Disclosed herein are systems and methods for applying a referral credit to an entity based on a geographic location of a computing device. According to an aspect, a method may include receiving a product identifier and a geographic location identifier of a computing device. The method may also include determining an interface with an online retailer server based on the product identifier. The method may also include applying a referral credit to an entity account associated with the geographic location identifier in response to the determined interface.
RECEIVE A PRODUCT IDENTIFIER AND A GEOGRAPHIC LOCATION IDENTIFIER OF A COMPUTING DEVICE

DETERMINE AN INTERFACE WITH AN ONLINE RETAILER SERVER BASED ON THE PRODUCT IDENTIFIER

APPLY A REFERRAL CREDIT TO AN ENTITY ACCOUNT ASSOCIATED WITH THE GEOGRAPHIC LOCATION IDENTIFIER

FIG. 2
DETERMINE PRODUCT IDENTIFIER OF A BOOK VIA RFID SCAN 300

RECEIVE USER INPUT FOR PURCHASING THE BOOK 302

DETERMINE CURRENT GEOGRAPHIC LOCATION 304

COMMUNICATE PRODUCT IDENTIFIER AND GEOGRAPHIC LOCATION IDENTIFIER OF CURRENT GEOGRAPHIC LOCATION TO LOCATION-BASED REDIRECTOR SERVER 306

MAP GEOGRAPHIC LOCATION IDENTIFIER TO A BUSINESS ENTITY ASSOCIATED WITH THE GEOGRAPHIC LOCATION IDENTIFIER 308

DETERMINE WHETHER BUSINESS ENTITY CAN PROCESS PURCHASE ORDER FOR THE PRODUCT 310

NO

SEND PURCHASE ORDER TO GENERIC SERVICE FOR PURCHASE OF THE BOOK 312

YES

SEND PURCHASE ORDER TO GENERIC SERVICE FOR PURCHASE OF THE BOOK VIA THE BUSINESS ENTITY 318

APPLY CREDIT TO BUSINESS ENTITY ACCOUNT 322

DETERMINE WHETHER BUSINESS ENTITY CAN PROCESS PURCHASE ORDER FOR THE PRODUCT 310

NO

SEND PURCHASE ORDER TO AFFILIATE ENTITY FOR PURCHASE OF THE BOOK 320

IMPLEMENT PURCHASE TRANSACTION FOR PURCHASE OF THE PRODUCT 314

FIG. 3
DETERMINE PRODUCT IDENTIFIER OF BOOK VIA RFID SCAN

DETERMINE CURRENT GEOGRAPHIC LOCATION

STORE PRODUCT IDENTIFIER OF BOOK AND GEOGRAPHIC LOCATION IDENTIFIER OF GEOGRAPHIC LOCATION

RECEIVE USER INPUT FOR PURCHASING BOOK

COMMUNICATE PRODUCT IDENTIFIER AND GEOGRAPHIC LOCATION IDENTIFIER TO LOCATION-BASED REDIRECTOR SERVER

MAP GEOGRAPHIC LOCATION IDENTIFIER TO A BUSINESS ENTITY ASSOCIATED WITH GEOGRAPHIC LOCATION

BUSINESS ENTITY FOUND?

SEND PURCHASE ORDER TO GENERIC SERVICE FOR PURCHASE OF THE BOOK

SEND PURCHASE ORDER TO GENERIC SERVICE FOR PURCHASE OF THE BOOK VIA THE BUSINESS ENTITY

IMPLEMENT PURCHASE TRANSACTION FOR PURCHASE OF THE PRODUCT

BUSINESS ENTITY CAN PROCESS PURCHASE ORDER FOR THE PRODUCT?

SEND PURCHASE ORDER TO AFFILIATE ENTITY FOR PURCHASE OF THE BOOK

APPLY CREDIT TO BUSINESS ENTITY ACCOUNT

FIG. 4
FIG. 5
FIG. 7
FIG. 8
SYSTEMS AND METHODS FOR APPLYING A REFERRAL CREDIT TO AN ENTITY ACCOUNT BASED ON A GEOGRAPHIC LOCATION OF A COMPUTING DEVICE

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. provisional patent application No. 61/376,321, filed Aug. 24, 2010, the content of which is hereby incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to systems and methods for applying a referral credit to an account.

BACKGROUND

[0003] Electronic commerce, also known as e-commerce, includes the buying and selling of products and services over communications networks such as the Internet. A consumer may conduct such electronic transactions by accessing a website or online store operated by a business often referred to as an online retailer. A large percentage of electronic commerce is conducted entirely electronically for certain items, such as music in MP3 format, which can be downloaded from a server via the Internet. Also, much electronic commerce involves the transportation of physical products to a purchaser in some way. Example products sold via electronic commerce include books, compact discs, DVDs, and various media content.

[0004] Many online retailers also operate a physical, “bricks-and-mortar” retail store in which customers can physically shop and browse products. On the other hand, many retailers, such as independent book stores or electronic stores, only provide consumers with a physical retail store within which consumers may browse and purchase products. In many instances, consumers may only browse for products at the physical retail store without purchasing products, while later purchase the products via an online store. In these instances, the owners of the physical retail stores may be left without compensation when they assisted with the sale by providing a physical environment for browsing products. For at least this reason, it is desired to provide a system capable of applying a credit to an account of an owner of a physical retail store when a consumer visits the store and subsequently purchases products online.

SUMMARY

[0005] This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

[0006] Disclosed herein are systems and methods for applying a referral credit to an entity account based on a geographic location of a computing device. According to an aspect, a method may include receiving a product identifier and a geographic location identifier of a computing device. For example, a mobile computing device, such as a mobile phone, may be configured to capture an image of a product and determine a product identifier based on the image. The method may also include determining an interface with an online retailer server based on the product identifier. For example, a mobile computing device may be used to purchase the product from the online retailer. The method may also include applying a referral credit to an entity account associated with a geographic location identifier in response to the determined interface. For example, a retailer at the geographic location may be credited a predetermined amount by the online retailer when the identified product is purchased from the online retailer.

