

WIRELESS SYSTEM FOR HEALTH WATCH

Field of the Invention

[0001] The present invention generally relates to methods and systems for maintaining a healthy lifestyle, and more particularly to a wireless system for health watch that takes a comprehensive and integrated approach to help a user maintain a healthy lifestyle.

Background of the Invention

[0002] In a world where people are preoccupied with the challenges of modern living, maintaining a healthy lifestyle is difficult. A healthy lifestyle entails appropriate diet, proper exercise, and healthy living habits so as to ensure that a person with a healthy lifestyle has a healthy body and mind. Information on diet nutrition, body weight control, and recommended exercises is abundant; they are available in multimedia including books, CDs, DVDs, and videos. In addition, much information is also accessible by network. However, the available information is usually not readily available to the people who are pressured for time, and those who demand convenience.

[0003] Therefore, there is a need to provide people with a health watch system that can be conveniently accessed by a user in any place and at any time. The present invention satisfies this need by disclosing a wireless health watch system that conveniently provides round-the-clock access to a personal dietary record of food values and instant access to information on nutritional values of a wide range of foods and where they might be available.

Summary of the Invention

[0004] One embodiment of the present invention provides a wireless health watch system for helping a user maintain a healthy lifestyle. The wireless health watch system comprises a computer storage medium having stored therein a plurality of types of information concerning of maintaining a healthy lifestyle; an execution unit coupled to the

computer storage medium for executing a plurality of programming instructions; and an interface coupled to the execution unit, wherein the interface allows a user to input instructions to the execution unit and receiving information from the execution unit.

[0005] In another embodiment of the wireless health watch system, the plurality of types of information stored in the computer storage medium include directories, maps, calendars, and recipes such as western meals and meals made with traditional Chinese medicine; thereby the wireless health watch system supports multiple services including directory service, map service, event calendar service, application on the mobile phone, application for the call center agents, and Search Service for Weight Control User.

[0006] In another embodiment of the wireless health watch system, the plurality of types of information stored in the computer storage medium are from multiple sources including inputs of the administrator of the wireless health watch system, inputs from the user of the wireless health watch system, and search results via Internet by the wireless health watch system.

[0007] In another embodiment of the wireless health watch system, the programming instruction is to the user of the computer storage medium; thereby the user can establish a service account, input instructions, and receiving information.

[0008] In another embodiment of the wireless health watch system, the programming instruction is to automatically search websites/pages and store the search results according to preset criteria.

[0009] In another embodiment of the wireless health watch system the programming instruction is to connect two or more users.

[0010] In another embodiment of the wireless health watch system, the programming instruction is to maintain and update a journal for each user, wherein the journal has an updated database including any planned dietary program for the user and a list of recommended exercises, and a tracking system for any diet undertaken by the user.

[0011] In another embodiment of the wireless health watch system, the programming instruction is to locate a partner who provides the recommended diet or exercise facility for the user.

[0012] In another embodiment of the wireless health watch system, the programming instruction is to notify the user for any event that matches preset criteria. In a further embodiment of the wireless health watch system, the notification is a format

selected from the group consisting of SMS, MMS, Video clip, WAP push, email, and paging.

[0013] In another embodiment of the wireless health watch system, the programming instruction is to maintain a collection of contact information to enable the user to keep contact with their contacts.

[0014] In another embodiment of the wireless health watch system, the programming instruction is to search and analyze the computer storage medium to provide the user with the requested information.

[0015] In another embodiment of the wireless health watch system, the programming instruction is to define conditions for search and notification.

[0016] In another embodiment of the wireless health watch system, the programming instruction is to provide both internal and external reports; wherein the internal reports include service usage, and a user's favorite location, places, and meals; and wherein the external reports include favorites, journal, and Progress Weight Control.

[0017] In another embodiment of the wireless health watch system, the programming instruction is to enable integration with Interactive Voice Response (IVR), text to voice, voice to text engine.

[0018] In another embodiment of the wireless health watch system, the programming instruction is to detect caller ID and display related information of the user.

[0019] In another embodiment of the wireless health watch system, the programming instruction is to calculate dietary points by Points Calculator for WW users. In a further embodiment of the wireless health watch system, the calculation of dietary points is done on a mobile phone.

