according to conditions even after these attribute values have been tentatively determined. This is done in order to allow flexible alteration of the supply chain in cases where the future merchandise assortments in the retail shop are altered on the basis of (for example) sales information or the like obtained from the marketing phase.

Here, we will consider, on the basis of information obtained from the marketing phase at the point in time of the nth week, e. g., sales information or the like for the nth

week, the alteration of the future merchandise assortments in retail shop, i. e., the correction of unit MD map from the (n +1)st week on. Here, for example, in a case where the unit MD map for the (n + 8)th week are corrected on the basis of sales information or the like for the nth week, there is a time margin of eight weeks; accordingly, even if attributes of a superior hierarchical ranking such as theme or the like are corrected, there is a high possibility that this can be handled in the production phase or the like. However, in a case where the unit MD map of the following (n +1)st week are corrected on the basis of sales information for the nth week, the correction content that can be handled within a time period of one week is limited if the lead time for raw material provision, production and the like is taken into consideration.

Accordingly, in the present embodiment, the MD map updating processing is constructed so that the correction content is controlled in accordance with a time interval (x - n) in cases where the unit MD map for the xth week are corrected on the basis of sales information or the like for the nth week. In concrete terms, attributes of a higher hierarchical ranking can be corrected as (x - n) increases, i. e., as the available time margin increases.

For example, the system is arranged so that attributes ranging from theme attributes to color/size attributes can be corrected in cases where (x - n) > t1, so that attributes

ranging from item attributes to color/size attributes can be corrected in cases where $t1 \geq (x - n) > t2$, so that attributes ranging from material attributes to color/size attributes can be corrected in cases where $t2 \geq (x - n) > t3$, and so that only color/size attributes can be corrected in cases where $t3 \geq (x - n)$. t1 through t3 can be set in accordance with the characteristics of the merchandise and the lead time for production and the like (see Fig. 11).

In this case, furthermore, the reference information input-output processing can also be constructed so that the phase for which reference information is output can be controlled in accordance with the time interval $(x - n)$ for each unit MD map when reference information based on the MD map is output (see Fig. 12).

In concrete terms, the processing is constructed so that in a case where the current point in time is the nth week, reference information based on the unit MD map for the xth week can also be output for upstream phases such as the product development phase and production preparation (design) phase as the time interval $(x - n)$ increases. On the other hand, the processing is constructed so that in cases where the time interval $(x - n)$ is small, reference information based on the unit MD map for the xth week can be output for midstream to downstream phases such as the production phase, shipping phase and marketing phase.

In the example shown in Fig. 12, the system is constructed so that the product planning phase or product development phase is selected and reference information is output in cases where $(x - n) > t1$, so that the product development phase or production preparation (design) phase is selected and reference information is output in cases where $t1 \geq (x - n) > t2$, so that the production preparation (design) phase or production phase is selected and reference information is output in cases where $t2 \geq (x - n) > t3$, and so that the production phase or shipping phase is selected and reference information is output in cases where $t3 \geq (x - n)$. However, the construction shown in Fig. 12 is merely an example; the correction content of the MD maps and the output destination phase can be adjusted in accordance with the design. Fig. 13 shows the relationship that should be satisfied by the time interval, MD map correction content and output destination phase.

As a result of the use of such a construction, the systems of the respective phases can receive a correction content that can be handled in a timely manner, and receive this correction content at an appropriate timing. Accordingly, the merchandise assortments in retail shop can be controlled in a dynamic manner even in the case of business conditions in which demand is highly volatile, or business conditions

involving merchandise of a high thematic or suppositional nature.

(Other)

A recording medium on which an information processing program is recorded is conceivable as another embodiment of the present invention. A CD-ROM, magnetic disk, semiconductor memory or some other recording medium can be used as such a recording medium.

The information processing program is read into a data processing device from this recording medium, and controls the operation of this data processing device. As a result of the control effected by this information processing program, the data processing device performs processing that is the same as the processing of the MD map memory means 10 and control means 13 (MD map initial setting processing, MD map updating processing, reference information input-output processing and the like) in the abovementioned embodiment of the present invention.

Furthermore, the present invention is not limited to the abovementioned embodiment, but can be used with various modifications.