[0007] According to another aspect, a method for applying a referral credit to an entity account based on a geographic location of a computing device may include receiving a geographic location identifier of a computing device. For example, identification of a geographic location of a computing device may be determined based on a coordinate or communication from a communications network that identifies the geographic location. The method may also include determining that the geographic location identifier is associated with an entity account and a product identifier. Further, the method may include determining an interface with an online retailer server via the computing device based on the product identifier. For example, a mobile computing device may be used to purchase the product from the online retailer. The method may also include applying a referral credit to the entity account in response to the determined interface. For example, a retailer at the geographic location may be credited a predetermined amount by the online retailer when the identified product is purchased from the online retailer.

[0008] According to another aspect, a method for applying a referral credit to an entity account based on a geographic location of a computing device may include receiving a geographic location identifier of a computing device. The method may also include determining that the geographic location identifier is associated with an entity account and a product identifier. Further, the method may include determining an interface with an online retailer server via the computing device based on the product identifier. The method may also include applying a referral credit to the entity account in response to the determined interface.

[0009] According to another aspect, a method for applying a referral credit to an entity account based on a geographic location of a computing device may include determining a business entity associated with a geographic location identifier. The method may also include communicating the geographic location identifier and identification of a computing device to an online retailer server for applying a referral credit to an entity account associated with the geographic location identifier. Further, the step of determining may include mapping the geographic location identifier to the business entity associated with the geographic location identifier. The method may also include receiving a product identifier from the computing device; and communicating the product identifier to the online retailer server. The method may also include communicating a purchase order to the online retailer server for purchase of a product associated with the product identifier.

[0010] According to another aspect, a method for applying a referral credit to an entity account based on a geographic location of a computing device may include receiving a geographic location identifier and identification of a computing device. Further, the method may include applying a referral credit to an entity account associated with the geographic location identifier. The method may also include receiving a product identifier; receiving a purchase order for purchase of a product associated with a product identifier; and applying
the referral credit to the entity associated with the geographic location identifier in response to receipt of the purchase order.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The foregoing summary, as well as the following detailed description of preferred embodiments, is better understood when read in conjunction with the appended drawings. For the purposes of illustration, there is shown in the drawings exemplary embodiments; however, the present disclosure is not limited to the specific methods and instrumentalities disclosed. In the drawings:

[0012] FIG. 1 illustrates a schematic diagram of a system for applying a referral credit to an entity account based on a geographic location of a computing device in accordance with embodiments of the present disclosure;

[0013] FIG. 2 illustrates a flow chart of an exemplary method for applying a referral credit to an entity account based on a geographic location of a computing device in accordance with embodiments of the present disclosure;

[0014] FIG. 3 illustrates a flow chart of another exemplary method for applying a referral credit to an entity account based on a geographic location of a computing device in accordance with embodiments of the present disclosure;

[0015] FIG. 4 illustrates a flow chart of an exemplary method for applying a referral credit to an entity account based on a historical location of a computing device in accordance with embodiments of the present disclosure;

[0016] FIG. 5 illustrates a message flow diagram of an exemplary operation of the system shown in FIG. 1 in accordance with embodiments of the present disclosure;

[0017] FIG. 6 is a block diagram of the computing device shown in FIG. 1 according to embodiments of the present disclosure;

[0018] FIG. 7 is a block diagram of the location-based redirector server shown in FIG. 1 according to embodiments of the present disclosure; and

[0019] FIG. 8 is a block diagram of an online retailer server shown in FIG. 1 according to embodiments of the present disclosure.

DETAILED DESCRIPTION

[0020] The present disclosure is described with specificity to meet statutory requirements. However, the description itself is not intended to limit the scope of this patent. Rather, the inventors have contemplated that the claimed subject matter might also be embodied in other ways, to include different steps or elements similar to the ones described in this document, in conjunction with other present or future technologies. Moreover, although the term “step” may be used herein to denote different aspects of methods employed, the term should not be interpreted as implying any particular order among or between various steps herein disclosed unless and except when the order of individual steps is explicitly described.

[0021] Embodiments of the present disclosure enable one or more computing devices to receive a product identifier and a geographic location identifier of a computing device, to determine an interface with an online retailer server based on the product identifier, and to apply a referral credit to an entity account associated with the geographic location identifier in response to the determined interface. For example, a mobile computing device, such as a smart phone having a camera and a GPS receiver, may be used to capture an image of a barcode on a product at a retail store. In response to capturing the barcode image, the mobile computing device may be configured to suitably process the image to determine the barcode’s digits. Further, the GPS receiver of the mobile computing device may determine coordinates of the computing device when the barcode image is captured. Subsequently, the computing device may interface with a server for purchase of the product via a communications network such as the Internet. The computing device may also communicate the geographic location identifier to the server. In response to receipt of the product identifier and geographic location identifier, the server may apply a referral credit to an entity account associated with the geographic location identifier. For example, a financial account of a book store where a product was scanned by the computing device may be compensated by an online retailer that sold the product. In this way, a retailer where the product was scannable can be credited by the online retailer when the identified product is purchased from the online retailer.

[0022] As referred to herein, the term “computing device” should be broadly construed. It can include any type of device capable of receiving a product identifier and geographic location identifier. For example, the computing device may be a smart phone configured to read, scan, or otherwise determine a product identifier (e.g., a UPC on a product) of a product. For example, a computing device may be a mobile device such as, for example, but not limited to, a smart phone, a cell phone, a pager, a personal digital assistant (PDA, e.g., with GPRS NIC), a mobile computer with a smart phone client, or the like. A computing device can also include any type of conventional computer, for example, a desktop computer or a laptop computer. A typical mobile computing device is a wireless data access-enabled device (e.g., an iPhone® smartphone, a BLACKBERRY® smartphone, a NEXUS ONE™ smartphone, an iPad® device, or the like) that is capable of sending and receiving data in a wireless manner using protocols like the Internet Protocol, or IP, and the wireless application protocol, or WAP. This allows users to access information via wireless devices, such as smartphones, mobile phones, pagers, two-way radios, communicators, and the like. Wireless data access is supported by many wireless networks, including, but not limited to, CDMA, CDMA2000, 1xRTT, EV-DO, WCDMA, HSPA, LTE, WiMAX, and Wi-Fi. Typically, these devices use graphical displays and can access the Internet (or other communications network) on so-called mini- or micro-browsers, which are web browsers with small file sizes that can accommodate the reduced memory constraints of wireless networks. In a representative embodiment, the mobile device is a cellular telephone or smartphone that operates over GPRS (General Packet Radio Services), which is a data technology for GSM networks. In addition to a conventional voice communication, a given mobile device can communicate with another such device via many different types of message transfer techniques, including SMS (short message service), enhanced SMS (EMS), multimedia message (MMS), email, WAP, paging, or other known or later-developed wireless data formats. Although many of the examples provided herein are implemented on smartphone, the examples may similarly be implemented on any suitable electronic device, such as a computer.
As referred to herein, the term “product identifier” may be any suitable identifier for identifying a product or item of merchandise. An example product identifier may be an electronic product code (EPC) that provides a unique identity for a physical object. In an example, a product identifier may be encoded into a UPC or stored as data in an RFID tag. In another example, a product identifier may be an image of a product, its packaging, or portions thereof. In an example, the product identifier may include one or more of a box packaging of the product, cover art of the product, and the like.

