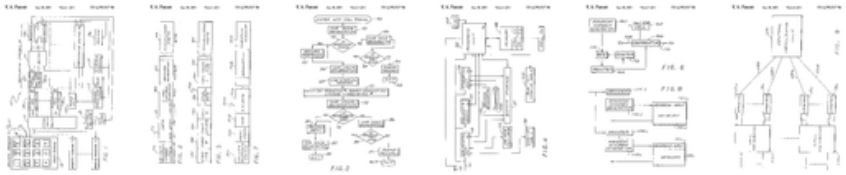
Patents

Telephonic-interface statistical analysis system

Abstract

A system D interfaces with a multiplicity of individual terminals T1-Tn of a telephone network facility C, at the terminals callers are prompted by voice-generated instructions to provide digital data that is identified for positive association with a caller and is stored for processing. The caller's identification data is confirmed using various techniques and callers may be ranked and accounted for on the basis of entitlement, sequence or demographics. Callers are assigned random designations that are stored along with statistical and identification data. A break-off control circuit may terminate the computer interface aborting to a terminal for direct communication with an operator. Real-time operation processing is an alternative to stored data. The accumulation of stored data (statistical, calling order sequence, etc.) is variously processed and correlated as with developed or established data to isolate a select group or subset of callers who can be readily identified and reliably confirmed. Different program formats variously control the processing of statistical data as for auction sales, contests, lotteries, polls, commercials and so on.

Images (6)



Classifications

- H04Q3/665 Circuit arrangements therefor

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Worldwide applications

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Info: Patent citations (435), Non-patent citations (415), Cited by (323), Legal events, Similar documents, Priority and Related Applications

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Claims (50)

Hide Dependent

What is claimed is:

1. A control system for use with a communication facility including remote terminals for individual callers, wherein each of said remote terminals comprises a telephonic instrument including a voice communication device, and a digital input device in the form of an array of alphabetic numeric buttons for providing caller data signals, said control system comprising:

a processor unit for processing said caller data signals supplied by individual callers via said remote terminals;

interface structure for interfacing said communication facility to said processor unit wherein said interface structure receives data signals prior to the close of communication with the caller, including called number data signals (DNIS) and calling number identification data signals automatically provided by said communication facility and said caller data signals supplied by the individual callers via said remote terminals;

voice generator for providing prompts to said individual callers in response to which said individual callers provide said caller data signals, said caller data signals including caller qualification data for qualifying said individual callers;

testing caller customer number data as part of said caller qualification data supplied by the individual callers as at least certain of said caller data signals against a file of stored customer number data;

means for controlling said processor unit in accordance with said called number identification data signals (DNIS) to process at least certain of said caller data signals in accordance with a select format from a plurality of formats identified by said called number identification data signals (DNIS); and

a switch that transfers the individual callers to a manual operation in the event the individual callers do not qualify during the testing step.

2. A control system according to claim **1**, wherein at least certain of said individual callers at certain of said remote terminals are also subject to qualification based on said calling number identification data signals.

3. A control system according to claim **1**, wherein said processor unit generates data identifying an order and provides the data to the individual callers.

4. A control system according to claim **3**, wherein the data identifying the order is number data.

5. A control system according to claim **4**, wherein the number data is provided as acknowledgement data to the individual callers.

6. A control system according to claim **4**, wherein the number data is provided in chronological sequence.

7. A control system according to claim **1**, wherein the qualification data is indicative of a consumable key.

8. A control system according to claim **1**, wherein the caller data signals include item number data.

9. A control system according to claim **1**, wherein the caller data signals include a second form of identification data.

10. A control system according to claim **1**, wherein said file of stored customer number data includes negative file data.

11. An analysis control system for use with a communication facility including remote terminals for individual callers, wherein each of said remote terminals comprises a telephonic instrument including a voice communication device and digital input device in the form of an array of alphabetic numeric buttons for providing data and wherein said communication facility has a capability to automatically provide terminal digital data, indicating a calling telephone number, said analysis control system comprising:

interface structure coupled to said communication facility to interface said remote terminals for voice and digital communication and including means to provide caller data signals representative of data relating to said individual callers provided from said remote terminals or automatically provided by the communication facility with respect to the remote terminals prior to the close of communication with the callers including caller personal identification data entered by the caller via the digital input device and said terminal digital data indicative of a calling telephone number;

record testing structure connected to receive and test said caller data signals indicative of said terminal digital data representative of said calling telephone number and said caller personal identification data against previously stored terminal digital data and caller personal identification data;

storage structure for storing certain of said data provided by said individual callers including item data for ordering particular items; and

analysis structure for receiving and processing said caller data signals under control of said record testing structure.