For example, the embodiment described above is constructed so that respective processing operations are performed for model retail shops; however, it would also be possible to construct the system so that respective processing

operations are performed for respective individual retail shops. Furthermore, it would also be possible to construct the system so that (for example) MD maps are determined by performing MD map initial setting processing and MD map updating processing for model retail shops, and MD map for each concrete retail shop is set on the basis of MD map for a model retail shop that are selected in accordance with the scale of this concrete retail shop. In this case, it is also conceivable that the system might be constructed so that MD map checking processing and reference information input-output processing are performed on the basis of MD maps for individual retail shops instead of or along with MD maps for model retail shops. Furthermore, the system may be constructed so that the processing that sets the MD maps for individual retail shops on the basis of MD maps for model retail shops is performed in the present information processing system, or so that this processing is performed in a separate system (e. g., shipping system or the like).

Furthermore, for example, it is also conceivable that the system might be constructed so that reference information is output for a VMD (visual merchandising) phase that is positioned as one of the marketing phases. The term "VMD phase" refers to a phase that performs planning and presentation for consumers by constructing a unified image with respect to retail shop image, retail shop atmosphere, merchandise arrangement methods, specifications of shop

furnishings and equipment, preparation of sales-promoting materials and promotions, etc. By outputting reference information based on MD maps for such a VMD phase, it is possible to perform VMD with reference to merchandise assortments in retail shops at various levels and various timings, so that retail shop planning and presentation can be performed with a dynamic tracking of retail shop merchandise assortments.

Furthermore, in the abovementioned embodiment, a supply chain concerning articles of clothing was described as an example. However, the supply chain to which the present invention is applied is not limited to such a supply chain; for example, the present invention can also be applied to supply chains dealing with sundries or the like, or various other supply chains in businesses marketing products subject to the physical restrictions of retail shops. Moreover, the present invention is not limited to supply chains involving physical objects; for example, embodiments of the present invention in which information contents are viewed as commercial products, and media that can offer information contents such as magazines, home pages, restaurant menus and the like are viewed as retail shops, are also conceivable.

Furthermore, in the above description, an information processing system and a recording medium were described as embodiments. However, embodiments of the present invention are not limited to these embodiments; the various processing

operations performed in the abovementioned information processing system may be comprehended as the supply chain management method of the present invention.

In the construction of the present invention, a supply chain can be managed using MD maps that specify retail shop merchandise assortments as a reference; accordingly, the degree of dependence on the experience and skill of the parties involved can be reduced, and a stable supply chain can be constructed.

In particular, by controlling the MD maps for each unit MD map and each MD cycle, it is possible to control the merchandise assortments in retail shops in a dynamic manner even in the case of business conditions in which large quantities of merchandise of various types are produced, business conditions in which the merchandise that is handled fluctuates in a short cycle, business conditions in which the volatility of demand is high, and business conditions involving merchandise of a highly thematic or suppositional nature.

The entire disclosure of Japanese Patent Application No. 2001-360885 filed on November 27, 2001, including the specification, claims, drawings and summary, is incorporated herein by reference in its entirety.

What Is Claimed Is:

1. A supply chain management (hereafter referred to as "SCM") supporting system for supply chains which are constituted by at least two phases of a product planning phase, product development phase, product preparation (design) phase, production phase, shipping phase and marketing phase, said system comprising:

initial setting means for determining the quantities of merchandise disposed in a retail shop in accordance with the capacity of this retail shop, and for initially setting merchandise control information for this retail shop so that such quantities of merchandise are included;

updating means for updating the merchandise control information by adding or correcting merchandise data for merchandise disposed in a retail shop to the merchandise control information set for this retail shop; and

input-output means for outputting reference information in a specified phase on the basis of the merchandise control information set for a retail shop, and/or receiving information used to update the merchandise control information.

2. The SCM supporting system according to claim 1, wherein the initial setting means initially set merchandise control information with this information divided into specified time period units, and the updating means are

constructed so that the merchandise control information can be updated in the units obtained by this division.

3. The SCM supporting system according to claim 2, wherein the initial setting means determine groups so that one set of merchandise control information or a plurality of divided sets of merchandise control information that are continuous in the time direction are contained in each group, and the updating means are constructed so that the merchandise control information can be managed in respective group units.