As referred to herein, the term “geographic location identifier” may be any suitable identifier for identifying a current or previous geographic location of a computing device. For example, a computing device may include a GPS receiver or any other suitable equipment or component capable of determining a geographic location of the computing device. In an example, the GPS receiver may receive satellite signals for use in determining the geographic location. Further, the GPS receiver may output a signal indicating the geographic location, such as coordinates of the geographic location. Such coordinates may indicate a current geographic location of the computing device. A geographic location identifier may be suitably stored in a memory of the computing device. In addition, the computing device may store a time when the device was located at the geographic location identified by the geographic location identifier.

As referred to herein, the term “entity account” may be a financial account associated with a person or business entity. For example, an entity account may be a bank account with a banking institution.

As referred to herein, the term “interface” is generally an action that may be implemented by a computing device for interacting with another computing device. For example, computing devices may interface with one another to communicate or share data over a suitable communications network, such as, but not limited to, the Internet, a local area network (LAN), a wired network, or wireless network.

As referred to herein, the term “user interface” is generally a system by which users interact with a computing device. A user interface can include an input for allowing users to manipulate a computing device, and can include an output for allowing the system to present information and/or data, indicate the effects of the user’s manipulation, etc. An example of a user interface on a computing device includes a graphical user interface (GUI) that allows users to interact with programs or applications in more ways than typing. A GUI typically can offer display objects, and visual indicators, as opposed to text-based interfaces, typed command labels or text navigation to represent information and actions available to a user. For example, a user interface can be a display window or display object, which is selectable by a user of a computing device for interaction. The display object can be displayed on a display screen of a computing device and can be selected by and interacted with by a user using the user interface. In an example, the display of the computing device can be a touch screen, which can display the display icon. The user can depress the area of the display screen where the display icon is displayed for selecting the display icon. In another example, the user can use any other suitable user interface of a computing device, such as a keypad, to select the display icon or display object. For example, the user can use a track ball or arrow keys for moving a cursor to highlight and select the display object.

Operating environments in which embodiments of the present disclosure may be implemented are also well-known. In a representative embodiment, a mobile electronic device, such as an e-book reader, is connectable (for example, via WAP) to a transmission functionality that varies depending on implementation. Thus, for example, where the operating environment is a wide area wireless network (e.g., a 2.5G network, a 3G network, or a 4G network), the transmission functionality comprises one or more components such as a mobile switching center (MSC) (an enhanced ISDN switch that is responsible for call handling of mobile subscribers), a visitor location register (VLR) (an intelligent database that stores on a temporary basis data required to handle calls set up or received by mobile devices registered with the VLR), a home location register (HLR) (an intelligent database responsible for management of a mobile subscriber’s records), one or more base stations (which provide radio coverage with a cell), a base station controller (BSC) (a switch that acts as a local concentrator of traffic and provides local switching to effect handover between base stations), and a packet control unit (PCU) (a device that separates data traffic coming from a mobile device). The HLR also controls certain services associated with incoming calls. Of course, embodiments in accordance with the present disclosure may be implemented in other and next-generation mobile networks and devices as well. The mobile device is the physical equipment used by the end user, typically a subscriber to the wireless network. Typically, a mobile device is a 2.5G-compliant device, 3G-compliant device, or 4G-compliant device that includes a subscriber identity module (SIM), which is a smart card that carries subscriber-specific information, mobile equipment (e.g., radio and associated signal processing devices), a user interface (or a man-machine interface (MMI)), and one or more interfaces to external devices (e.g., computers, PDAs, and the like). The electronic device may also include a memory or data store.

The presently disclosed subject matter is now described in more detail. For example, FIG. 1 illustrates a schematic diagram of a system 100 for applying a referral credit to an entity account based on a geographic location of a computing device. Referring to FIG. 1, the system 100 includes a mobile computing device 102 and an online retailer server 104. The computing device 102 may be any type of computing device capable of determining a product identifier of a product. In an embodiment for determining a product identifier, the computing device 102 may include a camera 106 configured to capture an image of a product 108 such as, but not limited to, a book, a compact disc, a DVD, an electronic product, or any other product that may be purchased at a retail store. The computing device 102 may include a produce purchase manager 110 configured to suitably process the captured image of the product 108 for identifying the product 108. In another example of determining a product identifier, the camera 106 may capture an image of a product affixed to the product or its packaging. In this example, the product purchase manager 110 may determine a product identifier associated with the captured image, such as digits of the UPC. In another example, the captured image of the product 108 may include distinguishing features of the product such as, but not limited to, colors, dimensions, shape, text (e.g., numbers, words, lettering, and the like), and other distinguishing characteristics that can identify the product. In this example, the product purchase manager 110 may assign a product identifier to the captured
image of the product 108 based on the features shown in the captured image. The product purchase manager 110 may store the product identifier in a data store 112. In an example, a user of the computing device 102 may interact with a user interface 114 for controlling the camera 106 to capture an image of a portion or all of the product 108.

In another embodiment, the computing device 102 may determine a product identifier of a product by reading a radio frequency identification (RFID) tag, a near field communication (NFC), a wireless communication device, an optical machine-readable representation, or the like. For example, a computing device, such as the computing device 102, may include equipment or a component capable of scanning or otherwise reading an RFID tag affixed to a product. The data read from the RFID tag may include a product identifier for the product. The product purchase manager 110 may store the product identifier in the data store 112. In an example, a user of the computing device 102 may interact with the user interface 114 for controlling reader equipment of the computing device 102 to read an RFID tag of the product 108.

