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SPECIFICATION

CUSTOMER-SPECIFIC COSMETIC PREPARATION SYSTEM

BACKGROUND OF THE INVENTION

TECHNICAL FIELD

The present invention relates to a system of supplying preferable cosmetics for individual customers depending on complexion, preference or purpose of each person, individually on the spot or on the Web, and further to a system of presenting cosmetics and accompanying services more suited to the complexion, preference or purpose of the customer by accumulating customer data.

BACKGROUND ART

Cosmetics are roughly classified into skincare goods and makeup goods, and skincare goods refer to liquid, gel or solid directly applied on the skin, mainly the facial skin in order to maintain or protect a favorable state of the skin such as facial skin for a specific period chiefly for beautifying purposes. Makeup goods refer to liquid, gel or solid directly applied on (generally known as decorating) the facial skin, lips, eyebrow, eyelash, eyeline, etc. chiefly for beautifying purposes.

In particular, skincare goods are mostly intended to moisturize the skin, and formerly the products had only the moisturizing function, but as the days are changed, products

classified in several types of effects and functions depending on the complexion are increasingly demanded and supplied.

Skincare goods are prepared in cosmetics of different skin characteristics and touches by adjusting the blend of components including water, ethanol, glycerin, collagen, algae colloid, hyaluronic acid, ascorbic acid, and others. For example, customers with oily skin tend to prefer products of a dry touch, and products containing a relatively large portion of ethanol or water are suited in this case. For customers having a dry skin, products having high contents of glycerin which is oily component and protective component are suited.

At the present, supply of cosmetics suited to delicately different complexion or preference of individuals is highly expected.

However, cosmetics are mass produced in factory and sold at shopfront, and if the complexion is classified in several types and products having corresponding effects and functions are manufactured, they are hardly suited to the delicately different complexion of the individuals, and individual customers could rarely obtain fully satisfactory products.

The invention is devised in the light of such background, and it is hence an object of the invention to present a system of individually supplying cosmetics best suited to the individually different complexion, preference or purpose.

SUMMARY OF THE INVENTION

To achieve the object, the system of the invention

comprises a shop terminal, and a cosmetic preparing apparatus, and the shop terminal is a system capable of transmitting data to the cosmetic preparing apparatus, and this shop terminal comprises an interview data base storing interview contents, and blend digitizing means for digitizing data of mechanical measurement result of skin condition, interview result, touch test result, aroma preference, and other preparation data, and when the shop terminal digitizes the entered data such as the mechanical measurement result of skin condition, interview result and touch test result by the blend digitizing means, converts into a format of data that can be processed in the cosmetic preparing apparatus, and transmits to a preparation control device, the cosmetic preparing apparatus prepares the cosmetics on the basis of the data in the processable format.

Further, the system of the invention may be also a system comprising a customer terminal to be used by the customer, and a data base server capable of communicating mutually, and in this system, the data base server comprises an interview data base storing a questionnaire, a customer data base storing customer information such as customer interview result, and blend digitizing means for digitizing the interview result, in which the customer accesses the data base server from the customer terminal, receives the questionnaire from the customer terminal, enters in the questionnaire while observing the screen of the customer terminal, and transmits to the data base server, while the data base server converts from the entered interview result data of the questionnaire into a format of data

that can be processed in the cosmetic preparing apparatus by the blend digitizing means and transmits to a preparation control device, and thereby the cosmetic preparing apparatus prepares the cosmetics on the basis of the data in the processable format.

Moreover, the cosmetic preparing apparatus comprises a preparation control device for receiving data from the shop terminal and issuing a preparation instruction, a pump driven by the preparation instruction received from the preparation control device, two or more tanks containing ingredients of cosmetics, and a container 40 for holding the blended cosmetics, and the ingredients of cosmetics in the tanks are preferred to be poured into the container 40 by the pump by means of tubes or the like.

Still more, the shop terminal and the data base server can communicate with each other, and the shop terminal can access the customer data base of the data base server, and therefore the customer data on the customer data base can be reviewed from the shop terminal, and the customer data can be written into the customer data base from the shop terminal.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic block diagram showing an example of a system configuration for preparing cosmetics on the spot.

Fig. 2 is a schematic block diagram showing an example of a system configuration for preparing cosmetics through the network.

Fig. 3 is a diagram showing a configuration of a shop terminal 20.

Fig. 4 is an example of interview data and customer registration information in the shop terminal.

Fig. 5 is an example showing a further detail of interview data and customer registration information in the shop terminal.

Fig. 6 is an example showing a flow from interview to selection of merchandise.

Fig. 7 is a block diagram showing transmission of numerical data from a data base server 10 to a preparation control device 30.

Fig. 8 shows a configuration of the server 10.

Fig. 9 is a schematic diagram showing a further detail of configuration and connection of the data base server 10.

Fig. 10 is an example of data digitized by a blend digitizing element in the data base server 10 and system used in digitizing means.

Fig. 11 is an example of a digitizing element and digitizing means for generating blend balance or numerical blend code necessary for the preparation control device 30.

Fig. 12 is an example of output of skin and physical condition of each customer obtained by interview in a form of advice statement.

Fig. 13 is an example of a calculation method for generating order information about customer's request individually in an order form.

