(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 278 141 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
22.01.2003 Bulletin 2003/04

(51) Int Cl.[7]: **G06F 17/60**

(21) Application number: **01306286.4**

(22) Date of filing: **20.07.2001**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

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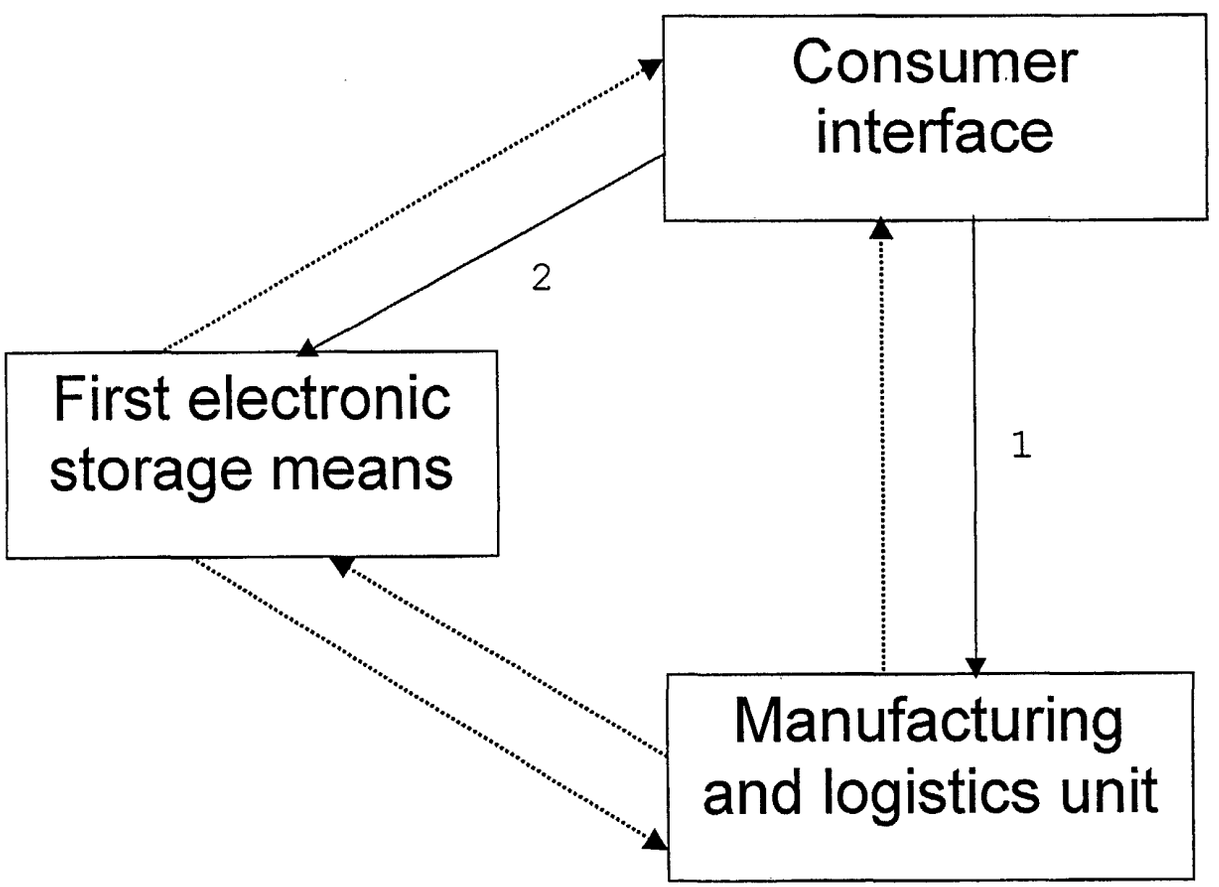
(54) System for manufacturing and dispatching meal kits

(57) A system for manufacturing and selling meal kits, in particular of meal kits containing chilled-stable ingredients.



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Description

Field of the invention

[0001] The present invention relates to a system for manufacturing and dispatching (selling) meal kits.