The computing device 102 may also be capable of determining a geographic location identifier that identifies a geographic location of the computing device 102. For example, the computing device 102 may include a GPS receiver 116 capable of determining current coordinates of the computing device 102. The GPS receiver 116 may output the coordinates to the product purchase manager 110 for use in applying a referral credit to an entity account in accordance with embodiments of the present disclosure. For example, the coordinates may identify a location within a geographic boundary 118 that defines the interior of a physical retail store such as, but not limited to, a book store. In response to the product purchase manager 110 determining or otherwise receiving a product identifier as disclosed herein, the product purchase manager 110 may determine the current coordinates of the computing device 102 and store the current coordinates in the data store 112. Subsequently, as disclosed in further detail herein, the computing device 102 may interface with the online retail server 104 for purchase of a product associated with the product identifier. In response to such an interface, a referral credit may be applied to a financial account of the retail store located where the product identifier was determined or otherwise received by the product purchase manager 110 as disclosed in further detail herein.

According to embodiments of the present disclosure, a user of the computing device 102 may use an application (often referred to as an “app”) residing on the computing device 102 to interact with the product purchase manager 110 via the user interface 114 for implementing the functions according to embodiments of the present disclosure. The application may reside on the computing device 102 and may be part of the product purchase manager 110. The user may, for example, input commands into the user interface 114 for capturing a product image or for reading an RFID tag, an NFC tag, a wireless communication device, an optical machine-readable representation of a product identifier, or the like. In another example, a user may input the product identifier by use of the user interface 114. Further, for example, the user may input commands into the user interface 114 for interfacing with an online retailer server for purchase of a product. The application may have been downloaded from a web server and installed on the computing device 102 in any suitable manner. The application may be downloaded to another machine (such as the computing device user’s PC) and then transferred to the computing device over a medium such as a BLUETOOTH® connection. In an example, the application can enable the computing device 102 with one or more of the features according to embodiments of the present disclosure.

In accordance with embodiments of the present disclosure, FIG. 2 illustrates a flowchart of an exemplary method for applying a referral credit to an entity account based on a geographic location of a computing device. The method of FIG. 2 is described with respect to the example system 100 shown in FIG. 1, although the method may be implemented by any suitable system or computing device. The steps of FIG. 2 may be implemented entirely by the product purchase manager 110 or in part by the product purchase manager 110 together with the online retailer server 104 shown in FIG. 1. The product purchase manager 110 may be implemented by software, hardware, firmware, or combinations thereof.

Referring to FIG. 2, the method includes receiving a product identifier and a geographic location identifier of a computing device (step 200). For example, a user of the computing device 102 shown in FIG. 1 may be browsing books and other products in a book store or other retail store located within a geographic location defined by the geographic boundary 118. The user may find a book that he or she is interested in purchasing, and may then interact with the user interface 114 of the computing device 102 for scanning an RFID tag affixed to the book. The scan may provide a product identifier for the book. In response to the scan, the product purchase manager 110 may also determine a geographic location identifier of the current geographic location of the computing device 102, such as the current coordinates of the computing device 102 output by the GPS receiver 116.

At step 202 of FIG. 2, the method includes determining an interface with an online retailer server based on the product identifier. Continuing the aforementioned example associated with step 200, the product purchase manager 110 may control the user interface 114 to display or otherwise present an interface for purchasing the product in response to receipt or identification of the product identifier. In an example, the user interface 114 may display an icon (e.g., a “BUY” button) for selection to initiate purchase of the product. Subsequently, the user may select the icon by depressing an area of a display screen where the icon is displayed. In response to selection of the icon, the product purchase manager 110 may initiate communication with the online retailer server 104 via the Internet 120 or any other suitable communications network for interfacing with the online retailer server operated by an online retailer. In an example, the interfacing may include accessing a website operated by the online retailer. In another example, the interfacing may include using a mobile application of the computing device 102 to establish a mobile session with the online retailer server 104. The product purchase manager 110 may use a network interface 122 of the computing device 102 for communicating with the online retailer server 104 via the Internet 120 or other suitable communications network. The network interface 122 may communicate the product identifier to the online retailer server 104. In an example, the product purchase manager 110 may determine an interface with the online retailer server 104 based on communication of the product identifier to the online retailer server 104. In another example, the product purchase manager 110 may determine
an interface with the online retailer server 104 based on a purchase transaction between the computing device 102 and the online retailer server 104 for a product associated with the product identifier. At step 204 of FIG. 2, the method includes applying a referral credit to an entity account associated with the geographic location identifier. For example, the online retailer server 104 may be controlled by the computing device 102 to apply a referral credit to a financial account of the retail store located within the geographic boundary 118. The product purchase manager 110 may communicate to the online retailer server 104 the geographic location identifier of the geographic boundary 118. In response to receipt of the geographic location identifier, the online retailer server 104 may apply a referral credit to the retail store. For example, in response to the purchase of a product associated with the product identifier and receipt of the geographic location identifier, the online retailer server 104 may determine that the retail store is associated with the geographic location identifier and may determine an amount for crediting a financial account of the retail store. In this way, a retailer where the product was scanned can be credited by the online retailer when the identified product is purchased from the online retailer.

FIG. 3 illustrates a flow chart of another exemplary method for applying a referral credit to an entity account based on a geographic location of a computing device in accordance with embodiments of the present disclosure. The method of FIG. 3 is described with respect to the example system 100 shown in FIG. 1, although the method may be implemented by any suitable system or computing device. The steps of FIG. 3 may be implemented entirely by the product purchase manager 110 or in part by the product purchase manager 110 together with the online retailer server 104 shown in FIG. 1. The product purchase manager 110 may be implemented by software, hardware, firmware, or combinations thereof. It is noted that although this example involves the purchase of a book, this example may also be applicable to any other type of product or multiple products.