[0020] In another embodiment of the wireless health watch system, the programming instruction is to calculate body mass index by Body Mass Index (BMI) Calculator. In a further embodiment of the wireless health watch system, the calculation of body mass index is done on a mobile phone.

[0021] In another embodiment of the wireless health watch system, the user includes any person who wants a healthy lifestyle, a user of Weight Watcher or South Beach, or any other health watch partner selected from the group consisting of restaurants and other food outlets, supermarkets, grocers and gourmet shops, and a content provider

selected from the group consisting of maps, street directory, cuisine magazines, health guidebooks, and restaurant guidebooks.

[0022] In another embodiment of the wireless health watch system, the user is a person who uses a mobile phone to input instructions to the execution unit and receives information from the execution unit.

[0023] These and additional objectives and advantages of the invention will become apparent from the following detailed description of preferred embodiments thereof in connection with the accompanying drawings.

Brief Description of the Drawings

[0024] Preferred embodiments according to the present invention will now be described with reference to the Figures, in which like reference numerals denote like elements.

[0025] FIG 1 is a functional block diagram showing the architecture of the wireless system for health watch in accordance with one embodiment of the present invention.

[0026] FIG 2 is a functional block diagram showing the information storage and gathering in accordance with one embodiment of the present invention.

[0027] FIG 3 is a functional block diagram showing more details of the mLifeStyle System in accordance with one embodiment of the present invention.

[0028] FIG 4 shows an exemplary application of Points® Calculator on a mobile phone in accordance with one embodiment of the present invention.

[0029] FIG 5 shows an exemplary application of Body Mass Index (BMI) Calculator on a mobile phone in accordance with one embodiment of the present invention.

Detailed Description of the Invention

[0030] The present invention may be understood more readily by reference to the following detailed description of certain embodiments of the invention.

[0031] Throughout this application, where publications are referenced, the disclosures of these publications are hereby incorporated by reference, in their entireties,

into this application in order to more fully describe the state of art to which this invention pertains.

[0032] The present invention will be described in detail with reference to the drawings. While specific examples and configurations are described for the illustration of the present invention, they are by no means to be intended to limit the present invention to the specific examples and configurations. In addition, in order not to obscure the principles of the present invention, many known features will not be described in detail.

[0033] The present invention provides a wireless health watch system that takes a comprehensive and integrated approach to help a user maintain a healthy lifestyle. As shown in FIG 1, the wireless health watch system **1** comprises an mLifeStyle System **20** that functions as a computer-based server (discussed in detail hereinafter). In one embodiment, the mLifeStyle System **20** is accessible by a mobile phone **10**. As a whole, the wireless health watch system **1** comprises memory means for storing many different types of information, and software and hardware for enabling a user to perform calculations, search functions, and operations allowing intercommunication between users, partners, and the system. While the following description will allocate certain functions to either the mLifeStyle System **20** or a user including a mobile phone **10** and a partner **12**, the allocation is arbitrary and for the sake of narration in its simplicity. It is to be appreciated that the operation of certain functions is flexible as long as it is operable in any part of the system.

[0034] Now referring to FIG 2, there is provided a functional block diagram showing the information storage and gathering in accordance with one embodiment of the present invention. The mLifeStyle System **20** has many modules for different functions. Here, one of the modules is mLifeStyle Storage **21**. The mLifeStyle Storage **21** stores a collection of information including directories, maps, calendars, and recipes such as western meals and meals made with traditional Chinese medicine, and supports multiple services including directory service, map service, event calendar service, application on the mobile phone, application for call center agents, and Search Service for Weight Control User.

[0035] The stored information within the mLifeStyle Storage **21** can be from diversified sources. The administrator of the mLifeStyle system can input and categorize any form and type of information so that the system can grant access to any user

accordingly. In addition, the mLifeStyle system is configured to allow it to gather information through its partners, users, and search of web pages via Internet. For example, the mLifeStyle Storage has an mLifeStyle Connector **22** (e.g. use of web services with partners in F&B, Clubs, Weight Control Providers, Map & Directory Provider), users of mLifeStyle System (e.g. a user may establish his/her account with the mLifeStyle system), and an mLifeStyle Scanner **23** (e.g. searching web sites/pages to collect related information according to the criteria set by the administrator of the mLifeStyle system. The mLifeStyle Storage can also be electronically coupled to any computer **11** so that a user can access the mLifeStyle Storage **21**.

