SYSTEM FOR DYNAMICALLY PRESENTING VISUAL INFORMATION TO CONSUMERS SHOPPING AT A PHYSICAL STORE

Field background

[0001] The disclosed subject matter relates to retail, and more particularly, but not exclusively, to management of retail commerce in brick and mortar stores.

Discussion of related field

[0002] Online retail, and brick and mortar retail are the two primary means that connect customers with manufacturers. In online retail, customers enjoy convenient shopping at any time of the day from any location. Further, online retail shopping facilitates quick checking and comparing of deals provided by the same vendor or different vendors.

[0003] In online retail, a management system is dedicated to track stock data and display offers and deals to customers. As a result, customers find it convenient to shop online. However, the risks of fraud, security threats to financial instruments and phishing are associated with electronic retail. Further, in the event of a problem associated with the item, such as, the product not being what the consumer ordered or the product not being satisfactory, consumers are required to contact the retailer, and then wait for a replacement or refund, which might take as long as a month in some cases.

[0004] On the contrary, in case of brick and mortar retail, there exists a loyal relationship between the customer and the store owner. The customers can closely inspect the product prior to purchase. Moreover, customers enjoy services, such as, alteration of goods, exchange facilities and immediate refund in the store, among many other benefits. Hence, despite the advent of online retail, consumers prefer visiting brick and mortar stores in many scenarios.

[0005] In case of brick and mortar stores, floor area of the store plays a key factor. Larger floor area has the advantage of arranging goods according to a plan, which is commonly referred to as planogram, thereby ensuring that goods available for sale can be seen by consumers as they walk through the store. While stores having a large floor area, which are commonly referred to as super market, have the advantage of displaying products in a more efficient manner, setting up such stores involve substantial investment. Further, the display of goods may be planned based on past experience and based on incentives to the store owner, but they are not based on or changed according to consumers currently shopping in the store.

Furthermore, such super markets will have location constraints as they require large floor area, thereby making access to such stores to consumers relatively difficult.

[0006] On the other hand, brick and mortar stores operating in spaces having smaller floor area have more flexibility in selecting location for their stores. Hence, one can find several smaller stores, which are easily accessible to consumers. However, since they operate in smaller space, the goods available for sale cannot be displayed effectively, which affects the sales made by the store. Further, a small store makes it difficult to endorse brands or products by advertising them in a way that attracts the customer towards a particular brand or product, which in turn, helps in increasing sales. Such small retailers are left with no option but to be satisfied with the lower sales owing to the product display constraints or move to a larger space to improve sales, which also has its share of disadvantages, as discussed earlier.

[0007] In light of the foregoing discussion, there is a need for a technique for managing retail commerce in brick and mortar stores.

SUMMARY

[0008] An embodiment provides a system for managing a physical store. The system includes at least one input device, a memory unit, a processing unit and at least one display unit. The input device is configured to extract information associated with products in the physical store. The memory unit comprises an inventory database, wherein the inventory database comprises information associated with products in the physical store. The processing unit is configured to receive information from the input device and create a product display schedule using information received from at least one input device. The display unit displays information as per the product display schedule.

BRIEF DESCRIPTION OF DRAWINGS

[0009] Embodiments are illustrated by way of example and not limitation in the Figures of the accompanying drawings, in which like references indicate similar elements and in which:

[0010] **FIG. 1** is an exemplary illustration of the system **100** for managing a physical store, in accordance with an embodiment

[0011] **FIG. 1A** is an illustration of the device **110** hosting the memory unit **104**, the processing unit **106** and the display unit **108**, in accordance with an embodiment;

[0012] **FIG. 1B** is an illustration of the module **112** hosting the memory unit **104** and the processing unit **106**, in accordance with an embodiment;

[0013] **FIG. 2** is an exemplary illustration of the memory unit **104**, showing the master database **202** and an inventory database **204**, in accordance with an embodiment;

[0014] **FIG. 3** is an exemplary illustration of the processing unit **106** displaying **300** products, in accordance with an embodiment;

[0015] **FIG. 4** is an illustration of the display unit **108** displaying a dynamic schedule of products to customers, in accordance with an embodiment;

[0016] **FIG. 5A** is an illustration of the system **100** displaying recommendations on the display unit **108**, with module **112**, to customers at a billing interface, in accordance with an embodiment;

[0017] **FIG. 5B** is an illustration of the system **100** displaying recommendations on the display unit **108**, with module **110**, to customers at the billing interface, in accordance with an embodiment; and

[0018] **FIG. 6** is an illustration showing the physical store using the processing unit **106** hosting the memory unit **104**, and the display unit **108**, in accordance with an embodiment.