Referring to FIG. 3, the method includes determining a product identifier of a book via an RFID scan (step 300). For example, the computing device 102 may include equipment or a component capable of scanning an RFID tag affixed to the product 108. In this example, the user of the computing device 102 may suitably direct the scanning equipment towards the RFID tag and enter user input to control the computing device 102 to activate the scanning equipment for scanning the RFID tag. Data read from the RFID tag may include a product identifier of the product 108. The scanning equipment may output the product identifier to the product purchase manager 110. The product purchase manager 110 may store the product identifier in the data store 112. An application of the computing device 102 may control the user interface 114 to display or otherwise present to the user an interface by which the user can control the RFID scanning equipment to scan an RFID tag.

The method of FIG. 3 includes receiving user input for purchasing the book (step 302). Continuing the aforementioned example associated with step 300, the user of the computing device 102 may enter input via the user interface 114 for initiating the purchase of the book. An application residing on the computing device 102 may control the user interface 114 for receipt of the input. For example, in response to receipt of the product identifier read from the RFID tag affixed to the product 108, the product purchase manager 110 may present to the user an interface for purchasing a product associated with the product identifier via an online retailer.

A product associated with the product identifier may be another copy or version of the product 108. For example, the product 108 may be a book in the book store located within the geographic boundary 118, and the purchase may be for another copy of the book through an online retailer. After purchase, the online retailer may ship the copy of the book to a mailing address of the user. In another example, another version of the product 108 may be an e-book version of the book, which may be purchased for download to the computing device 102 from the online retailer. Alternative to the purchase of a book, another copy or version of any other type of product may be similarly purchased from an online retailer.

The method of FIG. 3 includes determining a current geographic location of a computing device (step 304). Continuing the aforementioned example associated with the steps of FIG. 3, the product purchase manager 110 may determine a current geographic location of the computing device 102. For example, the GPS receiver 116 may output a signal indicating the current coordinates of the computing device 102. The product purchase manager 110 may receive the current coordinates and may store the current coordinates in the data store 112. In another example, an application residing on the computing device 102 may suitably determine the current geographic location of the computing device 102. The product purchase manager 110 may determine the current geographic location in response to receipt of user input for purchasing the book.

In other embodiments for determining a geographic location of a computing device, the computing device may determine its geographic location based on a communication from a communications network. For example, the computing device 102 may be in communication with a communications network such as a wireless network. In an example, the address of the wireless network may be received and used for determining a geographic location by use of a geo-location mapping service.

The method of FIG. 3 includes communicating the product identifier and geographic location identifier of the current geographic location to a location-based redirector server (step 306). Continuing the aforementioned example associated with the steps of FIG. 3, the product purchase manager 110 may control communication of the product identifier and geographic location identifier to a location-based redirector server 124. The server 124 may include a network interface 126 for receiving the identifiers via the Internet 120 or any other suitable network. The data store 112 may include an address of the location-based redirector server 124 for use by the product purchase manager 110 in communicating the identifiers. The product purchase manager 110 may control the network interface 122 to communicate the identifiers via a suitable communications network, such as the Internet 120. The product purchase manager 110 may communicate the product identifier and geographic location identifier in response to receipt of user input for purchasing the book.

The method of FIG. 3 includes mapping the geographic location identifier to a business entity associated with the geographic location identifier (step 308). For example, the location-based redirector server 124 may include a data mapping table 128 that associates geographic identifiers, such as
coordinates, with business entities. For example, the entity account may be associated with a business entity identified as having property rights to the geographic location identified by the geographic location identifier. A redirector manager 130 of the server 124 may use a received geographic location identifier to look up an identifier for a business entity. By use of the data mapping table 128, the redirector manager 130 may determine a business entity associated with a geographic identifier. The business entity may own the book store located at the coordinates.

[0045] The method of FIG. 3 includes determining whether a business entity is found (step 310). Continuing the aforementioned example associated with the steps of FIG. 3, the redirector manager 130 determines whether a business entity associated with the geographic identifier can be found in the table 128.

[0046] If a business is not found at step 310, the method of FIG. 3 proceeds to step 312 where the method includes sending a purchase order to a generic service for purchase of the book. Continuing the aforementioned examples, the redirector manager 130 may control a process for redirecting the book purchase request to an online retailer server, such as the online retailer server 104 shown in FIG. 1. For example, the redirector manager 130 may control the network interface 126 to communicate the product identifier, geographic location identifier, and/or the identification of the computing device 102 to the server 104. This information may be used by the server 104 for contacting the computing device 102 about the purchase request.

[0047] Subsequent to step 312, the method of FIG. 3 includes implementing a purchase transaction for purchase of the product (step 314). Continuing the aforementioned examples, the computing device 102 and the online retailer server 104 can communicate for implementing a purchase transaction for a book identified by the product identifier. The purchase transaction can include an exchange of financial information, product specifications, other purchase information, and the like for completing a purchase transaction for the product. Upon completion of the purchase transaction, the product may be suitably sent to the user of the computing device 102. For example, if the product is an e-book or other form of electronically-downloadable media, the online retailer server 104 or another server may communicate the media to the computing device 102 or another computing device. In another example, if the product is tangible such as a paper copy of a book, the product may be shipped to the user.

[0048] Now returning to step 310, if a business entity is found, the method of FIG. 3 proceeds to step 316 where the method includes determining whether the business entity can process the purchase order. Continuing the aforementioned examples, the redirector manager 130 can perform a lookup in the table 128 to determine whether the business entity associated with the geographic boundary 118 can process the purchase order. For example, the table may include an indicator associated with the geographic identifier for indicating that the business entity can process the purchase order. In an example, the purchase order may be processed for the business entity via a suitable server.

[0049] In response to determining that the business entity can process the purchase order at step 316, the method of FIG. 3 may send the purchase order to a generic service for purchase of the book via the business entity (step 318). For example, the redirector manager 130 may control a process for redirecting the book purchase request to a server through which the book can be purchased from the business entity. In an example, the redirector manager 130 may control the network interface 126 to communicate the product identifier, geographic location identifier, and/or the identification of the computing device 102 to the server. This information may be used by the server for contacting the computing device 102 about the purchase request. Subsequently, the method may proceed to step 314 where the computing device 102 and the server can communicate for implementing a purchase transaction for a book identified by the product identifier.