Background of the invention

[0002] There is an increasing demand with consumers for easy to prepare meals, in particular the main meal of the day (supper or dinner). This demand exists next to a demand for fully-prepared take-away meals or prepared fast food. These consumers have a demand for a high-quality meal, which involves some form of preparation after purchase (e.g. by the consumer) in order to provide a meal that has a fresh, natural, healthy and quality image. Such preparation may involve the assembling of several ingredients, which optionally will have to be cooked or need other forms of treatment before or after assembly to form a dish. For such consumers, it is an advantage that meal kits are available that contain a range of ingredients that can make up part or all of such a meal, so that purchasing a single item already provides part or all of the ingredients to prepare a meal. Meal is in this context to be understood as to relate to a single dish as well as to a range of dishes preferably to form a main meal optionally with one or more other courses.

[0003] The target consumer will also desire a range of different meal kits to be available to suit different tastes and preferences. Such preferences and tastes may develop over time, and the consumers will demand new varieties to be offered from time to time. This presents a problem to the manufacturer of the meal kits who wishes on the one hand to offer a broad range of meal kits of different varieties and sizes, and on the other hand to have a limited stock of raw materials and as little as possible of waste materials due to decay.

[0004] This problem exists in particular when preparing chilled-stable meal kits that involve one or more fresh ingredients. Such ingredients are prone to decay, so inventory of these starting materials will preferably be kept at a limited number (both in ranges as well as within a range) to reduce the amount of waste material due to decay of fresh ingredients.

[0005] Hence there is a need for a system of manufacturing meal kits that can cope with such requirements: i.e. a system that enables a variety of meal kits to be made while keeping the amount waste material due to decay of the ingredients and finished goods to a minimum. In other words, the system should link the manufacture and logistics to the demand to match them as closely as possible, both in number of units as well as in variety between various selling points, so as to minimize amount of waste material.

[0006] As an additional issue, the consumer appreciates receiving information about the meal kit regarding one or more of the origin of the ingredients, nutritional value, composition, recipe, etcetera. Preferably the consumer would like to receive such information with the meal kit, so that when the manufacturer is preparing a new meal kit variety such information should be available easily. Hence, the system should be flexible to facilitate manufacture of new varieties of meal kits, and every new variety may need new recipes, new ingredients having their own handling requirements and suppliers, different nutritional information, etcetera.

[0007] As a further issue the system should preferably include a module for enabling obtaining information from consumers, to aid e.g. (direct) marketing, new product development and other activities that may be based on consumer feedback.

[0008] Yet as a further issue the system should preferably have modules enabling the assembly of financial data reports, e.g. on sales, payments to manufacturers, etcetera.

Summary of the invention

[0009] It has now been found that the above may be achieved (at least in part) by a system for manufacturing and selling a variety of food products, which system comprises:

- a manufacturing and logistics unit,
- a first electronic storage means for storing data on products,
- and at least one consumer interface unit, and in which system the consumer interface unit sends
- a signal (1) to the manufacturing and logistics unit on the amounts and/or varieties sold and/or in stock, and/or
- a signal (2) to the first electronic storage means on the amounts and/or varieties sold and/or in stock,

wherein the signals (1) and/or (2) have a frequency of at least one signal per day the consumer interface is open for dispatching food products to consumers.

[0010] The above is graphically represented as an example in figure 1. Herein after the first electronic storage means for storing data on products will be referred to as 'first electronic storage means'.

[0011] The invention further relates to a system comprising a consumer interface unit which comprises at least one subunit for dispatching food products to consumers, which consumer interface unit is capable of sending

- a signal (1) to a manufacturing and logistics unit on amounts and/or varieties sold and/or in stock, and/or
- a signal (2) to a first electronic storage means on the amounts and/or varieties sold and/or in stock,

wherein the signals (1) and/or (2) have a frequency of

at least one signal per day the consumer interface is open for dispatching food products to consumers. Preferably, the invention is such that actualk sending of said signals occurs.

[0012] Although the minimum frequency for the signals (1) and (2) is at least one, preferably the frequency is at least two, or more preferably at least 10 signals per day the consumer interface is open for dispatching food products to consumers. Also, the signal may have a frequency of once every hour the shop is open for customers, or even at least once every 15 minutes.