[0036] The mLifeStyle Connector **22** provides links to Weight Watcher (WW) or South Beach (SB) partners **12**, payment gateway, or partners of mLifeStyle Affiliation Program; it allows others to interoperate with the mLifeStyle System using a defined protocol. The Partner System **12** has an mLifeStyle Locator **13** as shown in FIG 3, discussed in details hereinafter.

[0037] The mLifeStyle Scanner **23** enables the user to execute a search for food by cuisine type, restaurant menu or points or browser WWW sites **14**. In addition, the Scanner allows the user to search for recipes with low sugar content for diabetic users. The search module will also allow looking up of calories, fibre and fat of common food at places or items where such information are not readily available to calculate Points. Working in collaboration with food & beverage outlets, the mLifeStyle Scanner **23** enables us to provide access to a database of recipes for health- and weight-conscious subscribers.

[0038] Now there is provided a more detailed description of the mLifeStyle Scanner **23**. In one embodiment, the mLifeStyle Scanner **23** can syndicate recipes and restaurant listings for Weight Watcher Points available freely on the web. There is a need for a data storage system that provides support information like Points for Recipes and Points for Restaurant. With these information, we can provide a storage to fulfill users' searches. As a result we are able to capture the user usage behaviour of system.

[0039] A Points Scanner is created to mine structured and unstructured information available on the WWW. The Points Scanner performs the following tasks: Search points in USR storage from the mobile application; Update USR storage through automated or manual periodic scanning of the WWW for recipes; Allow structured syndication of data

via possible standard ICE 2.0; A system where weight control provider or any affiliate partner can manage the product catalog into our system where user can search on them.

[0040] Syndicating information on the WWW can be unstructured where one site presents information in a format different from another web site. Or it can take place in a structured manner where a standard protocol like ICE 2.0 is used.

[0041] Syndication of data from multiple sources that use ICE 2.0 requires adoption of service provider standard which requires implementation and development effort. Most of the information shared by the user out on the web are weight control user and information provider. The WWW offers vast amounts of information which do not make use of standard protocol and appear in an unstructured manner. For example, a web site may make use of html frame with table to display recipe content, while another site may make use of a simple html page without using any table. In such situations of unstructured presentation of information, a recipe content may be presented alongside irrelevant information which may be advertisements, images etc.

[0042] For example, a web page containing a recipe information includes relevant information as follows: Recipe Name; Ingredients; Instructions; Nutrition Information; and Points.

[0043] The content of web pages on the same site are usually presented in a similar format. In such cases we can make use of a template by which the user is able to manually select the data of interest or relevant data to be mapped to the fields in storage. Additional rules may be included to trigger the extraction of relevant data. When certain conditions are met such as, for example, the occurrence of a text string, an automated extraction of the data of interest takes place. These rules, known as customized handlers, may be in the form of a default handlers such as : Text appender; Text converter; Table handler; Form handler; Frame handler; and URL handler.

[0044] The mLifeStyle Storage **21** may maintain an mLifeStyle Journal (not shown in FIG 2) for each user of the mLifeStyle System; the mLifeStyle Journal contains information such as any planned dietary program for the user, and a tracking system for any diet undertaken by the user. In one embodiment, the mLifeStyle Journal is accessible by a mobile phone. For example, when a user who is a WW or SB weight control program comes to a location and it is time for a meal, the user can execute the mLifeStyle application using a mobile phone. After entering the information such as building name or

street name or Postal Code or Restaurant name & cuisine type, the user can select Search to view the result or listen to IVR or to have agent call back. For a Weight Control User where the system is based on the user preference and dietary profile, the search will return a list of meal recommendations where the user is located. The recommended list of meals would have taken into consideration the food intake of the user over the past few days to ensure an appropriate and balance diet against the user's profile, meal plan and exercise or sport carried out recently. After having taken the meal, the user can simply input the consumption of the recommended meal; then the mLifeStyle Storage **21** will automatically log the time and place of meal consumed into the mLifeStyle Journal. As a result, there is no need for the user to manually enter date and time into the mLifeStyle Journal.