[0050] Returning to step 316, in response to determining that the business entity cannot process the purchase order, the method of FIG. 3 may send the purchase order to an affiliate entity for purchase of the book (step 320). Continuing the aforementioned examples, the redirector manager 130 may control a process for redirecting the book purchase request to the online retailer server 104 through which the book can be purchased from the business entity. In an example, the redirector manager 130 may control the network interface 126 to communicate the product identifier, geographic location identifier, and/or the identification of the computing device 102 to the online retailer server 104. This information may be used by the online retailer server 104 for contacting the computing device 102 about the purchase request.

[0051] The method of FIG. 3 includes applying a credit to the business entity account. For example, the online retailer server 104 may implement a process for applying a referral credit to a financial account of the business entity (step 322). For example, the server 104 may communicate with a server of a financial institution (e.g., a bank) associated with the business entity for paying the business entity for the referral. Information for contacting the server of the financial institution may be stored at the server 104 and suitable associated with the business entity. Alternatively, for example, the contact information may be communicated to the server 104 by the server 124. In an example, a referral credit may be credited to the financial account in a predetermined amount based on the purchase transaction. For example, the amount may be a percentage of the purchase amount of the product. The funds may be suitably transferred from an account of the online retailer that actually sells the product to an account of the business entity associated with the geographic identifier.

[0052] Subsequently, the method may proceed to step 314 where the computing device 102 and the online retailer server 104 can communicate for implementing a purchase transaction for a book identified by the product identifier.

[0053] The online retailer server 104 may include a processor 132 and a data store 134 configured to implement the functions disclosed herein. For example, the processor 132 and data store 134 may be configured for conducting an online purchase transaction. Further, the server 104 may include a network interface 136 configured to communicate with the Internet 120 or another communications network for exchanging information and data with the server 124, the computing device 102, or any other servers or computing devices.

[0054] In accordance with embodiments of the present disclosure, FIG. 4 illustrates a flow chart of an exemplary method for applying a referral credit to an entity account based on a historical location of a computing device. The method of FIG. 4 is described with respect to the example system 100 shown in FIG. 1, although the method may be implemented by any suitable system or computing device. The steps of FIG. 4 may be implemented entirely by the
product purchase manager 110 or in part by the product purchase manager 110 together with the online retailer server 104 shown in FIG. 1. It is noted that although this example involves the purchase of a book, this example may also be applicable to any other type of product or multiple products.

[0055] Referring to FIG. 4, the method includes determining a product identifier of a book via an RFID scan (step 400). In an example, the user of the computing device 102 may suitably direct the scanning equipment towards the RFID tag and enter user input to control the computing device 102 to activate the scanning equipment for scanning the RFID tag. Data read from the RFID tag may include a product identifier of the product 108.

[0056] The method of FIG. 4 includes determining a current geographic location of a computing device (step 402). Continuing the aforementioned example, the product purchase manager 110 may determine a current geographic location of the computing device 102 by use of the GPS receiver 116. Subsequently, the method of FIG. 4 includes storing a product identifier of the book and a geographic location identifier of the geographic location (step 404). For example, the product purchase manager 110 may store the product identifier and the geographic location identifier in the data store 112.

[0057] The method of FIG. 4 includes receiving user input for purchasing the book (step 406). Continuing the aforementioned example, the user of the computing device 102 may enter input via the user interface 114 for initiating the purchase of the book via an application residing on the computing device 102. For example, in response to receipt of the product identifier read from the RFID tag affixed to the product 108, the product purchase manager 110 may present to the user an interface for purchasing a product associated with the product identifier via an online retailer. The user input may be input into the computing device 102 after the user carries the computing device 102 outside of the geographic boundary 118. Thus, the user input for purchasing the book may be received after the user leaves a retail store. Further, user input may be received for purchasing one or more other products either within or outside of the geographic boundary 118.

[0058] The method of FIG. 4 includes communicating the product identifier and geographic location identifier of the current geographic location to a location-based redirector server (step 408). Continuing the aforementioned example, the product purchase manager 110 may control communication of the product identifier and geographic location identifier to the location-based redirector server 124. The server 124 may receive the identifiers via the Internet 120. The product purchase manager 110 may communicate the product identifier and geographic location identifier in response to receipt of user input for purchasing the book.

[0059] The method of FIG. 4 includes mapping the geographic location identifier to a business entity associated with the geographic location identifier (step 410). For example, the data mapping table 128 may associate geographic identifiers, such as coordinates, with business entities. The redirector manager 130 of the server 124 may use a received geographic identifier to look up an identifier for a business entity.

[0060] The method of FIG. 4 includes determining whether a business entity is found (step 412). Continuing the aforementioned example, the redirector manager 130 may determine whether the business entity associated with the geographic identifier can be found in the table 128.

[0061] If a business is not found at step 412, the method of FIG. 4 proceeds to step 414 where the method includes sending a purchase order to a generic service for purchase of the book. Continuing the aforementioned example, the redirector manager 130 may control a process for redirecting the book purchase request to an online retailer server, such as the online retailer server 104 shown in FIG. 1. Subsequent to step 414, the method of FIG. 4 includes implementing a purchase transaction for purchase of the product (step 410).

[0062] Now returning to step 412, if a business entity is found, the method of FIG. 4 proceeds to step 416 where the method includes determining whether the business entity can process the purchase order. Continuing the aforementioned example, the redirector manager 130 can perform a lookup in the table 128 to determine whether the business entity associated with the geographic boundary 118 can process the purchase order.

[0063] In response to determining that the business entity can process the purchase order at step 416, the method of FIG. 4 may send the purchase order to a generic service for purchase of the book via the business entity (step 418). Subsequently, the method may proceed to step 410 where the computing device 102 and the server can communicate for implementing a purchase transaction for a book identified by the product identifier.

[0064] Returning to step 416, in response to determining that the business entity cannot process the purchase order, the method of FIG. 4 may send the purchase order to an affiliate entity for purchase of the book (step 420). Continuing the aforementioned example, the redirector manager 130 may control a process for redirecting the book purchase request to the online retailer server 104 through which the book can be purchased from the business entity.

[0065] The method of FIG. 4 includes applying a credit to the business entity account (step 422). Subsequently, the method may proceed to step 410 where the computing device 102 and the online retailer server 104 can communicate for implementing a purchase transaction for a book identified by the product identifier.