4. The SCM supporting system according to claim 2, wherein the updating means control the correction content in accordance with the time intervals of the divided periods in cases where the updating means correct the merchandise control information in said divided units.

5. The SCM supporting system according to claim 2, wherein the input-output means select the phase that is the object of output in accordance with the time intervals of the divided periods in cases where the input-output means output reference information on the basis of merchandise control information in divided units.

6. The SCM supporting system according to claim 2, wherein said specified time period units are weekly units.

7. The SCM supporting system according to claim 1, wherein the updating means are constructed so that the merchandise control information can be updated by adding or

correcting in stages the attribute values of various attributes that constitute the merchandise data.

8. The SCM supporting system according to claim 1, wherein the initial setting means determine the quantities of merchandise that are disposed in each merchandise disposition space of the abovementioned retail shop in accordance with the capacity of this retail shop, and initially set merchandise control information for this retail shop so that such merchandise quantities for each merchandise disposition space are included in this merchandise control information.

9. The SCM supporting system according to claim 1, wherein the initial setting means initially set merchandise control information in accordance with the capacity of a model retail shop of a specified scale, the updating means are constructed so that the merchandise control information for said model retail shop is updated, and merchandise control information for each individual retail shop is set on the basis of merchandise control information for a model retail shop selected in accordance with the scale of this individual retail shop.

10. The SCM supporting system according to claim 1, wherein said merchandise data comprises, as attributes thereof, at least one of theme, product type (item), material, color and size.

11. A supply chain management method for supply chains which are constituted by at least two phases of a product

planning phase, product development phase, production preparation (design) phase, production phase, shipping phase, and marketing phase, said supply chain management method comprising:

an initial setting step of determining the quantities of merchandise disposed in a retail shop in accordance with the capacity of this retail shop, and initially setting merchandise control information for this retail shop so that such quantities of merchandise are included;

an updating step of updating the merchandise control information by adding or correcting merchandise data for merchandise disposed in a retail shop to the merchandise control information set for this retail shop; and

an input-output step of outputting reference information in a specified phase on the basis of the merchandise control information set for a retail shop, and/or receiving information used to update the merchandise control information.

12. The supply chain management method according to claim 11, wherein the initial setting step initially sets merchandise control information with this information divided into specified time period units, and the updating step updates the merchandise control information in the units obtained by this division.

13. The supply chain management method according to claim 12, wherein the initial setting step comprises a step in which groups are determined so that one set of merchandise control information or a plurality of divided sets of merchandise control information that are continuous in the time direction are contained in each group, and the updating step is constructed so that the merchandise control information is managed in respective group units.

14. The supply chain management method according to claim 12, wherein the updating step controls the correction content in accordance with the time intervals of the divided time periods in cases where merchandise information is corrected in said divided units.

15. The supply chain management method according to claim 12, wherein the input-output step selects the phase that is the object of output in accordance with the time intervals of the divided time periods in cases where reference information is output on the basis of merchandise control information in divided units.

16. The supply chain management method according to claim 12, wherein the initial setting step initially sets the merchandise control information with this information divided into weekly units.

17. The supply chain management method according to claim 11, wherein the updating step updates merchandise control information by the addition or correction in stages of

the attribute values of various attributes that constitute the merchandise data.

18. The supply chain management method according to claim 11, wherein the initial setting step determines the quantities of merchandise that are disposed in each merchandise disposition space of the abovementioned retail shop in accordance with the capacity of this retail shops and initially sets merchandise control information for this retail shop so that such merchandise quantities for each merchandise disposition space are included in this merchandise control information.

19. The supply chain management method according to claim 11, wherein the initial setting step sets merchandise control information in accordance with the capacity of a model retail shop of a specified scale, the updating step is constructed so that merchandise control information for said model retail shop is updated, and the method further comprises a step in which merchandise control information for each individual retail shop is set on the basis of merchandise control information for such a model retail shop selected in accordance with the scale of this individual retail shop.

20. The supply chain management method according to claim 11, wherein said merchandise data comprises, as attributes thereof, at least one of theme, product type (item), material, color and size.

21. A computer-readable recording medium which stores an information process program that is used to cause a computer to perform the supply chain management method according to claim 11.

22. An information processing program which is used to cause a computer to perform the supply chain management method according to claim 11.