[0013] Preferably, said foodstuffs are the meal kits or assemblies which comprise all the ingredients that are needed to prepare a complete typical (main) course. It is preferred that such kit comprises at least 3 different ingredients. Minor ingredients like pepper, salt, and optionally oil and/or fat may be absent, but preferably the kit does comprise a recipe as to how the ingredients should be further prepared and put together to a prepared dish. Such a recipe can be in words, pictures, a combination, or by reference to a cookbook, website, or alternative source. Ingredients that typically may be included are a carbohydrate source (e.g. pasta, rice, or other) a vegetable source and a protein source (e.g. meat or fish), the latter may be excluded e.g. when the food product is a vegetarian meal kit.

[0014] The system according to the invention is particularly suitable for meal kits which comprise perishable (i.e. non-ambient stable) food products, such as fresh spinach, fresh meat, fresh fish, etcetera. In conventional systems of selling food products that involve so-called chilled-stable food components there is a considerable proportion of waste material, due to decay.

[0015] In business, producers do not wish to disappoint customers with empty shelves due to an unexpected increase in demand, as this will mean that most likely the potential customer is lost for future business. As a result of this and of fluctuating demands, inflexible production, inflexible distribution and marketing systems, usually a certain surplus of such food products is prepared and put in the shelves (e.g. fridge cabinets). However, as such foods have limited best-by dates, the amount of material that had to be wasted using conventional manufacturing and selling systems because the surplus was too large in the end is considerable. The system according to the present invention can help reducing the amount of waste material by better matching manufacturing and distribution with demand. Although systems have been invented in the past for this, it is submitted that the lay-out as disclosed herein enables improvement in which selling and manufacturing/distribution are linked with what may be called an electronic storage means for storing data on products ("first electronic storage means') on which information can be stored about e.g. the products sold, nutritional values of the individual ingredients and/or whole meal kit, suppliers, purchase-, storage- and handling requirements of raw materials/ingredients, legal requirements, quantities, packaging and artwork specifications (pictures, leaflets, recipes etcetera), quality assurance etcetera. The above advantage is in particular achieved when selling chilled-stable food products.

[0016] Preferably the system according to the invention further comprises a second electronic storage means, which may be used to store data and information on consumers, their purchases and their behaviour, loyalty programmes, etcetera. Optionally, the second electronic storage means may be linked with or integrated into the first electronic storage means discussed above. The information for this may come from the consumer interface unit by a signal (3) from the consumer interface unit to the second electronic storage means. The frequency may be the same or different to the frequency of the signals (1) and (2).

[0017] An advantage of the system according to the invention is that it may also facilitate re-distributing food products from one consumer interface to another, if at one location demand is larger and at another demand is less than anticipated.

[0018] Further advantages of the system according to the invention are that on orders placed in advance it is easy to store consumer information for marketing purposes or loyalty programmes thus enabling in a convenient way one-to-one marketing.

Detailed description of the invention

[0019] In the system according to the invention, the manufacturing and logistics unit preferably comprise one or more sub-units relating e.g. to:

raw material order and purchase,
product assembly and packing,
distribution and delivery,
demand planning.

[0020] In this unit the food products are actually made or put together and dispatched to the consumer interface units. In order to produce the foodproducts it may involve packing of individual portions of (semi-) raw ingredients, assembling such raw ingredients that to form a package that contains most (i.e. more than 50% in numbers) of the ingredients of the meal to be prepared. Food ingredients usually not included may incorporate pepper and/or salt.

[0021] A consumer interface unit has preferably at least one or more sub-units relating to:

dispatching the food products to the consumer,
recording amounts and/or varieties of foodproducts sold,
communicating to the consumer the varieties of foodstuffs on offer,
storing and/or offering the food products.

Also, information may be stored (and communicated to

e.g. manufacturing and logistics unit) on pre-ordered meal kits, so as to ensure the products are physically in the consumer interface the client wishes to pick it up, by balancing manufacturing and demand. The consumer interface may also store information on number of kits and varieties in stock. Such data may be used either in the consumer interface or in the first electronic storage means or in the manufacturing and logistics unit to plan demand for the day, and the necessary stocking up. Furthermore, the consumer interface unit may also have facilities (e.g. programmable electronic ticker tape) to communicate messages to walking-by customers, e.g. on special offers etcetera.