[0066] In accordance with embodiments of the present disclosure, a location-based redirector server, such as the server 124 shown in FIG. 1, may communicate to a computing device, such as the computing device 102, content associated with an entity account in response to receiving a geographic location identifier. For example, in response to receiving a geographic location identifier from the computing device 102, the server 124 may determine entity account information such as retail store information of the entity associated with the geographic location identifier. The server 124 may then communicate the information to the computing device 102. Example content may include advertising information and product information. In response to receipt of the information, the product purchase manager 110 may control the user interface 114 to present the information to a user. Further, for example, the product purchase manager 110 may determine whether the computing device 102 is located outside of the geographic location associated with the geographic location identifier, such as by receipt of coordinates from the GPS receiver 116. In response to determining that the computing device 102 is located outside of the geographic location, the product purchase manager 110 may disable presentation of the content by control of the user interface 114.

[0067] In accordance with embodiments of the present disclosure, a referral credit may be applied to an account of a
In response to receipt of the geographic location identifier, the online retailer server 104 may communicate the geographic location identifier to the server 124 to request a lookup in the table 128. The redirector manager 130 may use the geographic location identifier to look up an identifier for a business entity. If a business entity identifier is found for the geographic location identifier, the redirector manager 130 may control the network interface 126 to communicate the business entity identifier to the server 104. The server 124 may also communicate to the server 104 information for applying a credit to a financial account of the business entity. If a business entity identifier is not found for the geographic location identifier, the redirect manager 130 may control the network interface 126 to communicate a message to the server 104 for indicating that a business entity identifier associated with the geographic location identifier was found. In response to receipt of a business entity identifier, the server 104 may apply a referral credit to the financial account of the business entity identified by the business entity identifier upon purchase of one or more products by the user of the computing device 102 in accordance with the embodiments of the present disclosure. In this way, a referral credit may be applied to an account of the retailer even if a product was not scanned while the user was at the retailer’s store.

In accordance with the embodiments of the present disclosure, a computing device may provide a local e-book discovery function for allowing a user to view local-relevant content associated with a physical retail store. In an example, a user located in a physical retail store may open the computing device 102 within the geographic boundary 118. The product purchase manager 110 may control the user interface 114 to present an interface for browsing books or other products that are available at the retail store or otherwise associated with the retail store. Further, the user interface 114 may provide information about products available at or otherwise associated with the retail store. For example, the product purchase manager 110 may control a display of the computing device 102 to present a home page menu including a shop online store menu. The user interface 114 may also display or otherwise present an option for presenting to the user best sellers of the physical retail store, customer picks of the physical retail store, staff picks of the physical retail store, and the like lists of books or other products relevant to the physical retail store. The server 104 may present to the computing device 102 an online retail environment in which the user may interface with the computing device 102 for browsing products associated with these lists. The product purchase manager 110 may recognize that the computing device 102 is located within the area of the physical retail store, and in response to detecting the location, present this local-relevant content or other social media information to the user. The user may select one of the lists via the user interface 114 for presenting detailed information and purchase information of the products. The user may interact with the user interface 114 for purchasing one or more of the products from an online retailer in accordance with the embodiments of the present disclosure. Upon purchase of one or more products, a financial account of the physical retail store may receive a referral credit from the online retailer in accordance with the embodiments of the present disclosure.

In accordance with the embodiments of the present disclosure, referral credits may be applied to an account of a business entity based on a computing device being located at a particular area of a physical retail store. For example, the product purchase manager 110 may determine a geographic location identifier associated with a current location of the computing device 102. The geographic location identifier may be communicated to the location-based redirector server 124. In response to receipt of the identifier, the redirector manager 130 may recognize that a user is located in a television or electronics area of a physical retail store based on a lookup in the table 128. If the computing device 102 is used to conduct a purchase transaction for a television or other electronics product, a financial account of the physical retail store may be provided a referral credit based on the computing device having been located in the television or electronics area of the physical retail store.

In accordance with the embodiments of the present disclosure, the application of a referral credit may be based on a time when a computing device was located at a geographic location. For example, a product purchase manager of a computing device may determine a geographic location identifier and may receive a product identifier as disclosed herein. Further, the product purchase manager may determine a time when the computing device was located at a geographic location associated with the geographic location identifier. When the computing device leaves the geographic location, the product purchase manager may determine a time period between when the computing device was located at the geographic location identified by the geographic location identifier and when a user interface with an online retailer server was determined. For example, the user interface may be a purchase transaction for a product. Information indicating the time period may be communicated to a location-based redirector server. A redirector manager may apply a referral credit based on the time period. For example, the amount of the referral credit may be reduced the greater the time period. In another example, a referral credit may not be applied if the time period is greater than a predetermined amount.

FIG. 5 illustrates a message flow diagram of an exemplary operation of the system 100 shown in FIG. 1 in accordance with the embodiments of the present disclosure. Referring to FIG. 5, a user may activate the computing device 102 and carry the computing device 102 to within the geographic boundary 118 (step 500). Subsequently, the computing device 102 may scan a product as disclosed herein (step 502). In response to the scan, the computing device 102 may generate a product identifier.

At step 504, the computing device 102 and the online retailer server 104 may initiate a purchase transaction
for a product identified by the scanned product identifier. At step 506, the computing device 102 may communicate to the server 124 a message including the product identifier in response to initiation of the purchase transaction. Further, the computing device 102 may determine a geographic location identifier of the current geographic location and may communicate to the server 124 a message including the geographic location identifier in response to initiation of the purchase transaction (step 508). The identifiers may be communicated to the server 124 in separate messages or in the same message.

[0074] In response to receipt of the geographic location identifier and the product identifier, the server 104 may determine a financial account associated with the geographic location identifier (step 510). For example, the redirect manager 130 may use the geographic location identifier to look up an identifier for a business entity in the table 128. The table 128 may include financial account information of the business entity. Subsequently, the server 124 may communicate to the server 104 the financial account information of the business entity (step 512). The server 104 may then apply a referral credit to the financial account of the business entity (step 514). The referral credit may be applied upon completion of the purchase transaction of step 504.