DETAILED DESCRIPTION

I. OVERVIEW

II. EXEMPLARY SYSTEM FOR PRESENTING VISUAL INFORMATION ABOUT PRODUCTS

III. CONCLUSION

I. OVERVIEW

[0019] A system for managing a physical store is disclosed. The system includes at least one input device, a memory unit, a processing unit and at least one display unit. The input device scans information identifying a product. This information is received as an input by the processing unit, which in turn creates a product display schedule at least using the input from the input device. The memory unit comprises an inventory database, which is created from a master database by copying information from the master database. The product

display schedule presents recommendations of products to customers, which are displayed on a display unit located within the store.

[0020] The following detailed description includes references to the accompanying drawings, which form part of the detailed description. The drawings show illustrations in accordance with example embodiments. These example embodiments are described in enough detail to enable those skilled in the art to practice the present subject matter. However, it will be apparent to one of ordinary skill in the art that the present invention may be practiced without these specific details. In other instances, well-known methods, procedures, components, circuits, and networks have not been described in detail so as not to unnecessarily obscure aspects of the embodiments. The embodiments can be combined, other embodiments can be utilized or structural, logical, and electrical changes can be made without departing from the scope of the invention. The following detailed description is, therefore, not to be taken as a limiting sense.

[0021] In this document, the terms "a" or "an" are used, as is common in patent documents, to include one or more than one. In this document, the term "or" is used to refer to a nonexclusive "or," such that "A or B" includes "A but not B," "B but not A," and "A and B," unless otherwise indicated.

II. EXEMPLARY SYSTEM FOR PRESENTING VISUAL INFORMATION ABOUT PRODUCTS

[0022] An embodiment discloses a system **100** for managing a physical store. **FIG. 1** is an exemplary illustration of the system **100** for managing a physical store, in accordance with an embodiment. The system **100** includes an input device **102**, a memory unit **104**, a processing unit **106** and a display unit **108**.

[0023] In an embodiment, the input device **102** is configured to extract information associated with products. For example, the input device **102** scans barcode present on products to extract information associated with products. The input device is located within the physical store.

[0024] The input device **102** can be a point of sale scanner, optical character recognition device, a camera and RF ID scanner among other such input devices.

[0025] In another embodiment, the scanned information includes at least product identification information, such as, for example, product name, brand name and price of the product.

[0026] In an embodiment, the memory unit **104**, the processing unit **106** and the display unit **108** are configured in a single device **110**. **FIG. 1A** is an illustration of the device **110** hosting the memory unit **104**, the processing unit **106** and the display unit **108**, in accordance with an embodiment. The device **110** can be, for example, a smart phone, tablet or notebook, among other such devices. The device **110** communicates with the input device **102** to receive information extracted by the input device **102**. The communication between the device **110** and the input device **102** can be through wired network. Alternatively, the communication between the device **110** and the input device **102** can be through wireless network, or a combination of wired and wireless network.

[0027] In an embodiment, the device **110** communicates with more than one input devices **102** to receive information extracted by the input devices **102**.

[0028] In an embodiment, the memory unit **104** and the processing unit **106** are configured in a single module **112** and the display unit **108** is configured as a separate module. **FIG. 1B** is an illustration of the module **112** hosting the memory unit **104** and the processing unit **106**, in accordance with an embodiment.

[0029] In an embodiment, the memory unit **104** includes a master database and an inventory database. **FIG. 2** is an exemplary illustration of the memory unit **104**, showing the master database **202** and an inventory database **204**, in accordance with an embodiment.

[0030] The master database **202** comprises information corresponding to products that can be sold in a physical store. In an embodiment, the inventory database **204** is created using the master database **202**. The master database **202** is a preloaded database that is stored in the memory unit **104**, and can be part of a device **110** that is used in a physical store to manage the physical store. In another embodiment, the master database can also be retrieved from a remote server based on requirement.

[0031] In an embodiment, the inventory database **204** is created by copying information from the master database **202** based on input received from the input device **102**. For example, when the system **100** is newly adopted by a physical store, only master database **202** will be present in the memory unit **104**. Thereafter, as products in the physical store are scanned using the input device **102**, for example, as part of the sales process, the information extracted about the product by the input device **102** is used by the processing unit **106** to

check for corresponding information in the master database **202**. Once the product information is located in the master database **202**, at least a part of the information, such as product details and pricing, is copied to the inventory database **204**, thereby creating an inventory database **204**.

[0032] In an embodiment, if product details of a scanned product are not available in the master database **202**, then an operator in the physical store can add product information to the system **100**. The product information is stored in the inventory database **204**. Additionally, in an embodiment, such product information is stored in the master database **202**. Additionally, such product information is communicated to a remote server, for example, by using communication protocol, such as internet communication protocol. The remote server, in an embodiment, populates the new product information to systems **100** located in different physical stores.