[0022] The number of consumer interface units is preferably at least 2, more preferably at least 4. Preferably this is per single manufacturing and logistics unit and/or per single first electronic storage means. They may have various physical and organisational forms, like as a separate shop (e.g. kiosk type outlet), shop-in-shop, or part of a supermarket. Part of the consumer interface may be organised separately from the physical form of the handing-out of food products. This may be done by presenting the products and varieties on a website on the internet, having pre-ordering facilities on the internet, or by phone, etcetera.

[0023] Both electronic storage means as set out hereinbefore may be construed as a database, or may be in the form of a computer-readable datacarrier.

[0024] In the system according to the present invention it is preferred that the consumer interface unit offers at least 3 different meal kits. For example, there can be one or two fixed kits, one or two specials for that day of the week, and one or two new varieties for trying out.

[0025] Integrated into the system according to the invention there may also be a new products development unit. In such a unit new meal kit varieties can be developed. This may me steered by feedback given by customers, requesting certain types of flavours, ingredients, etcetera. Such information to steer the new products development unit may be stored on the second electronic storage means. Therefore, there is preferably a signal (4) from this second electronic storage means to a new products development unit, having e.g. similar frequency as the signals (1) to (3) as discussed above. There may be a further signal (5) from the new product development unit to the first electronic storage means, to enable the ordering of the proper ingredients from the appropriate suppliers, with the right handling, storage requirements etcetera to facilitate the actual development and manufacture of such new varieties, again to a minimal waste material stream.

[0026] It is submitted that the system according to the invention may also lead to being able to develop and introduce very rapidly new product varieties, upon customer behaviour.

EXAMPLES

Example 1

[0027] As an example, in figure 1 a basic structure has been displayed having the minimum of a consumer interface, a manufacturing and logistics unit and a first electronic storage means for storing data on products. In this example, the consumer interface may comprise a kiosk-type unit for selling chilled foodproducts. The foodproducts can be e.g. 4 varieties of meal kits. The different meal kits and prices can also be displayed on an internet web page.

[0028] The manufacturing and logistics unit may contain sub-units for ordering raw materials, e.g. fresh vegetables, meat, fish, carbohydrate sources, etcetera. There may be a unit packaging all these materials into their own single packaging, and a unit assembling the packed components with a leaflet describing preparation. For every single unit sold a signal may be sent to the manufacturing unit, to enable planning the manufacture and distribution of sufficient stock. Once a day every 15 minutes there is a signal from the consumer interface to the first electronic storage means, to enable storing data on the number of units sold, what types of meal kits, what times the meal kits are sold, what new raw materials have to be ordered, at which specs, for which meal kits, etcetera. Optionally, there are other signals (in figure 1 given by the dotted lines) possible of the various units communicating with each other on meal kits sold, ingredients needed, etcetera.

Example 2

[0029] In figure 2, the same set up as in figure 1, can be used, with additionally a second electronic storage means for storing data on consumers and a new products development unit. Every unit sold can also be communicated (through connection 3) to the second electronic storage means, in which information can be stored on each individual consumer, e.g. for loyalty programmes, who bought what, and such information may be added to a consumer profile stored in the second electronic storage means for later analysis and one-to-one marketing. There may be a link back (nr. 4) to the consumer interface to enable direct marketing at the consumer, e.g. by offering him or her by email or (WAP) phone his or her favourite dish. In addition, a consumer will be able to order products in advance, via internet, phone, or pre-order at the sales unit. The order may be recorded electronically in a computer system, guaranteeing fulfilment and avoiding stock being out. Or there may be sent a questionnaire back from the second electronic storage means to the customer via the consumer interface. On the basis of this, and other information e. g. from the second electronic storage means send to the new products development unit (link nr. 5) may develop new varieties of meal kits. A link to the first electronic

storage means (link nr. 6) will then ensure the proper ingredients to the right specs etcetera are ordered (via a link nr. 7 to the manufacturing and logistics unit), and the proper labelling information and handling requirements stored.