Fig. 14 is a flowchart of preparing cosmetics on the spot.

Fig. 15 is a flowchart of preparing cosmetics through the network.

Fig. 16 is a schematic diagram of the preparation control device 30.

Fig. 17 is an example of interview contents in a questionnaire.

Fig. 18 is a diagram showing a plate for a touch test.

Fig. 19 is an example of a calculation method of individual display of blend ingredient names.

Fig. 20 is an example of an initial display screen of the system.

Fig. 21 is an example of a screen for referring to purchase history.

Fig. 22 is an example of a screen showing detail of purchase history merchandise.

BEST MODE FOR CARRYING OUT THE INVENTION

A best mode for carrying out the cosmetic preparing system for individual users of the invention is explained below while referring to the drawings.

Fig. 1 is a schematic block diagram showing an example of a system configuration for preparing cosmetics on the spot such as a shop.

This system comprises a shop terminal 20 installed at a shop having input means used by customers for input of data, a data base server 10 connected to this shop terminal 20 through

electronic communication means, a preparation control device 30 connected to the shop terminal 20 for instructing preparation of cosmetics on the basis of the data supplied from the shop terminal 20, pumps 31A, 31B, 31C, ... connected to the preparation control device 30, tanks 31A, 31B, 31C, ... connected to the corresponding pumps, and a container 40.

The shop terminal 20 can transmit data to the data base server 10 through the electronic communication means, and the data base server 10 calculates and controls by a required module on the basis of the information received from the shop terminal 20 to digitize the data, and the numerical data is transmitted to the preparation control device 30. Alternatively, this calculation control program may be stored in an auxiliary recording medium, and the medium may be distributed to each shop and operated on the shop terminal, so that this system may be operated. In this case, only the customer data is transmitted to the data base server 10 connected through the electronic communication means, so that operation of higher speed may be realized.

Further, the preparation control device 30 controls plural pumps 31A, 31B, 31C, ... (the pumps 31A, 31B, 31C are explained and illustrated, but the number of pumps is not limited to three, but may one or more in any number). A tank 32 is connected to each pump (the tanks 32A, 32B, 32C are explained and illustrated, but the number of tanks is not limited to three, but may one or more in any number; if it is not necessary to distinguish the tanks 32A, 32B, 32C, a tank

is represented by tank 32). The pump 31A pours the liquid in the tank A into the container 40 by means of a tube or the like (in the diagram, a thick line indicates a tube, and a thin line shows a communication line). The pump 31B and pump 31C pour the liquids in the tank 32B and tank 32C into the container 40 to prepare the cosmetics. The pumps and tubes are preferred to be capable of adjusting finely in the unit of 0.1 ml. Hereinafter, the pumps 31A, 31B, 31C are represented by the pump 31 if not necessary to distinguish.

The customer (or the shop clerk depending on the case) enters the customer data in the questionnaire described later on the screen of the shop terminal 20, and further the skin survey data, customer's touch test, aroma preference, and other investigation data are entered in the shop terminal 20. The questionnaire and interview screen are distributed from the data base server through the HP (home page) or the like, or stored in an auxiliary recording medium or the like as a program, and transmitted to the shop terminal 20. The shop terminal 20 transmits the entered customer data (hereinafter called customer data) to the data base server 10 through the electronic communication means. Receiving the customer data, the data base server 10 digitizes the data entered according to the questionnaire so as to be controlled by the preparation control device, and the numerical data is transmitted to the shop terminal 20 through the electronic communication means. Incidentally, when the blend digitizing means is presented to the shop terminal 20 as the program stored in the auxiliary

recording medium or the like, the customer data is digitized in the shop terminal 20.

When the input data integrating them is transmitted to the preparation control device 30, the preparation control device 30 controls the pump 31 on the basis of the transmitted data, and the liquids in the tanks 32 are poured into the container 40, so that the cosmetics are prepared.

The liquids in the tank 32 include various ingredients of cosmetics such as beautifying liquid, lotion and emulsion, for example, refined water, glycerin, propylene glycol, 1,3-butylene glycol, L-hydroxy proline, PCA-Soda, methyl paraben, biohyaluronic acid, denatured ethanol, erythritol, algae colloid, decaglycerin, Promois, hydrolyzed silk, collagen, ascorbic acid, other solutions and their mixed liquids.

In this system, the cosmetic preparing apparatus for preparing cosmetics is composed of the preparation control device 30, pumps 31, tubes, tanks 32, and container 40 as mentioned above, but the configuration is not particularly specified as far as cosmetics can be blended at desired prescription.

The shop terminal 20 may communicate mutually with the preparation control device 30, and in this case, therefore, all operations of the preparation control device 30 can be remote controlled. Further, the shop terminal 20 also communicates mutually with the data base server 10. The shop terminal 20 and data base server 10 may be either linked by LAN or linked

by the Internet.

The questionnaire, skin survey data, and touch test are described later.

Fig. 2 is a schematic block diagram showing an example of a system configuration for preparing cosmetics through the network.