[0033] In an embodiment, the information stored in the inventory database **204** can be, for example, product name, brand name and price of the product. The inventory database **204** comprises information associated with products present in the physical store.

[0034] In an embodiment, the processing unit **106** is configured to create a virtual store wherein the virtual store is associated with the physical store.

[0035] In an embodiment, the information about products present in the inventory database 204 is used to create a virtual store. In the virtual store, the products are arranged according to predetermined logic, such as, grouping into categories based on the brand or functionality of the products, among others, and enabling navigation through such categories. The virtual store is accessed at least within the physical store, for example, by hosting the virtual store in the device **110**.

[0036] In an embodiment, the processing unit **106** is further configured to create a product display schedule based on the inputs received from the input device **102**. **FIG. 3** is an exemplary display **300** of products as per a product display schedule, in accordance with an embodiment.

[0037] In an embodiment, the product display schedule is dynamic in nature, and is based on the products scanned on behalf of the customers.

[0038] In another embodiment, the product display schedule is created based on availability of products in the physical store.

[0039] In an embodiment, the processing unit **106** is configured to create the product display schedule by considering past purchase history of one or more customers for whom products are currently being scanned.

[0040] In another embodiment, the processing unit **106** is configured to create the product display schedule by considering past purchase history of customers who shop at the physical store.

[0041] In another embodiment, the processing unit **106** is configured to create the product display schedule based on the current shopping baskets of customers at the store for whom the products are being scanned.

[0042] In another embodiment, the processing unit **106** is configured to create the product display schedule for products correlated in functionality with the products that are currently being scanned.

[0043] In yet another embodiment, the processing unit **106** is configured to create the product display schedule by considering purchase trends of customers in a locality where the physical store is located.

[0044] In an embodiment, the processing unit **106** is configured to create the product display schedule by considering relative profitability obtained by selling products present in the physical store.

[0045] In an embodiment, the processing unit **106** is configured to create the dynamic planogram **300** by considering stock quantity and time elapsed since the products have been present in the physical store.

[0046] In an embodiment, the processing unit **106** is configured to create the dynamic planogram **300** by considering the store's favourite products based on seasons.

[0047] In an embodiment, the processing unit **106** is configured to create the product display schedule by considering offers pushed by brands.

[0048] In an embodiment, the processing unit **106** is configured to create the product display schedule by considering offers pushed by brands on combination of different products.

[0049] In an embodiment, the processing unit **106** is configured to create the product display schedule by considering the forgotten products.

[0050] In an embodiment, the customer's past purchase history is known from the customer's account created at a particular store by using details provided by a customer to the retailer.

[0051] In an embodiment, the details provided by the customer can be customer's name, phone number or address, among others.

[0052] In an embodiment, the processing unit **106** creates the product display schedule based on instructions present in the processing unit **106**.

[0053] In an embodiment, the display unit **108** is an interface between the customer and the retailer for displaying content based on the product display schedule to the customer standing at or in the physical store. **FIG. 4** is an illustration of the display unit **108** displaying the content in accordance with the product display schedule to customers, in accordance with an embodiment.

[0054] In an embodiment, the content being displayed can include one or more of images, videos and animations. It shall be noted that audio and text are construed to be part of images, videos and animations.

[0055] In an embodiment, the content or at least a part of the content changes over a random or predefined duration based on the product display schedule.

[0056] In an embodiment, each of the images and videos are displayed for a random or predefined duration.

[0057] In an embodiment, the display unit **108** displays multiple still images, multiple videos or animations simultaneously at a time for a random or predefined duration.

[0058] In an embodiment, the display unit **108** displays multiple still images or multiple videos or animations wherein each one of the still image or video shows transition from one image or video or animations to the next image or video or animations while the transition time and display time are defined as per the product display schedule. It shall be noted that, in an embodiment, the placement and size of the content to be displayed are defined as per the product display schedule.

[0059] In an embodiment, the display unit **108** can be located at the billing interface or at any suitable location inside the physical store or outside so as to be visible to the customers.

[0060] In an embodiment, the display unit **108** can be a touch enabled/sensitive display, such as, for example, a tablet screen, a computer monitor, a notebook screen, an LCD television screen among others.

[0061] In an embodiment, the display unit **108** can be a non touch enabled/sensitive display device.

[0062] **FIG. 5A** is an illustration of the system **100** displaying recommendations on display unit **108**, with module **112**, to customers at the billing interface, in accordance with an

embodiment. **FIG. 5B** is an illustration of the system **100** displaying recommendations on display unit **108**, with module **110**, to customers at the billing interface, in accordance with an embodiment.