Claims

1. System for manufacturing and selling a variety of food products, which system comprises:

- a manufacturing and logistics unit,
- a first electronic storage means for storing data on products,
- and at least one consumer interface unit,

and in which system the consumer interface unit comprises at least one subunit for dispatching food products to consumers, and in which said consumer interface unit sends

- a signal (1) to the manufacturing and logistics unit on the amounts and/or varieties sold and/or in stock, and/or
- a signal (2) to the first electronic storage means on the amounts and/or varieties sold and/or in stock,

wherein the signals (1) and/or (2) have a frequency of at least one signal per day the consumer interface is open for dispatching food products to consumers.

2. System comprising a consumer interface unit which comprises at least one subunit for dispatching food products to consumers, which consumer interface unit is capable of sending

- a signal (1) to a manufacturing and logistics unit on amounts and/or varieties sold and/or in stock, and/or
- a signal (2) to a first electronic storage means on the amounts and/or varieties sold and/or in stock,

wherein the signals (1) and/or (2) have a frequency of at least one signal per day the consumer interface is open for dispatching food products to consumers.

3. System according to claim 1-2, wherein, the manufacturing and logistics unit comprises one or more sub-units relating to:

- raw material order and purchase,
- product assembly and packing,
- distribution and delivery,
- demand planning.

4. System according to claim 1-3, wherein the consumer interface unit, next to a sub-unit for dispatching food products to consumers, comprises one or more sub-units relating to:

- recording amounts and/or varieties of foodproducts sold
- communicating to the consumer the varieties of foodproducts on offer
- storing and/or offering the food products.

5. System according to claim 1-4, wherein the first electronic storage means comprises stored information on one or more of nutritional values, purchase-, storage-, or handling requirements of raw materials.

6. System according to claim 1-5, further comprising a second electronic storage means for storing data on consumers.

7. System according to claim 1-6, wherein the number of consumer interface units is at least 2.

8. System according to claims 1-7, wherein the food products comprise perishable (i.e. non-ambient stable) food products.

9. System according to claim 1-8, wherein the frequency of signal (1) is at least once every hour during the time the sub-unit for dispatching food products to consumers is open for consumers.

10. System according to claim 1-9, wherein the consumer interface is a kiosk, a separate shop, shop-in-shop, or part of a supermarket.

11. System according to claims 4-10, wherein the subunit for communicating the varieties on offer is in part achieved by a web-site on the Internet.

12. System according to claim 1-11, wherein the food products are meal kits containing at least 3 different edible ingredients.