Customer terminals 101a and 101b (hereinafter only the customer terminal 101a is explained, and represented by the customer terminal 101) are network terminals possessed or used by the customers, and these terminals can be used at home. The same configuration may be also installed at the shop. The customer terminal 101a can communicate mutually with the data base server 10 through the electronic communication means, and the data base server 19 can transmit data to the preparation control device 30. The number of customer terminals is not limited to two, but may be more than two.

The customer terminal 101 has input means, which is used for entering customer data in the questionnaire from the data base server 10 through the HP, or on the basis of the input format stored and distributed from the auxiliary recording medium, and further entering the skin survey data, customer's touch test, aroma preference and other investigation data. The entered customer data is transmitted to the data base server 10 through the electronic communication means. In the data base server 10, the customer information is stored, and the customer data is digitized at the same time, and the numerical data is transmitted to the preparation control device 30 installed at

the cosmetic production factory through the electronic communication means. The preparation control device 30 drives the pumps 31 on the basis of the numerical data, and the data base server 10 may transmit data to the preparation control device 30 for every order entry, or may have a function of instructing the preparation control device 30 after collecting a certain number of order entries. That is, the preparation control device 30 may have a function corresponding to such function to drive the pumps 31 after stocking a certain amount of data transferred from the data base server 10.

Fig. 3 is a diagram showing a configuration of the shop terminal 20 in Fig. 1.

The shop terminal 20 is a terminal installed at a shop, and it receives an interview screen from the data base server 10 through the HP, or as a program stored in an auxiliary recording medium or the like.

The shop terminal 20 is connected to the data base server 10 and the control device 30 for instructing preparation of cosmetics through electronic communication lines.

The shop terminal 20 has input means, including interview data input means for entering customer skin survey data, customer's touch test, aroma preference, and other investigation data, and customer registration information input means for entering personal information such as address of customer.

The data being read out in the data base server 10 or in the shop terminal 20 as a program stored in the auxiliary

recording medium is stored in a control device 21, and it functions as blend digitizing means for digitizing the information entered from the customer.

The shop terminal 20 also incorporates transmitting and receiving means for transmitting and receiving the customer data with the data base server 10 through the electronic communication means.

The shop terminal 20 receives each master (data) stored in the data base server 10, and image and character data of HTML, etc., and for preparation of products, order of purchase, and customer information registration by using them, arbitrary inputs are made into the received questions and entry items by the input means of the shop terminal 20, and the entered data is transmitted again to the data base server 10 as customer data.

In the data base server 10, the received customer information is registered in the customer information master 13 so that the customer may purchase the cosmetics next time from any place by using the initial registration data.

The blend digitizing means in the control device 21 digitizes the data so that the control device 30 can prepare cosmetics on the basis of the entered customer data and interview data.

Or, on the basis of the data received in the data base server 10, a necessary module calculates and controls, and the calculated and digitized data may be transmitted to the preparation control device 30.

Control means 20 in the shop terminal 20 has one or plural

blend digitizing elements. These blend digitizing elements can be obtained from the software presented as being stored in the auxiliary recording medium, or by making arbitrary inputs in the questions and entry items received from the data base server 10.

Fig. 4 is an example of interview data and customer registration information in the shop terminal 20.

For example, a first blend digitizing element is for selection of purpose of merchandise and preference, a second blend digitizing element is for merchandise specific interview, and a third blend digitizing element is for common interview. These interviews are made to the prospective customer when a person enters the desired to purchase the merchandise through the screen as described below.

To these blend digitizing elements, the customer information being read out from the customer information storage means is added, and the merchandise name, quantity, shipping address and other information are further added, and the procedure of selection and purchase of merchandise is executed. When all data are prepared, and the transmission decision is entered from the shop terminal and the input means of the Internet terminal 20, all data are transmitted to the data base server 10.

In the digitizing process in the data base server 10, the transmitted data is converted into specific ingredient blend numerical values by using the blend digitizing means in the data base server 10, and transmitted to the preparation

control device 30 by way of the electronic communication means and shop terminal 20.

Fig. 5 is an example showing a further detail of interview data and customer registration information in the shop terminal 20.

When the selected merchandise is a foundation cosmetic, in the foundation cosmetic preference selection input of the blend digitizing element 1, items such as sense of use, additional ingredient (topping), aroma, concentration, and original name are entered, and in the foundation cosmetic individual interview input of the blend digitizing element 2, life style, skin quality, self-check, complexion, and other specific questions about the foundation cosmetic are asked, and the corresponding replies are entered. In the common interview input of the blend digitizing element 3, physical questions common to all cosmetics such as life style and eating habit are questioned.

In the customer registration information input, the personal information of customer is entered.

These data are transmitted to the data base server 10, and digitized in the blend digitizing module, or digitized by the blend digitizing means in the control device 21 in the shop terminal 20, and the numerical data is transmitted to the preparation control device 30 for controlling the preparation of cosmetics.

Fig. 6 is an example showing a flow from interview to selection of merchandise.

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First, the customer selects the merchandise. An example of foundation cosmetic is also explained. In selection of merchandise, for example, the foundation cosmetic is classified into beautifying liquid, lotion and emulsion, which are selected by the customer. Next, in the merchandise selection items, the merchandise suited to the request of the customer is selected, among the sense of use (dry, moist, etc.), additional ingredient, aroma, etc.