12. An analysis control structure according to claim **11** wherein said callers further provide credit card number data as caller data signals.

13. An analysis control system according to claim **12**, wherein said individual callers further provide expiration data with respect to said credit card number data as caller data signals.

14. An analysis control system according to claim **13**, wherein said individual callers receive authorization on-line.

15. An analysis control system according to claim **14**, wherein the credit card number data is received as billing data.

16. An analysis control system according to claim **14**, wherein said analysis structure further comprises a processor that generates data identifying an order and provides at least certain of the data to the individual callers.

17. A control system according to claim **11**, wherein said analysis structure further comprises a processor that generates data identifying an order and provides at least certain of the data to the individual callers.

18. A control system according to claim **11**, wherein the data identifying the order is number data.

19. A control system according to claim **18** wherein the number data is provided as acknowledgement data to the individual callers.

20. A control system according to claim **18** wherein the number data is provided to the individual callers in chronological sequence.

21. A method for implementing a service for controlling an order of an item or items for use with a communication facility including remote terminals for individual callers, wherein each of said remote terminals comprises a telephonic instrument including a voice communication device and a digital input device in the form of an array of alphabetic numeric buttons for providing data, said method comprising the steps of:

interfacing said remote terminals for voice and digital communication and receiving data signals prior to the close of communication from callers at said remote terminals including said caller data signals developed by said remote terminals;

providing prompts to said individual callers in response to which said individual callers can provide said caller data signals including caller qualification data for qualifying callers;

receiving from said callers customer number data in addition to one other form of identification data as a part of the caller qualification data;

verifying said customer number data and said other form of identification data entered by said callers;

receiving from said callers order data including item data entered by said callers via said digital input device;

receiving from said callers additional data relating to said item data;

processing said caller entered data to implement said order; and

providing individual callers with computer generated data to identify said order for individual callers.

22. A method according to claim **21**, wherein the computer generated data identifying the order is provided to the individual callers as acknowledgement data.

23. A method according to claim **21**, wherein the computer generated number data is provided to the individual callers in chronological sequence.

24. A method according to claim **21**, wherein the data identifying the order identifies the order for a mail order house.

25. A method according to claim **21**, wherein data identifying the order facilitates tracing.

26. A method according to claim **21**, further comprising the step of:

receiving called number identification signals (DNIS) automatically provided by said communication facility as a part of said data signals.

27. A method according to claim **20**, further comprising the step of:

receiving calling number identification signals automatically provided by said communication facility as a part of said data signals.

28. A method according to claim **21**, wherein the receiving step includes receiving calling number identification signals automatically provided by said communication facility as a part of said data signals.

29. A method according to claim **21**, wherein in response to prompts said individual callers enter credit card data.

30. A method according to claim **29**, wherein in response to prompts said individual callers enter data on a type of credit card.

31. A method according to claim **29** wherein said callers enter credit card number data as credit card data.

32. A method according to claim **31** wherein in response to said prompts said callers enter credit card expiration data as credit card data.

33. A method according to claim **32**, further comprising the step of:

verifying on-line the credit card number data and the credit card expiration data.

34. A method according to claim **31**, wherein said credit card number data is received as billing data.

35. A method according to claim **21** wherein said order is a television initiated order.

36. A method according to claim **35**, wherein at least certain of the data relating to the order entered by said callers is coded data displayed on the television.

37. A method according to claim **21**, wherein the customer number data provided by the callers is associated with a limit restricting use of the service to an extent of a dollar value.

38. A method according to claim **21**, wherein the customer number data provided by the callers is associated with a limit restricting use of the service up to a certain number of uses.

39. A method according to claim **21**, wherein the customer number data provided by the callers is associated with a limit restricting use of the service to a limited period of time.

40. A method according to claim **21**, further comprising the step of:

controlling inventory of items with certain order data.

41. A method according to claim **40**, wherein the controlling step controls the inventory of items on-line.

42. A method according to claim **21** wherein the verifying step further comprises the step of:

verifying the customer number data provided by the callers against a list of negative customer numbers.