[0045] The mLifeStyle Journal can include information beyond just diet programs for a user. For example, a user at a fitness club runs the mLifeStyle System **20** on a mobile phone. After entering the fitness club's name and requesting for a list of recommended exercises, the user can then select to listen to detail instructions for carrying out the workout. In one embodiment, the recommended exercises can be based on the user's profile, age, health condition, meal taken recently, and/or other parameters specified by the user. After completing the exercise, the user then acknowledges the completion of exercise via the mobile phone so that the mLifeStyle Storage **21** creates entry into the mLifeStyle Journal with information of the exercises performed with date and time and length of exercise, and favorites for the user.

[0046] Now referring to FIG 3, there is provided a functional block diagram showing more details of the mLifeStyle System in accordance with one embodiment of the present invention. The mLifeStyle System **20** comprises mLifeStyle Rules **24**, mLifeStyle Trigger **25**, mLifeStyle Contact **26**, mLifeStyle Event **27**, mLifeStyle Notifier **28**, mLifeStyle Report **29**, mLifeStyle Miner **30**, mLifeStyle Storage **21**, mLifeStyle Voice **31**, mLifeStyle CTI Server **32**, and IP PBX **33**. The mLifeStyle Storage **21** has the mLifeStyle Connector **22** and mLifeStyle Scanner **23** discussed above. The following discussion will use the configuration shown in FIG 3 to show the connections among the functional modules. It is to be appreciated that all of the functional modules can be configured in many different ways so long as the configuration performs the desired function: wireless health watch.

[0047] The mLifeStyle Event **27** may be electronically coupled to the mLifeStyle Storage **21**, mLifeStyle Trigger **25**, and mLifeStyle Contact **26**. The mLifeStyle Event **27** may contain information of any event that may be of interest to its users. For example, the stored information is about sport events and activities. In one embodiment, the information may be general and comprehensive so that a user can log in and search the information for his/her preferences. In another embodiment, the mLifeStyle Event **27** may have an automatic search and match function that searches the database and matches with a user's preferences so that it will send to the user a notice about his/her preferred event whenever such a match is found.

[0048] The mLifeStyle Contact **26** may be electronically coupled with the mLifeStyle Event **27** and mLifeStyle Storage **21**. It contains contact information enabling users to keep contact with friends. It also allows a user to create a group of contacts. These contacts can be used by the mLifeStyle Notifier **28**, mLifeStyle Event **27**, and other mLifeStyle components.

[0049] The mLifeStyle Miner **30** may be electronically coupled with the mLifeStyle Storage **21** and Data Analyst **34** (may be located outside of the mLifeStyle system). The mLifeStyle Miner **30** is a data-mining engine that consolidates information in the mLifeStyle Storage **21** that provides feed to the mLifeStyle Connector **22**.

[0050] The mLifeStyle Miner **30** may be installed in the server and allows one to carry out data mining not limited to WW program regime, best recipes, and WW consumption patterns, eating patterns, exercise and sport carried for popular exercise and sport equipment used patterns.

[0051] The mLifeStyle Rules **24** define the conditions for an action to be performed by mLifeStyle Miner **30**.

[0052] The mLifeStyle Trigger **25** interconnects with the mLifeStyle Storage **21** based on results from the mLifeStyle Miner **30**, mLifeStyle Event **27**, and other mLifeStyle components to push messages or notifications to users of the mLifeStyle System **20**. For example, when a user frequently performs a particular physical exercise and participates in certain sports activities, he/she will receive reminders of exercise schedules without even the need for a user to enter reminder of event into the system. The mLifeStyle System **20** 'learns' about the life style patterns of user with mLifeStyle Miner **30**. The user receives notifications or reminders via SMS or WAP push through mLifeStyle Notifier **28**. When

the user receives a notification, he/she may be presented with the choice to disable future notification of such event via the application on the mobile phone. By the same token, a user can also reactivate the notification via the mobile phone or web page application.

[0053] The mLifeStyle Trigger **25** triggers an action when conditions provided by mLifeStyle Rules **24** are met. The exemplary actions include sending out a message by the mLifeStyle Notifier **28** and sending out a report to a user by the mLifeStyle Report **29**.

[0054] In one embodiment, for WW users, the mLifeStyle Trigger **25** allows a user to configure a limit to the number of Points so as to trigger off an alert and also to report the number of points remaining for the day.