Then, the merchandise specific questions are interviewed. Questions are presented to the customer, and for example, in the case of the lotion, the skin of the customer using the lotion is asked, or in the case of the lipstick, the lips of the customer are questioned.

That is, the merchandise specific questions are presented herein to the customer.

Finally, the common interview is presented to the customer.

These questions are common to all products, and health and physical conditions of the customers are inquired.

When all interviews are over, the purchase request is accepted.

Fig. 7 is a block diagram showing transmission of numerical data (order entry data) from the data base server 10 to the preparation control device 30 through a job processing server 90.

The interview data and customer data entered from the shop terminal 20 and customer terminal 101 are transmitted to

the data base server 10. In the data base server 10, using the blend digitizing module, the customer data is converted into a command that can be controlled by the preparation control device 30, and the customer registration information is transmitted to the job processing server, and recorded. The recorded data include the order number, member ID, name, original name, selected merchandise ingredient blend information, selected merchandise quantity, selected merchandise aroma information, interview result, advice statement, etc.

The stored data is used as reference material when the customer orders next time, and some of the information is presented to the customer together with the merchandise.

Fig. 8 shows a configuration of the data base server 10.

The data base server 10 comprises a control device for controlling data input and output (input control means, output control means, route control means), an interview data base storing interview contents, a customer data base storing customer interview results and comments on cosmetics presented by the system of the invention, and digitizing means for digitizing the interview results.

The route control means is composed of CPU (central processing unit) and others, and controls the parts, transfers the data, operates various calculations, and stores the data temporarily. The input control means controls the data entered from the connected terminal through the network, and the output control means controls the data issued to the terminal.

The files storing other service information presented in the data base server 10 and their control means are generally known, and are contained in the data base server 10 although not shown particularly in Fig. 8.

Fig. 9 is a schematic diagram showing a further detail of configuration and connection of the data base server 10.

The data base server 10 is connected to the shop terminal 20 or customer terminal 101, and is further connected to the job processing server and preparation control device 30.

The data base server 10 incorporates an interview item master 1212 for presenting interview information to the shop terminal 20 or customer terminal 101, a customer information master 13 for presenting a screen display similarly, a blend digitizing calculation module 14 for digitizing the interview results brought in from the shop terminal 20 or customer terminal 101, an interview result master 15 for storing the numerical results, a merchandise detail information master for storing merchandise information preliminarily, a customer CD numbering module 19 for automatically numbering the customer ID, an order number numbering module for numbering the order number, an order reception master 1111 for gathering and saving the customer data entered from the shop terminal 20 or customer terminal 101, and a purchase history master 16 for storing the information stored in the order reception master 1111 as purchase history.

The data base server 10 is connected to the job processing server 90 through electronic communication lines, and the job

processing server 90 is connected to the preparation control device 30.

The customer orders by using the shop terminal 20 or customer terminal 101. The screen of the shop terminal 20 or customer terminal 101 displays the merchandise information request screen as being distributed from the customer information master 13. Also, the preliminarily registered merchandise information (cosmetic composition example, etc.) is distributed from the merchandise detail information master and displayed. When using the second time or later, by entering the ID and password, the customer master and the purchase history master 16 cooperate to distribute the customer information to the shop terminal 20 or customer terminal 101, and the cosmetics purchased in the past are displayed, so that the same product can be purchased again easily.

When the customer desires to purchase a new cosmetic, the interview item master 12 transmits the interview items to the shop terminal 20 or customer terminal 101. The customer replies them, and reply results are transmitted again to the data base server 10, and the customer information is digitized in the blend digitizing calculation module 14. The numerical customer information is sent to the interview result master 15. The interview result master 15 stores and compiles an advice sheet for advising the customer. The interview result master 15 further transmits the numerical data to the order reception master 11.

The order reception master is incorporated in the control

device 11, and integrates the input data from the customer information master 13, merchandise detail information master, interview result master 15, order number numbering module 18, customer CD numbering module 19, and shop terminal 20 or customer terminal 101, and stores as order entry data. The order entry data is also sent to the purchase history master 16 and stored, and the backup of the merchandise purchase by the customer is prepared to be used as the history on the occasion of subsequent purchases.

The order reception master 11 transmits the order reception information to the job processing server, and the order reception information is also registered in the job processing server 90, and the order entry data is further transmitted to the preparation control device, and the cosmetics are prepared.

Fig. 10 is an example of data digitized by the blend digitizing element in the data base server 10 and system used in digitizing means.

The digitizing calculation means 14 includes, aside from the order number numbering module 18, customer CD numbering module, and digitizing calculation module 14, further an advice sheet generation module and a blend code generation module in the interview master.

The blend digitizing elements include an access log, a customer master, a merchandise detail information master, an entry master 11 (sales master), an interview master (including the common interview master, merchandise specific interview

master, and interview result master 15), and a purchase history master 16, and as the digitizing means, further, the digitizing calculation module 14, advice sheet generation module (provided in the interview master), order number numbering module, customer CD numbering module 19, and blend code generation module (provided in the order reception master 11) are used, and the data is digitized.

Fig. 11 is an example of the digitizing element and digitizing means for generating blend balance or numerical blend code necessary for the preparation control device 30.