[0075] FIG. 6 is a block diagram of the computing device 102 shown in FIG. 1 according to embodiments of the present disclosure. Referring to FIG. 6, the computing device 102 may include a controller 600 connected to the data store 112, the product purchase manager 110, the user interface 114, the network interface 122, the camera 106, and the GPS receiver 116 by a bus 602 or similar mechanism. The data store 112 may store geographic location identifiers and product identifiers. The controller 600 may be a microprocessor, digital ASIC, FPGA, or the like. The network interface 136 may be a bus 800 or similar mechanism. The controller may be implemented by software stored in the data store 134 that is executed by the processor 132. The controller may implement one or more functions described herein. The processor 132 may be a microprocessor, digital ASIC, FPGA, or the like. In this example, the processor 132 is a microprocessor. The network interface 136 may be a local wireless interface such as a wireless interface operating according to one of the suite of IEEE 802.11 standards; a mobile communications interface, or the like.

[0078] The various techniques described herein may be implemented with hardware or software or, where appropriate, with a combination of both. Thus, the methods and apparatus of the disclosed embodiments, or certain aspects or portions thereof, may take the form of program code (i.e., instructions) embodied in tangible media, such as floppy diskettes, CD-ROMs, hard drives, or any other machine-readable storage medium, wherein, when the program code is loaded into and executed by a machine, such as a computer, the machine becomes an apparatus for practicing the presently disclosed invention. In the case of program code execution on programmable computers, the computer will generally include a processor, a storage medium readable by the processor (including volatile and non-volatile memory and/or storage elements), at least one input device and at least one output device. One or more programs are preferably implemented in a high level procedural or object oriented programming language to communicate with a computer system. However, the program(s) can be implemented in assembly or machine language, if desired. In any case, the language may be a compiled or interpreted language, and combined with hardware implementations.

[0079] The described methods and apparatus may also be embodied in the form of program code that is transmitted over some transmission medium, such as over electrical wiring or cabling, through fiber optics, or via any other form of transmission, wherein, when the program code is received and loaded into and executed by a machine, such as an EPROM, a gate array, a programmable logic device (PLD), a client computer, a video recorder or the like, the machine becomes an apparatus for practicing the presently disclosed invention. When implemented on a general-purpose processor, the program code combines with the processor to provide a unique apparatus that operates to perform the processing of the presently disclosed invention.

[0080] While the embodiments have been described in connection with the preferred embodiments of the various figures, it is to be understood that other similar embodiments may be used or modifications and additions may be made to the described embodiment for performing the same function without deviating therefrom. Therefore, the disclosed embodiments should not be limited to any single embodiment, but rather should be construed in breadth and scope in accordance with the appended claims.

What is claimed:
1. A method comprising:
   receiving a product identifier and a geographic location identifier of a computing device;
   determining an interface with an online retailer server based on the product identifier; and
   in response to the determined interface, applying a referral credit to an entity account associated with the geographic location identifier.
2. The method of claim 1, wherein receiving the product identifier comprises reading one of a radio frequency identification (RFID) tag, a near field communication (NFC) tag, a wireless communication device, and an optical machine-readable representation of the product identifier.

3. The method of claim 1, wherein receiving the product identifier comprises receiving the product identifier when the computing device is located at a geographic location different than a geographic location identified by the geographic location identifier.

4. The method of claim 3, further comprising receiving another product identifier when the computing device is located at a geographic location identified by the geographic location identifier.

5. The method of claim 1, further comprising: capturing a product image; and determining the product identifier based on the product image.

6. The method of claim 1, wherein receiving the product identifier comprises receiving one of a book identifier, a media content identifier, a compact disc identifier, a DVD identifier, and an electronic product identifier.

7. The method of claim 1, wherein receiving the geographic location identifier comprises receiving one of a coordinate and a communication from a communications network that identifies a geographic location.

8. The method of claim 1, further comprising interfacing with the online retailer server.

9. The method of claim 8, wherein interfacing with the online retailer server comprises accessing a website operated by the online retailer server.

10. The method of claim 8, wherein interfacing with the online retailer server comprises using a mobile application of the computing device to establish a mobile session with the online retailer server.

11. The method of claim 8, wherein interfacing with the online retailer server comprises using a communications network to interface with the online retailer server.

12. The method of claim 8, wherein interfacing with the online retailer server comprises implementing a purchase transaction to purchase a product associated with the product identifier via the online retailer server.

13. The method of claim 12, further comprising downloading the purchased product to the computing device.

14. The method of claim 12, wherein applying the referral credit comprises crediting the entity account a predetermined amount based on the purchase transaction.

15. The method of claim 8, wherein interfacing with the online retailer server comprises browsing a retail environment presented by the online retailer server via a communications network.

16. The method of claim 1, wherein the receiving and the determining are implemented by the computing device, wherein the method further comprises communicating the product identifier and the geographic location identifier to the online retailer server, and wherein applying the referral credit is implemented by the online retailer server.

17. The method of claim 1, wherein the entity account is associated with an entity identified as having property rights to a geographic location identified by the geographic location identifier.

18. The method of claim 1, further comprising controlling the computing device to interface with the online retailer server in response to receiving one of the product identifier and the geographic location identifier.

19. The method of claim 1, further comprising: receiving user input for selecting the product; and in response to receiving the user input for selecting the product, initiating a communication with the online retailer server.

20. The method of claim 19, further comprising communicating the product identifier and the geographic location identifier to the online retailer server in response to receiving the user input.

21. The method of claim 1, further comprising controlling a user interface of the computing device to present content associated with the entity account in response to receiving the geographic location identifier.

22. The method of claim 21, wherein the content associated with the entity account comprises retail store information.

23. The method of claim 21, further comprising: determining that the computing device is located outside of the geographic location associated with the geographic location identifier; and in response to determining that the computing device is located outside of the geographic location, disabling presentation of the content.

24. A computing device comprising:

a product purchase manager configured to:

receive a product identifier and a geographic location identifier of the computing device; and
determine an interface with an online retailer server based on the product identifier; and

a network interface configured to communicate the product identifier and the geographic identifier to a server for applying a referral credit to an entity account associated with the geographic location identifier.

25. A non-transitory computer-readable storage medium having stored thereon computer executable instructions for performing the following steps:

receiving a product identifier and a geographic location identifier of a computing device;
determining an interface with an online retailer server based on the product identifier; and

in response to the determined interface, applying a referral credit to an entity account associated with the geographic location identifier.

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