43. A method according to claim **21** wherein said other form of identification data is social security number data.

44. A method according to claim **21** wherein said other form of identification data is PIN data.

45. A method according to claim **21** wherein the callers order multiple items during the course of a call.

46. A method according to claim **45**, wherein the facility operating the service is a mail order house.

47. A method according to claim **21**, wherein the data identifying the order identifies the order for a facility operating the service.

48. A method according to claim **21**, wherein the additional data provided by the callers includes the size of the item.

49. A method according to claim **21**, wherein the additional data provided by the caller includes the color of the item.

50. A method according to claim **21**, wherein the additional data provided by the caller includes the size and color of the item.

Description

This application is a continuation of application Ser. No. 08/475,425, filed on Jun. 7, 1995, and entitled “Telephonic-Interface Statistical Analysis System,” which is a divisional of application Ser. No. 07/335,923, filed on Apr. 10, 1989, and entitled “Telephonic-Interface Statistical Analysis System,” which is a continuation of application Ser. No. 07/194,258, filed on May 16, 1988, and entitled “Telephonic-Interface Statistical Analysis System,” now U.S. Pat. No. 4,845,739, which is a continuation-in-part of application Ser. No. 07/018,244, filed on Feb. 24, 1987, and entitled “Statistical Analysis System For Use With Public Communication Facility,” now U.S. Pat. No. 4,792,968, which is a continuation-in-part of application Ser. No. 06/753,299, filed on Jul. 10, 1985, and entitled “Statistical Analysis System For Use With Public Communication Facility,” now abandoned.

BACKGROUND AND SUMMARY OF THE INVENTION

Various forms of publicly accessible communication systems for providing access to a central station have been proposed, some involving telecommunications. However, sometimes a need for ancillary functions arise in that regard, e.g. it may be desirable to positively identify a large group of persons, as a demographically controlled group, or a specifically entitled group, then statistically analyze data from the group so as to accurately identify certain persons in the group and select a subset of at least one person. Specifically, it may be desirable to obtain medical data from an entitled group of people, to correlate such data, perhaps introduce external data, then identify a select subset of the group. In that regard, a need exists for an improved, effective, economical, and expedient system of telecommunication incorporating means for performing qualification, identification, analysis and selection of individual persons.

It has been proposed to interface persons at telephone calling stations directly with a computer facility. In accordance with such arrangements, recorded voice messages prompt callers to provide data by actuating the alphanumeric buttons that are conventionally employed for dialing from one telephone station to another. In one prior arrangement, a caller may actuate dialing buttons to selectively attain a communication channel or to address specific information in a computer. In another arrangement, dialing buttons may be actuated to specify a billing designation as for requested services. Generally, such systems are believed to have been somewhat limited in scope, often involving difficulties that are frustrating or confusing to a caller. Nevertheless, such techniques have been widely used to enhance and broaden communication.

In general, the present invention comprises a telephonic-interface system and related process for selectively utilizing both analog (voice) and digital telephonic communication in a variety of different interface formats or programs, as to select or qualify a set of callers, enable positive identification of at least certain of the callers in the set, acquire data from callers in the set, statistically analyze acquired data, as in combination and in association with external data (time independent), and accordingly to isolate a subset of the callers with verifiable identification. That is, the external data (separate from caller-provided data) may be introduced at any of a variety of different times in relation to the caller data.

For example, a voice origination apparatus ay prompt individual callers who (after qualification) provide select digital data to develop a record for further processing either immediately, upon the evolution of a defined set of callers or upon the establishment of select external data. Thus, following a qualification phase, the information acquisition phase may be concurrent or consecutive with respect to the processing phase. When appropriate, abort capability allows a caller to remain “off hook” and go to analog (vocal) communication. The caller then interfaces directly with an operator.

The system of the present invention may qualify an entitled set of callers, then receive answer data in the course of the call and develop identification or designation data, sequence data and statistical data. The system may then provide data cells for storing individual data while assigning confirmable identifications to the entitled set. From the set, a subset is defined. That is, in accordance with various formats, acquired data is processed in statistical relationship, or in relation to applied external data to accomplish such functional operating formats as an auction sale, a contest, a lottery, a poll, a merchandising operation, a game, and so on.