The merchandise name, and the merchandise code specifying the merchandise type necessary for merchandise sales control as attribute are used as the keys, and the merchandise attribute information necessary for coding of the merchandise code specified by the merchandise information master, merchandise aroma information specifying the aroma of the merchandise, and the merchandise ingredient addition (topping) information compose the data base master used in symbols of merchandise code, and by utilizing the interview scores in the common interview master and merchandise specific interview master, the blend code generation module calculates the individual merchandise blend balance and compiles the merchandise blend code.

Fig. 12 is an example of output of skin and physical condition of each customer obtained by interview in a form of advice statement.

Interview attributes in the common interview master or

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merchandise specific interview master, that is, attributes of stress due to environmental factors of skin or body, stress due to mental factors, degree of skin dryness, degree of skin oiliness, degree of homeostatic function of entire body, degree of self-conscious condition, and degree of nutritional balance are assigned in each interview statement, and the replies are scored (by addition, subtraction, multiplication or division) according to the interview numerical judgement and calculated in the interview digitizing calculation module 14, and numerical results of interviews are obtained.

These calculated numerical values are matched with the total score assigned in the numerical value range of the interview result master 15 in each attribute of interview, and the degree of each attribute individually in the statement in the advice sheet generation module, and the individual condition is compiled as advice statement in a form of advice sheet also by way of the customer master.

The merchandise detail information master can be linked to the data if necessary to display the merchandise name, individual order merchandise information, and handling shop information simultaneously in the displayed advice sheet.

Fig. 13 is an example of a calculation method for generating order information about customer's request individually in an order form.

When a customer newly registers personal information, the information is numbered as customer code, and the registering customer acquires the customer code number by own

self, and in order that the party utilizing thereafter by this code or managing the information may manage and control by summing up the customer information, the non-registration code or missing number code is automatically numbered by the customer CD numbering module 19, and presented to the corresponding customer, and stored and saved in the same data table as the customer personal information registration information in the customer master.

When the customer registered in the customer master makes an order, the merchandise detail information master stores the merchandise name and type, the merchandise blend code does the generated merchandise blend code and the purchased shop attribute, and the individual interview result statement does the personal advice statement, in the order reception master 11, simultaneously with the order number numbered by the order number numbering module, and the order information is saved in the order sequence and transmitted to the preparation control device 30 and others.

The process of investigating the skin condition of the customer, and manufacturing and supplying the product is explained by referring to a flowchart.

Fig. 14 is a flowchart of preparing cosmetics on the spot.

The complexion is investigated by mechanical measurement, and digitized, then entered in the shop terminal by the shop clerk. Investigation results by interview are also digitized and entered in the shop terminal. Customer's touch test is also conducted in order to prepare products suited to

the sense of use and preference. As for the interview, after the customer enters directly in the method of filling in the questionnaire displayed on the screen according to the existing technique, the input data may be digitized. Of if the customer has already utilized this system before, the data may be utilized by obtaining from the customer data base of the data base server 10.

In mechanical measurement, the skin moisture, sebum measurement, data obtained from magnified photograph of skin, skin elasticity measurement, skin pH measurement, skin oxidation, and other measurement results are entered by the shop clerk in the shop terminal. The shop terminal converts the questionnaire data and touch test data into a format of data that can be processed in the preparation control device 30, and transmits to the preparation control device 30. On the basis of the transmitted data, the preparation control device 30 drives the pumps 31, manufactures cosmetics, and presents the specified merchandise to the customer. If necessary, by repeating preparation several times, samples may be actually used by the customer so as to conform to the preference of the customer more sufficiently.

The preparation can be prescribed in the unit of 0.1 ml, and when preparing, for example, 100 ml of cosmetic by blending A, B, and C, the formula is A (1000 steps) + B (1000 steps) + C (1000 step) = 100 ml, and therefore the preparation is finely adjusted substantially in continuously variable prescription.

The detail of skin condition measurement by mechanical

measurement, interview method, and touch test is described later.

Customer data (mechanical measurement result of skin condition, interview result, touch test result, aroma preference survey, ingredients of presented cosmetic, result of use of sample, if any, etc.) entered in the shop terminal 20 is transmitted to the data base server 10, and accumulated in the customer data base, and therefore when the customer orders cosmetics next time on the Web, this system and the customer can utilize the data in order to present more suited cosmetics. In the case of continued use by the customer, the satisfaction in use and after use is also accumulated in the customer data base to be used as the data for preparing more suited cosmetics for the customer. Not only for preparation of product of cosmetics, but also for the manner of use of the customer such as amount of use and cycle of use, the data may be utilized as effective resource for counseling and customer service of higher satisfaction by the customer. For example, when the customer's ordering cycle is stored in the customer data, a mail can be transmitted to the customer on the basis of the data. Further, when the data of winter good and summer goods is stored, if going to Hawaii in winter in Japan, summer goods can be ordered, and products suited to the purpose can be presented promptly.

To transmit customer data from the shop terminal 20 to the data base server 10, the data may be transferred by the shop terminal 20 when instructed from the shop terminal 20 to the

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preparation control device, or may be transmitted arbitrarily by the shop clerk from the shop terminal 20.

Fig. 15 is a flowchart of preparing cosmetics through the network.