[0055] As mentioned above, the mLifeStyle Locator **13** is a component installed at the partner location. The mLifeStyle Locator **13** allows a partner to communicate with the mLifeStyle System when a user is within the vicinity. The mLifeStyle Locator **13** will send a message using wired or wireless network to the mLifeStyle System. The system on receiving the message will activate the mLifeStyle Rule **24** engine to create the appropriate messages for mLifeStyle Notifier **28** to be transmitted to the user and partner. The Call Center will receive push notification to its agent's application desktop. Through the use of mobile phone, we make use of mLifeStyle Locator **13** to push messages to our user on foods that meet the user's daily WW Points budget available when the user is within the partner's vicinity.

[0056] The mLifeStyle Notifier **28** may be electronically coupled with the mLifeStyle Storage **21** and mLifeStyle Trigger **25**. The mLifeStyle Notifier **28** can send a notice to a user about any event or activity that is of concern to the user. The mLifeStyle Notifier **28** also allows a user to send a notice or invitation to another user of the mLifeStyle System upon receiving such a notice. Furthermore, a user can choose to send out invitations to his/her friends' setup using his/her mLifeStyle Contact **26** list. When the invitation is sent out by the mLifeStyle System **20**, it will capture the RSVP regarding the invitation. The user can again choose to see the RSVP result or listen to it via IVR.

[0057] The mLifeStyle Notifier **28** can also be used by the partners of the mLifeStyle System **20**. For example, when a user walks into any partner's premises (e.g., sports club, and restaurants), he/she will be instantly recognized by an mLifeStyle Locator **13** which will send a message to the mLifeStyle System. The mLifeStyle System **20** will then send notification to the user and our partners regarding the presence of this user. The

user can receive the notifications such as offerings by partner and recommendations of meals related to Weight Control; the partner can receive the notifications such as the ID of the user and preference related to partner to provide target marketing by partner. The call center will receive notification via their pop screen, where they can also provide proactive marketing to the user based on his location and his preference.

[0058] The mLifeStyle Notifier **28** provides the support for sending out the notification in various formats including SMS, MMS, Video clip, WAP push, email, and paging.

[0059] The mLifeStyle Report **29** may be electronically coupled with the mLifeStyle Storage **21**. The mLifeStyle Report **29** provides both internal and external reports. The internal reports are used by the mLifeStyle System **20** including service usage, and a user's favorites (e.g., location, places, and meals). The external reports are generated for individual users and partners (Weight Control Providers, Marketing Company) of the mLifeStyle System **20**. As for individual reports, default template of report is provided and can be customised for a user at a charge. The information on an individual report for a user may include favorites, journal, and Progress Weight Control. The information on an individual report for a partner may include report of mLifeStyle users patronizing their services, product use or purchase, report to WW or SB of member progress, and report to Marketing company of proactive telemarketing

[0060] The mLifeStyle Voice **31** may be electronically connected with the mLifeStyle Storage **21** and IP PBX **33**, and enables integration with Interactive Voice Response (IVR), text to voice, voice to text engine that supports the mLifeStyle System. IP PBX is the voice over IP telephony setup in the Call Center. It is integrated with the mLifeStyle CTI Server which allows the detection of caller ID and displays related information of the mLifeStyle user to the Call Center Agent.

[0061] The mLifeStyle computer telephony integration (CTI) server **32** may be electronically coupled with the mLifeStyle Storage **21** and IP PBX **33**. For example, when a user calls in to the Call Center, the CTI **32** server picks up the caller ID, and pops up the caller details. With the details of the user, the agent will be able to address the user by name and provide the user with requested information quickly.

[0062] Now referring to FIG 4 and FIG 5, there are provided some applications that can be performed on a mobile phone either by programs pre-installed in the mobile phone

or via the mLifeStyle System 20. For example, FIG 4 shows the operation on a mobile phone of calculating dietary points by Points Calculator for WW users; FIG 5 shows the operation on a mobile phone of calculating body mass index by Body Mass Index (BMI) Calculator.

[0063] The wireless health watch system of the present invention can be used by any person who wants a healthy lifestyle including user of Weight Watcher or South Beach users, health watch partners (e.g., restaurants and other food outlets, supermarkets, grocers and gourmet shops), and content providers (e.g., maps, street directory, cuisine magazines, health guidebooks, and restaurant guidebooks).