A variety of memory techniques are used to selectively activate the voice origination apparatus. Accordingly, statistical analysis and selection can be effectively and economically accomplished with respect to a substantial set of callers who are accommodated individual communication through a telephone system.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, which constitute a part of this specification, exemplary embodiments exhibiting various objectives and features hereof are set forth, specifically:

FIG. 1 is a block diagram of a system constructed in accordance with the present invention;

FIG. 2 is a fragmentary diagrammatic representation of a storage cell format as may be developed in the system of FIG. 1;

FIG. 3 is a flow diagram of one operating format of the system of FIG. 1;

FIG. 4 is a block diagram of a form of processor or function unit as may be employed in the system of FIG. 1;

FIG. 5 is a fragmentary diagrammatic representation of a storage cell format as may be developed in the system of FIG. 1 with the processor of FIG. 4;

FIG. 6 is a block diagram of elements in an operating function unit of FIG. 4;

FIG. 7 is a diagrammatic representation of a storage cell format as may be developed in the system of FIG. 4; and

FIG. 8 is a block diagram of elements in an operating function unit of FIG. **4**.

FIG. 9 is a block diagram of the connections between the CPU and remote stations.

DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENTS

As required, detailed illustrative embodiments of the present invention are disclosed herein. However, physical communication systems, data formats, and operating structures in accordance with the present invention may be embodied in a wide variety of forms, some of which may be quite different from those of the disclosed embodiments. Consequently, the specific structural and functional details disclosed herein are merely representative; yet in that regard, they are deemed to afford the best embodiments for purposes of disclosure and to provide a basis for the claims herein which define the scope of the present invention.

Referring initially to FIG. 1, a series of remote telephone-instrument terminals T**1** through Tn are represented (left). The terminals are generally similar, and accordingly, only the terminal T**1** is illustrated in detail.

In the disclosed embodiment, the remote terminals T**1** through Tn represent the multitude of conventional telephone terminals that are coupled to a communication facility C which may take the form of a comprehensive public telephone system for interconnecting any associated terminals T**1**-Tn. In accordance with the present system, the terminals T**1**-Tn operate through the communication facility C to be coupled with a central station D, an embodiment of which is illustrated in some detail.

Generally in accordance with the present development, individual callers use the individual telephone stations T**1** through Tn to interface the station D through the communication facility C. Callers may be screened or qualified. Also in accordance herewith, the data of individual callers may be collected, correlated and tested in the station D for processing in accordance with various programs and external data. As a consequence, various objectives are accomplished. For example, a select subset of the callers may be isolated and specifically identified, or related data may be processed, or transactions may be actuated. The possibilities for application of the system are substantial and varied as will be apparent from the exemplary structure and functions as described in detail below.

In one operating process format, the public might be polled with regard to locating the specific purchasers of a defective or dangerous product. Alternatively, the public might be polled with the objective of locating persons susceptible to a specific ailment or disease. Public auctions of unprecedented participation are possible. Legal lotteries are enabled that are interesting, effective and very economical on an individual participant basis. The system also might be employed in various game formats or to automate a promotion or mail-order operation, even to the extent of including inventory control as detailed below.

In each functional operating format, the callers may be variously qualified on the basis of entitlement and may be identified for subsequent verification. The callers then may be prompted, either through the interface or externally, to provide appropriate data.

Considering the system of FIG. 1 in somewhat greater detail, it is to be understood that the communication facility C has multiplexing capability for individually coupling the terminals T**1**-Tn to the central station D on request. In the illustrative embodiment of the system, the communication facility C comprises a public telephone network and the individual terminals T**1**-Tn take the various forms of existing traditional or conventional telephone instruments.

The exemplary telephone terminal T**1** is represented in some detail to include a hand piece **10** (microphone and earphone) and a panel **12** provided with a rectangular array of push buttons **14** in the conventional configuration. Of course, the hand piece **10** accommodates analog signals while the panel **12** is a digital apparatus. Generally in accordance herewith, the hand piece **10** serves to manifest analog signals vocally to the caller.

In accordance with conventional telephone practice, alphabetic and numeric designations are provided on the buttons **14**. For example, several of the buttons **14** carry three letters along with a decimal digit. Specifically, the button designated with the numeral “2” also carries the letters “A”, “B” and “C”. In that manner, the buttons **14** encompass the numerals “0-9”, two symbols, and the alphabet except for the letters “Q” and “Z”. Consequently, the buttons **14** accommodate the entry of decimal data, and to some extent alphabetic data.