The questionnaire is used for inquiring the skin condition, preference and purpose of the customer through the network. The customer enters the replies while observing the questionnaire transmitted from the data base server 10 to the customer terminal 101a and displayed on the screen, and transmits to the data base server 10 after completion of input, and the data base server 10 digitizes the data, and converts into a format that can be processed in the preparation control device 30, and transmits to the preparation control device 30. The preparation condition device 30 drives the pumps 31 according to the transmitted data, and manufactures cosmetics. The merchandise is shipped and delivered to the customer.

When the data base server 10 transmits to the preparation control device 30, a certain amount of data may be stocked and transmitted to the preparation control device 30, or when a certain amount of data is accumulated in the preparation control device, the pumps 31 may be driven.

Fig. 16 is a schematic diagram of the preparation control device 30.

When cosmetic manufacturing order data (original name, selected merchandise blend code, selected merchandise quantity, selected merchandise aroma information, interview result, advice statement, and other data) is commanded from the order

reception master 11 in the data base server 10, the preparation control device 30 commands by distributing data to individual devices. That is, the numerical data obtained from interview results is commanded to each pump, and a specified amount of ingredient is extracted from each tank and poured into the container 40.

The advice statement data is printed out by the printer.

The ingredient table is also printed out, and all documents are delivered to the customer together with the prepared cosmetics.

Fig. 17 is an example of a questionnaire.

The questionnaire includes basic data such as height, weight, age, and body fat percentage. An example of digitizing is explained. Refined water, glycerin, propylene glycol, 1,3-butylene glycol, L-hydroxy proline, PCA-Soda, methyl paraben, biohyaluronic acid, denatured ethanol, erythritol, algae colloid, decaglycerin, Promois, hydrolyzed silk, collagen, ascorbic acid, other solutions and their mixed liquids (moist type and dry type can be also included in the ingredient items), aroma ingredients, color of container 40, volume of cosmetic, type of package, and other ingredient items are scored depending on the replies of interview items.

For example, in the question "Weekday sleep time is 5 hours or less," if Yes is selected, point a is given to refined water and point b to glycerin. Other ingredient items are similarly scored. In the question "Awakened by a slight sound during sleep," if (1) (Not at all) is selected, point c is given

to refined water and point d to glycerin. Other ingredient items are similarly scored. However, if (2) (Rarely) is selected, point e is given to refined water and point f to glycerin. Thus, by replying the questions, scores of ingredient items are added and summed up, and, for example, if Yes is selected in the question "Weekday sleep time is 5 hours or less" and (1) (Not at all) is selected in the question "Awakened by a slight sound during sleep," the sum is a + c points, and points depending on replies in the subsequent questions are summed up.

From the accumulated reply result, the rate of blending of ingredient items is calculated.

This calculation method is only an example and is not limited.

Fig. 18 is a diagram showing a plate for a touch test. In this triangle, hyaluronic acid is located at peak A, algal ingredient at peak B, and cosmetic sample with 100% hydrolyzed silk at peak C, the concentration of hyaluronic acid is divided in 10 steps, becoming higher from the opposite side of peak A to peak A. As for peak B, as the algal ingredient changes from the opposite side of peak B to peak B, the concentration of hyaluronic acid becomes higher in 10 steps. Peak C is similarly plotted.

For example, at point a, there is a sample containing 70% of hyaluronic acid, 30% of hydrolyzed silk, and 0% of algal ingredient. At point b, there is a sample containing 30% of hyaluronic acid, 50% of hydrolyzed silk, and 30% of algal

ingredient. Thus, several samples are prepared and actually touched by the customer, and the preference of touch of the customer can be tested. However, if samples are prepared in gratings in the diagram, customer's touch may be confused, and samples are prepared only at certain points.

As aroma, further, floral, rose, gerbera, lavender, and lemon can be added, and the aromatization rate may be selected from low, medium and high.

In the invention, the label of each product can be printed and adhered, and it is very easy to print ingredient marking labels arranged in the order of content amount of ingredients.

Further, although not shown in the drawing, the evaluation data base evaluating ingredients of cosmetics on market can be installed in the shop terminal 20 or data base server 10, so that a product similar to the cosmetic used by the customer may be prepared, or the ingredients may be adjusted according to the preference or purpose of the customer, or an aroma may be added, and finely adjusted cosmetics may be prepared.

Fig. 19 is an example of a calculation method of individual display of blend ingredient names.

For example, in the case of a blend code of L1503020A5, 50 ml of lotion A, 30 ml of lotion B, and 20 ml of lotion C are dispensed from tanks by using pumps. If water is contained in plural ingredients, all ingredients are individually displayed. For example, element 6 of lotion A is composed of plural elements, PCA-Na (50%) and water (40%), and they are indicated separately

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as PCA-Na and water.

From a solution of three lotions A, B, and C, same ingredients are summed up, and the ingredient names only are indicated as the blended ingredient names in the order of amount of content.

Fig. 20 to Fig. 22 are display screens shown when the customer uses this system.

The customer can use this system by registering the customer ID and other personal information. On this screen, the customer can refer to the purchase history, or make a new order by replying questions.

The screen when selecting the same merchandise by using the purchase history is shown in Fig. 21 and Fig. 22.

