1   <u>UNITED STATES PATENT APPLICATION</u>

2   For:

3   **INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS**
4   **SYSTEM WITH MENU GENERATION**

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3   OF: **KEITH R. McNALLY**
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8   FOR: **INFORMATION MANAGEMENT AND SYNCHRONOUS**
9   **COMMUNICATIONS SYSTEM WITH MENU**
10   <u>**GENERATION**</u>
11

12   The present application is a continuation of application Serial No. 09/400,413,

13 filed September 21, 1999. The contents of application Serial No. 09/400,413 are incorporated

14 herein by reference.

15   <u>**FIELD OF THE INVENTION**</u>

16   This invention relates to an information management and synchronous

17 communications system and method for generation of computerized menus for restaurants and

18 other applications with specialized display and synchronous communications requirements

19 related to, for example, the use of equipment or software with non-PC-standard graphical

20 formats, display sizes and/or applications for use in remote data entry, information management

21 and synchronous communication between host computer, digital input device or remote pager

22 via standard hardwired connection, the internet, a wireless link, smart phone or the like.

23   <u>**BACKGROUND OF THE INVENTION**</u>

24   While computers have dramatically altered many aspects of modern life, pen and

25 paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and

26 wait-list management, because of their simplicity, ease of training and operational speed. For

27 example, ordering prepared foods has historically been done verbally, either directly to a waiter

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1 or over the telephone, whereupon the placed order is recorded on paper by the recipient or

2 instantly filled.

3 Although not previously adapted for wide-scale use in the hospitality industry,

4 various forms of digital wireless communication devices are in common use, e.g., digital

5 wireless messengers and pagers. Also in common use are portable laptop and handheld devices.

6 However, user-friendly information management and communication capability not requiring

7 extensive computer expertise has not heretofore been available for use in everyday life such as

8 for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars

9 have been spent on personal digital assistant ("PDA") development seeking to produce a small,

10 light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a

11 satisfactory solution.

12 One of the inherent shortcomings of PDA type devices is that, as they strive for

13 small size, low weight and low cost, they must compromise the size and clarity of the operator

14 display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal

15 display) type devices. As the size of the display shrinks, the amount of information that may be

16 displayed at any one point or time is commensurately decreased, typically requiring multiple

17 screens and displays to display information to the operator. This reduces the overall utility of the

18 device. Additionally, the smaller display and keyboard results in a non-optimal operator

19 interface, which slows down operation and is thus unacceptable for the time criticality of

20 ordering, reservation and wait-list management and other similar applications. This necessitates

21 many design compromises which in the aggregate have resulted in limited acceptance of PDA

22 type devices in the restaurant and hospitality fields.

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1   Many of the negatives prevalent in earlier devices have been eliminated, but, to

2   date, there is still no integrated solution to the ordering/waitlist/reservation problem discussed

3   above. With the advent of the Palm® and other handheld wireless devices, however, the efforts

4   to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal

5   calendars. However, substantial use of such devices in the restaurant and hospitality context has

6   not occurred to date. As discussed above, at least one of the reasons PDAs have not been

7   quickly assimilated into the restaurant and hospitality industries is that their small display sizes

8   are not readily amenable to display of menus as they are commonly printed on paper or displayed

9   on, e.g., large, color desktop computer screens. Another reason is that software for fully

10   realizing the potential for wireless handheld computing devices has not previously been

11   available. Such features would include fast and automatic synchronization between a central

12   database and multiple handheld devices, synchronization and communication between a World

13   Wide Web ("Web") server and multiple handheld devices, a well-defined application program

14   interface ("API") that enables third parties such as point of sale ("POS") companies, affinity

15   program companies and internet content providers to fully integrate with computerized

16   hospitality applications, real-time communication over the internet with direct connections or

17   regular modem dialup connections and support for batch processing that can be done periodically

18   throughout the day to keep multiple sites in synch with the central database. A single point of

19   entry for all hospitality applications to communicate with one another wirelessly has also

20   previously been unavailable. Such a single point of entry would work to keep all wireless

21   handheld devices and linked Web sites in synch with the backoffice server (central database) so

22   that the different components are in equilibrium at any given time and an overall consistency is

23   achieved. For example, a reservation made online would be automatically communicated to the

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1 backoffice server and then synchronized with all the wireless handheld devices wirelessly.

2 Similarly, changes made on any of the wireless handheld devices would be reflected

3 instantaneously on the backoffice server, Web pages and the other handheld devices.

4 For the foregoing reasons, paper-based ordering, waitlist and reservations

5 management have persisted in the face of widespread computerization in practically all areas of

6 commerce. At most, computerization of these functions has been largely limited to fixed

7 computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in

8 configuring wireless handheld devices and maintaining database synchronization for such

9 applications. Specifically, the unavailability of any simple technique for creating restaurant

10 menus and the like for use in a limited display area wireless handheld device or that is

11 compatible with ordering over the internet has prevented widespread adoption of

12 computerization in the hospitality industry. Without a viable solution for this problem,

13 organizations have not made the efforts or investments to establish automated interfaces to

14 handheld and Web site menus and ordering options.

15 A principal object of the present invention is to provide an improved information

16 management and synchronous communications system and method which facilitates user-

17 friendly and efficient generation of computerized menus for restaurants and other applications

18 that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

19 A further object of the present invention is to provide an improved information

20 management and synchronous communications system and method which provides for entry,

21 management and communication of information from the operator as well as to and from another

22 computer, Web page menu, remote digital device using a standard hardwired connection, the

23 internet or a wireless link.

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