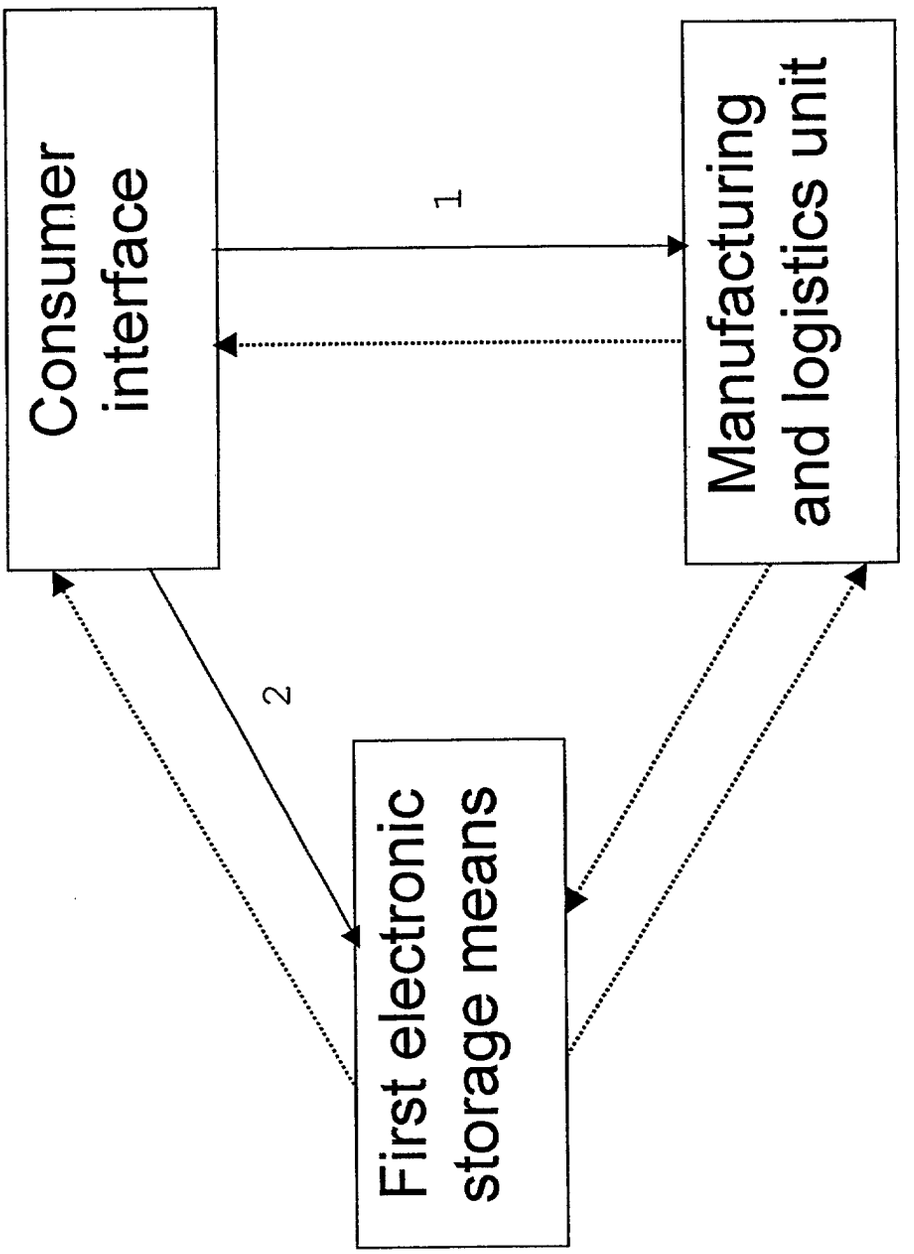
13. System according to claim 1-12, wherein the consumer interface unit offers at least 3 different meal kits.

14. System according to claim 6-13, wherein there is a signal (3) from the consumer interface unit to the second electronic storage means.

15. System according to claim 6-14, wherein there is a signal (5) from the second electronic storage means to a new products development unit.

16. System according to claim 15, where there is a fur-

ther signal (6) from the new product development unit to the first electronic storage means.