INDUSTRIAL APPLICABILITY

As described herein, the cosmetic preparing system for individual users of the invention presents a system for manufacturing and distributing cosmetics suited to each customer and purpose individually, accumulating customer data, upgrading the cosmetics suited more to the customer and purpose, and enhancing the customer satisfaction, and therefore cosmetics best suited to each customer can be presented. Further, the customer can order products on the Web, so that the customer can select either attended counseling or unattended counseling.

In this system, further, part of contents of the customer data base can be utilized by the customer, so that the customer

can know the own skin condition.

In addition to the data of the prepared cosmetics, the satisfaction of customer after continued use can be also registered in the customer data base, and this system is useful for preparing products more suited to the customer.

Using the customer data base, moreover, the customer can be followed up.

In this system, the cosmetic is prepared mechanically in the unit of 0.1 ml, and prompt and accurate preparation is possible, and also in collaboration with the customer data base, the same product can be easily prepared, and fine adjustment is also easy.

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CLAIMS

1. A cosmetic preparing system having a customer terminal with an input means which a customer uses and a database server capable of mutual communications, wherein;

said database server includes an interview master stored an interview table which said customer responded, a customer information master stored customer information which is predetermined personal information of said customer, a merchandise detail information master stored proper information of a cosmetics to be prepared, an interview result master stored an interview result responded to said interview table and forms an advice sheet to advise to said customer, and a blend digitizing means for digitizing said interview result which said customer
responded;

said interview master includes a common interview master which is common interviews to all cosmetics and a merchandise specific interview master which is specific interviews for said respective cosmetics;

said customer terminal receives said common interviews and said specific interviews from said interview master in said database server, and sends results of said common interviews and said specific interviews inputted by said input means based on said results to said database server;

said database server stores said personal information of said customer at said customer information master and sores interview results of said common interviews and said specific interviews at said interview result master, and converts said interview results, by said blend digitizing means, into a format of data that can be processed by a

cosmetic preparing apparatus and sends said format of data that can be processed to said cosmetic preparing apparatus;

said cosmetic preparing apparatus prepares cosmetic components based on said format of data that can be processed and then detail of said prepared cosmetic components is stored at said merchandise detail information master; and

respective interviews of said common interviews and said specific interviews have interview attribute, and said interview result master forms said advice sheet corresponding to said interview attribute, said merchandise detail information master and said customer information master thereby to offer a cosmetics of which most comfortable cosmetic components are prepared to respective customers.

2. A cosmetic preparing system according to Claim 1, wherein said cosmetic preparing apparatus comprising a preparing control device which receives data outputted from said blend digitizing means and outputs a command of preparation, a pump which is driven by said command of preparation, two or more tanks that said cosmetic components are respectively put into, and a container which is injected said prepared cosmetics, and

said cosmetic components in said tanks are injected into said container by said pump through a tube or like.

3. A cosmetic preparing system according to Claim 2, wherein said cosmetic preparing apparatus is capable of forming a sample by using a plate for a touch test.

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4. A cosmetic preparing system according to Claim 3, wherein said customer terminal can mutually communicate with said database server, and said customer terminal can access said customer information server of said database server, whereby said customer data on said customer information master can be reviewed from said customer terminal and said customer data can be written into said customer information master from said customer terminal.

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ABSTRACT

A shop terminal having an interview data base storing interview contents, and digitizing means for digitizing data of mechanical measurement result of skin condition, interview result and touch test result can transmit data to a cosmetic preparing apparatus, the shop terminal digitizes the entered data such as mechanical measurement result of skin condition, interview result and touch test result by the digitizing means to convert into a format to be processed by the cosmetic preparing apparatus and transmit to a preparation control device, and the cosmetic preparing apparatus prepares cosmetics on the basis of the data in the processable format.

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Fig. 1

10	Data base server
20	Shop terminal
3	Preparation control device
31A	Pump
32A	Tank
31B	Pump
32B	Tank
31C	Pump
32C	Tank
40	Container

Fig. 2

101a	Customer terminal
101b	Customer terminal
	Factory
30	Preparation control device
10	Server
31A	Pump
32A	Tank
31B	Pump
32B	Tank
31C	Pump
32C	Tank
33	Container

Fig. 3

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20 Shop terminal

21 Control device

22 Interview data input means

23 Customer registration information input means

24 Digitizing means

25 Transmitting and receiving means

30 Preparation control device

10 Data base server

Fig. 4

20 Shop terminal or customer terminal

Selection of merchandise purpose, preference

Blend digitizing element 1

Merchandise specific interview

Blend digitizing element 2

Common interview

Blend digitizing element 3

Customer registration information

Merchandise select, purchase procedure

- Merchandise name
- Quantity
- Shipping address information

10 Data base server

30 Preparation control device

Fig. 5

Selection of preference of foundation cosmetic

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Sense of use

Additional ingredient (topping)