[0063] **FIG. 6** is an illustration showing the physical store using the processing unit **106** hosting the memory unit **104** and the display unit **108**, in accordance with an embodiment.

[0064] In an embodiment, the system includes a memory unit. The memory unit comprises an inventory database, wherein the inventory database comprises information associated with products in the physical store. The memory unit further comprises a product display schedule and content to be displayed as per the schedule. The processing unit fetches content from the memory unit and transmits the content for display as per the schedule. The display unit receives input from the processing unit and display content.

III. CONCLUSION

[0065] Embodiment enables physical store owners to display products to customers effectively, without increasing the floor area of the physical store.

[0066] Embodiment enables physical store owners to display products based on the customers currently shopping at the physical store.

[0067] Embodiments enable efficient management of a physical store by incorporating a product display schedule to provide recommendations to customers. The efficient recommendations promote brands in a physical store thereby improving the sales of the store.

[0068] It shall be noted that the processes described above is described as sequence of steps, this was done solely for the sake of illustration. Accordingly, it is contemplated that some steps may be added, some steps may be omitted, the order of the steps may be re-arranged, or some steps may be performed simultaneously.

[0069] The example embodiments described herein may be implemented in an operating environment comprising software installed on a computer, in hardware, or in a combination of software and hardware.

[0070] Although embodiments have been described with reference to specific example embodiments, it will be evident that various modifications and changes may be made to these embodiments without departing from the broader spirit and scope of the system and method

described herein. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

[0071] Many alterations and modifications of the present invention will no doubt become apparent to a person of ordinary skill in the art after having read the foregoing description. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation. It is to be understood that the description above contains many specifications, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the personally preferred embodiments of this invention. Thus the scope of the invention should be determined by the appended claims and their legal equivalents rather than by the examples given.

CLAIMS

We claim:

1. A system for dynamically presenting visual information to consumers shopping at a physical store, the system comprising:

at least one input device configured to extract information associated with products in the physical store;

a memory unit comprising an inventory database, wherein the inventory database comprises information associated with products in the physical store;

a processing unit configured to:

receive information from the input device; and

create a product display schedule using information received from the at least one input device;

at least one display unit displaying information as per the product display schedule.

2. The system according to claim 1, wherein the at least one input device is located within the physical store.

3. The system according to claim 1, wherein multiple input devices are configured to send input to the processing unit.

4. The system according to claim 3, wherein the processing unit is configured to create the product display schedule at least based on the input received from the input devices or input retrieved from a remote server.

5. The system according to claim 1, wherein the processing unit is configured to create the product display schedule based on products scanned by one or more input devices, wherein the products are being processed on behalf of one or more customers.

6. The system according to claim 1, wherein the processing unit is further configured to create a virtual store of products available in the physical store, wherein the virtual store is accessed at least within the physical store.

7. The system according to claim 1, wherein the processing unit is configured to create the product display schedule by considering past purchase history of one or more customers for whom information about products are being extracted.

8. The system according to claim 1, wherein the processing unit is configured to create the product display schedule by considering past purchase history of customers who shop at the physical store.

9. The system according to claim 1, wherein the processing unit is configured to create the product display schedule by considering purchase trends of customers in a locality where the physical store is located.

10. The system according to claim 1, wherein the processing unit is configured to create the product display schedule by considering relative profitability obtained by selling products present in the physical store.

11. The system according to claim 1, wherein the processing unit is configured to create the product display schedule by considering stock quantity and time elapsed since the products have been present in the physical store.

12. The system according to claim 1, wherein the product display schedule comprises at least one of still image and video corresponding to one or more products.

13. The system according to claim 12, wherein each of the images and videos in the product display schedule are displayed for a random or predefined duration.

14. The system according to claim 1, wherein the display unit is at least one of tablet screen, computer monitor, notebook screen, LCD monitor and overhead projector.

15. The system according to claim 1, wherein the memory unit further comprises a master database, wherein the master database comprises information corresponding to products that can be sold in a physical store, wherein the inventory database is created by copying information from the master database to the inventory database based on input received from the input device.

16. The system according to claim 1, wherein the input device is at least one of point of sale scanner, optical character recognition device, camera or RFID scanner.

17. A system for managing a physical store, the system comprising:

a memory unit, wherein the memory unit comprises:

an inventory database, wherein the inventory database comprises information associated with products in the physical store; and

a product display schedule and content to be displayed as per the schedule;

a processing unit configured to:

fetch content from the memory unit;

transmit content for display as per the schedule; and

a display unit configured to receive input from the processing unit and display content.