[0064] While the present invention has been described with reference to particular embodiments, it will be understood that the embodiments are illustrative and that the scopes of the appended claims are not so limited. Alternative embodiments of the present invention have been set forth by implication and will be apparent to those having ordinary skill in the art to which the present invention pertains. Such alternate embodiments are considered to be encompassed within the scope of one or more of the appended claims. Accordingly, the scope of the present invention is described by the appended claims and is supported by the foregoing description.

CLAIMS

What is claimed is:

1. A wireless health watch system for helping a user maintain a healthy lifestyle, comprising:
 - a computer storage medium having stored therein a plurality of types of information concerning maintaining a healthy lifestyle;
 - an execution unit coupled to the computer storage medium for executing a plurality of programming instructions; and
 - an interface coupled to the execution unit, wherein the interface allows a user to input instructions to the execution unit and receiving information from the execution unit.
2. The wireless health watch system of claim 1, wherein the plurality of types of information stored in the computer storage medium include directories, maps, calendars, and recipes for western meals and meals made with traditional Chinese herbal medicine; thereby the wireless health watch system supports multiple services including directory service, map service, event calendar service, application on the mobile phone, application for the call center agents, and Search Service for Weight Control User.
3. The wireless health watch system of claim 1, wherein the plurality of types of information stored in the computer storage medium are from multiple sources including inputs of the administrator of the wireless health watch system, inputs from the user of the wireless health watch system, and search results via Internet by the wireless health watch system.
4. The wireless health watch system of claim 1, wherein the programming instruction is to the user of the computer storage medium; thereby the user can establish a service account, input instructions, and receive information.

5. The wireless health watch system of claim 1, wherein the programming instruction is to automatically search websites/pages and store the search results according to preset criteria.
6. The wireless health watch system of claim 1, wherein the programming instruction is to connect two or more users.
7. The wireless health watch system of claim 1, wherein the programming instruction is to maintain and update a journal for each user, wherein the journal has an updated database including any planned dietary program for the user and a list of recommended physical exercises, and a tracking system for any diet undertaken by the user.
8. The wireless health watch system of claim 1, wherein the programming instruction is to locate a partner who provides the recommended diet or exercise facility for the user.
9. The wireless health watch system of claim 1, wherein the programming instruction is to notify the user of any event that matches preset criteria.
10. The wireless health watch system of claim 9, wherein the notification is a format selected from the group consisting of SMS, MMS, Video clip, WAP push, email, and paging.
11. The wireless health watch system of claim 1, wherein the programming instruction is to maintain a collection of contact information to enable the user to keep contact with their contacts.
12. The wireless health watch system of claim 1, wherein the programming instruction is to search and analyze the computer storage medium to provide the user with the requested information.
13. The wireless health watch system of claim 1, wherein the programming instruction is to define conditions for search and notification.

14. The wireless health watch system of claim 1, wherein the programming instruction is to provide both internal and external reports; wherein the internal reports include service usage, and a user's favorite locations, places, and meals; and wherein the external reports include favorites, journal, and Progress Weight Control.
15. The wireless health watch system of claim 1, wherein the programming instruction is to enable integration with Interactive Voice Response (IVR), text to voice, voice to text engine.
16. The wireless health watch system of claim 1, wherein the programming instruction is to detect caller ID and display related information of the user.
17. The wireless health watch system of claim 1, wherein the programming instruction is to calculate dietary points by Points Calculator for WW users.
18. The wireless health watch system of claim 17, wherein the calculation of dietary points is done on a mobile phone.
19. The wireless health watch system of claim 1, wherein the programming instruction is to calculate body mass index by Body Mass Index (BMI) Calculator.
20. The wireless health watch system of claim 19, wherein the calculation of body mass index is done on a mobile phone.
21. The wireless health watch system of claim 1, wherein the user includes any person who wants a healthy lifestyle, a user of Weight Watcher or South Beach, or any other health watch partner selected from the group consisting of restaurants and other food outlets, supermarkets, grocers and gourmet shops, and a content provider selected from the group consisting of maps, street directory, cuisine magazines, health guidebooks, and restaurant guidebooks.

22. The wireless health watch system of claim 1, wherein the user is a person who uses a mobile phone to input instructions to the execution unit and receiving information from the execution unit.