Aroma, concentration

Original name

Specific interview of foundation cosmetic

Interview on life style

Interview on skin condition

— Interview on self-check

Skin measurement

Common interview

Interview on life style

Interview on eating habit

10 Data base server

30 Preparation control server

Fig. 6

Shop terminal or Internet terminal

Selection of purchase merchandise

Lotion - Sense of use, additional ingredient, aroma - Specific interview

Beautifying liquid

Emulsion

Other - Merchandise select item

Common interview

Purchase order

Fig. 7

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10 Data base server

30 Preparation control device

90 Job processing terminal

Manufacturing order data

Fig. 8

10 Server

11 Control device

12 Interview data base

13 Customer data base

14 Digitizing means

Fig. 9

20 Shop terminal or customer terminal

10 Data base server

11 Order reception master

12 Interview item master

13 Customer information master

14 Digitizing calculation module

15 Interview result master

16 Purchase history master

17 Merchandise detail information master

18 Order number numbering module

19 Customer CD numbering module

30 Preparation control device

90 Job processing server

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Fig. 10

10 Data base server

Digitizing element

Customer master

Merchandise detail information master

Order reception master (sales master)

Common interview master

Purchase history master

Merchandise specific interview master

Interview result master (for advice sheet)

Digitizing means

Interview digitizing calculation module

Advice sheet generation module

Order number numbering module

Customer CD numbering module

Blend code generation module

Shop terminal 20 data

Customer terminal data

Fig. 11

Digitizing element

Merchandise detail information master

Merchandise attribute symbol

Merchandise aroma symbol

Merchandise additional ingredient (topping) data

Common interview master 12

Interview attribute

Interview statement

Interview score

Merchandise specific interview master 12

Interview attribute

Interview statement

Interview score

Digitizing means

Blend code generation

Merchandise blend code

Fig. 12

Digitizing element

Common interview master

Interview attribute

Interview statement

Interview score

Merchandise specific interview master

Interview attribute

Interview statement

Interview score

Interview result master (for advice sheet)

Merchandise master

Merchandise detail information master

Shop master

Customer master

Digitizing means

Interview digitizing calculation module

Interview digitizing result

Advice sheet generation module

Individual interview result advice statement

Fig. 13

Digitizing element

Customer master

Merchandise detail information master

Merchandise blend code

Individual interview result advice statement

Digitizing means

Customer CD numbering module

Order number numbering module

Order reception master (sales master)

Fig. 14

Skin condition, interview, mechanical measurement result, touch test, aroma test

Data input

Conversion of data into format processable by preparation control device 30

20 Shop terminal

Digitizing

Transmission to preparation control device 30

30 Preparation control device

Driving of pump

Preparation of cosmetic in container

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Fig. 15

101A Customer terminal

Receiving questionnaire

Input in questionnaire by customer, transmission of input data

10 Server

Transmission of questionnaire

Digitizing input data, and converted into format processable by preparation control device

Transmission of converted data to preparation control device

30 Preparation control device

Preparation of cosmetic

Fig. 16

Order reception master (sales master)

31 Pump

32 Tank

Printer

40 Container

Fig. 17

Please answer the following questions.

Name:

Select Yes or No, or numeral from (1) to (5), or (1) to (3).

Note: Measure how many minutes you took to answer the questions.

1) Weekday sleep time is 5 hours or less.

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Yes No

2) Awakened by a slight sound during sleep.

(1) Not at all (2) Rarely (3) Sometimes (4) Often (5) Always

3) Much time taken until falling in sleep.

(1) Not at all (2) Rarely (3) Sometimes (4) Often (5) Always

4) Sleep time varies largely day by day.

Yes No

5) Likes late night TV programs, and watches 3 days a week.

Yes No

6) Tense feeling of face right after washing.

(1) Not at all (2) Rarely (3) Sometimes (4) Often (5) Always

7) Same face washing morning and night.

Yes No

8) Skin is rough at the turn of season.

Yes No

9) Often feeling dry in the throat or nose.

(1) Not at all (2) Rarely (3) Sometimes (4) Often (5) Always

10) Staying air-conditioned room all day long.

(1) Not at all (2) Rarely (3) Sometimes (4) Often (5) Always

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Fig. 18

Lotion

Point a

Point b

Principal blend ingredients

Lotion A: Hyaluronic acid

Lotion B: Algal ingredient

Lotion C: Hydrolyzed silk

Fig. 19

Lotion A

No.	Ingredient name	Content %
1	Water	
2	Glycerin	
3	PG	
4	BG	
5	Hydroxy proline	
6	PCA-Na	
	Water	
7	Methyl paraben	
8	Hyaluronic acid Na	
	Water	

Lotion B

1	Water	
2	Glycerin	
3	PG	

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4	BG
5	Ethanol
6	Hydroxy proline
7	PCA-Na
	Water
8	Methyl paraben
9	Erythritol
10	Alga extract

Lotion C

1	Water
2	Glycerin
3	PG
4	BG
5	Ethanol
6	Hydroxy proline
7	PCA-Na
	Water
8	Methyl paraben
9	Water
	Hydrolyzed silk
	BG
	Methyl paraben
	Propyl paraben

Blend code

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Ingredient name

Water

Glycerin

PG

Ethanol

BG

Hydroxy proline

PCA-Na

Erythritol

Methyl paraben

Hyaluronic acid Na

Hydrolyzed silk

Alga extract

Propyl paraben

Fig. 20

To purchase history page

Linked to sense of use change selection page

To history merchandise select screen

Linked to new interview beginning page