Consumer interface
Manufacturing and logistics unit
First electronic storage means
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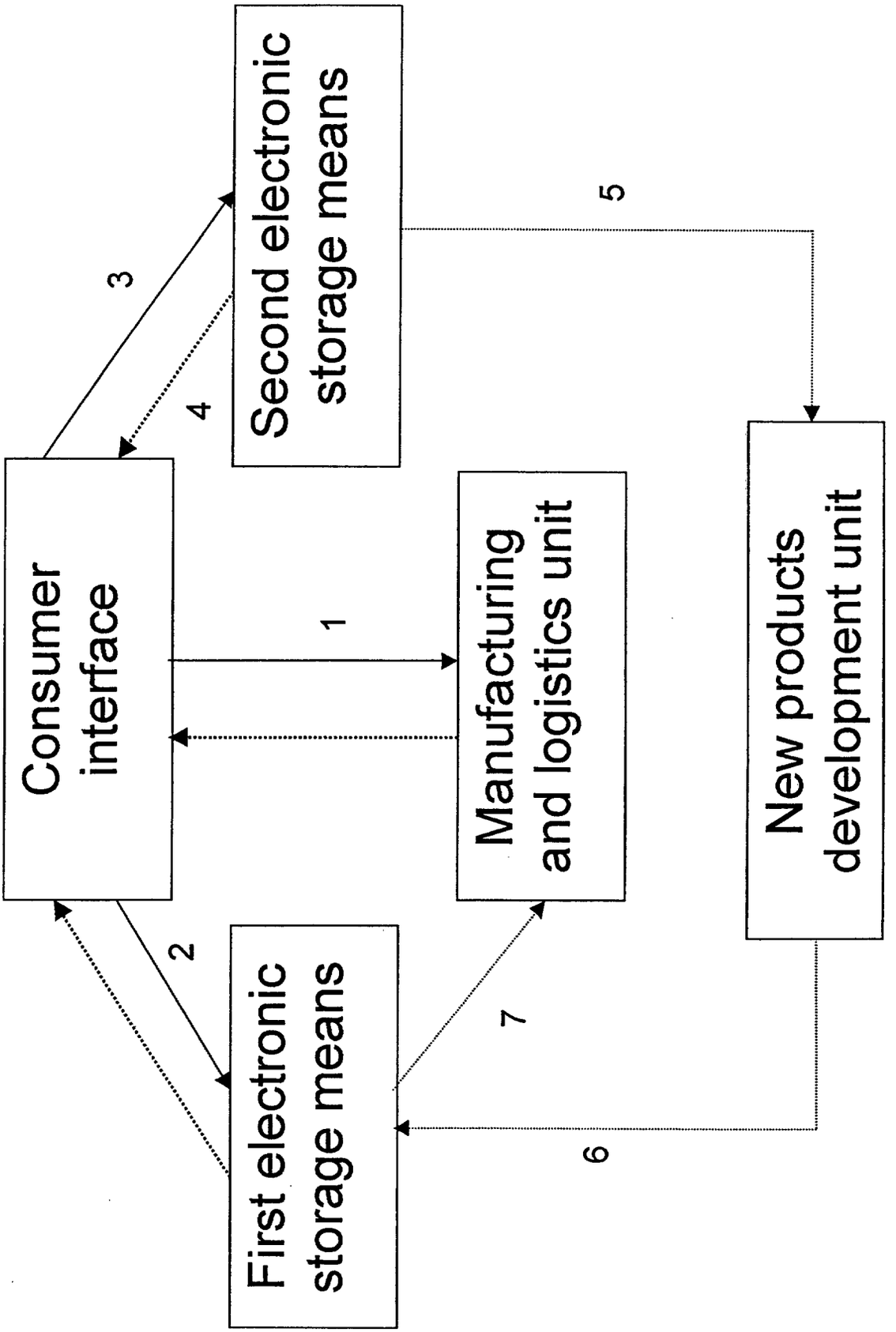
Consumer interface
Manufacturing and logistics unit
New products development unit
First electronic storage means
Second electronic storage means
1
2
3
4
5
6
7

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 30 6286

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X Y	WO 00 68859 A (WEBVAN GROUP INC) 16 November 2000 (2000-11-16) * page 27, line 13-20 * * page 31, line 3-17 * * page 53, line 1-10 * * figures 1-5,13 *	1-4,6-8, 11-13 5,9,10, 14-16	G06F17/60
Y	US 6 038 546 A (FERRO JAY) 14 March 2000 (2000-03-14) * figures 1,4,6 *	5,10	
Y A	FR 2 711 439 A (FREST SA) 28 April 1995 (1995-04-28) * claim 1; figures 4,5 *	9,14 1,2,7,8	
Y	WO 00 43923 A (FIORILLO MASSIMO) 27 July 2000 (2000-07-27) * page 4, line 4-45 *	15,16	
A	WO 01 45062 A (CATALINA MARKETING INT) 21 June 2001 (2001-06-21) * abstract *	15	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G06F
A	WO 00 68856 A (WEBVAN GROUP INC) 16 November 2000 (2000-11-16) * abstract *	1,2	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	18 December 2001	Laub, C

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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18-12-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0068859 A	16-11-2000	AU 4712500 A WO 0068859 A2	21-11-2000 16-11-2000
US 6038546 A	14-03-2000	NONE	
FR 2711439 A	28-04-1995	FR 2711439 A1	28-04-1995
WO 0043923 A	27-07-2000	DE 19928344 A1 AU 3143600 A WO 0043923 A2	31-05-2001 07-08-2000 27-07-2000
WO 0145062 A	21-06-2001	AU 3586100 A PT 102466 A WO 0145062 A1	25-06-2001 29-06-2001 21-06-2001
WO 0068856 A	16-11-2000	AU 4839300 A WO 0068856 A2	21-11-2000 16-11-2000

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