The buttons **14** designated with symbols “*” and “#”, along with the, numeral “0”, can be used by predetermined assignment to represent the letters “Q” and “Z” or any of a variety of other data or command components. Generally, in accordance herewith, the buttons **14** are employed to formulate digital data at the central station D in various formats determined by the instant specific use and operating format of the system.

Considering the central station D in somewhat greater detail, the communication facility C is coupled to interface a series of processing systems P**1** through Pn (FIG. 1, left). specifically, the communication facility C is connected to the processing systems P**1**-Pn through an associated series of automatic call distributors AC**1** through ACn. Each of the automatic call distributors AC**1**-ACn accommodates one hundred lines from the communication facility C and accordingly, may accommodate and queue up to 100 calls.

Each of the automatic call distributors AC**1**-ACn may take various forms as well know in the prior art, functioning to queue incoming calls for connection to a lesser number of lines. In the disclosed embodiment, from each of the call distributors AC**1**-ACn, fifty lines are connected respectively to the individual data processing systems P**1**-Pn through an interface **20** and a switch **21**. Thus, in the disclosed embodiment, each of the automatic call distributors AC**1**-ACn can accommodate one hundred lines, fifty of which may be active in association with one of the processing systems P.

The processing systems P**1**-Pn are similar, therefore, only the processing system P**1** is shown in any detail. Collectively, the processing systems P**1**-Pn are interconnected with a command computer terminal CT, at least one interface terminal IT, at least one printer PR and an audio unit AD. The command terminal CT is separately coupled to the audio unit AD.

As represented, the processing systems P**1** through Pn each contain a number of individual function units or processors PR**1** through PRn. Although various other configurations and arrangements may be employed, the explanation is facilitated by including a plurality of individual function units as treated in detail below.

Considering the processing system P**1**, fifty lines from the automatic call distributor AC**1** are connected to the interface **20**, an exemplary form of which may be a commercially available Centrum 9000 unit. The interface **20** incorporates modems, tone decoders, switching mechanisms, DNIS and ANI capability (call data analyzer **20** *a*) along with voice interface capability. Note that the interface may actually perform analysis on data. However, to preserve the disclosed embodiment manageable, major analysis is explained with reference to processors.

Generally, DNIS capability is a function of the communication facility C (composite telephone system) to provide called terminal digital data indicating the called number. ANI capability is a similar function whereby the digital data indicates the calling number with calling terminal digital signals. Both capabilities are available for use with equipment as the interface **20** and to provide control through the call data analyzer **20** *a*.

Accommodating up to fifty independent calls on separate communication paths to the central station D, the interface **20** is capable of providing analog (voice) signals to prompt each caller. Also accommodated are digital signals including the DNIS and ANI signals. The system contemplates the possibility of utilizing sequences of lines in rotary as well as blocking sequences of lines, the numbers for which command a particular program or operation format of a function unit as disclosed in detail below.

The interface **20** provides the connection of the fifty lines to a switch **21** which is in turn coupled to fifty function units, or processors PR**1**-PRn. As indicated above, multiple function units, or processors, are described in the disclosed embodiment to facilitate the explanation. Of course, non-parallel techniques and multiplexed operations might well be employed as alternatives. For a similar reason, as disclosed herein, each of the processors PR**1**-PRn includes memory cells for each of the callers' individual data. Development and compilation of data in such cells according to various operating formats is described below. In the disclosed embodiment, the processors PR**1**-PRn are connected collectively to the command computer terminal CT (incorporating a CRT display), the interface terminal IT, and the printer PR. Note that the CRT display serves to visually display data regarding select subsets as explained in detail below.

Exemplary detailed structures for the processors PR**1**-PRn are described below; however, in general, the units may comprise a microcomputer, for example, programmed as suggested above and as disclosed in detail below to accomplish specific operating formats. As an integral part of such formats, a caller may be qualified as belonging to an entitled set of persons or to accommodate specific demographic objectives. Also, callers may be designated both with respect to their significance and their identification. For example, callers may have different significance in a format, depending on the time or sequence of their call. Also, the designation of a caller may be exceedingly important in relation to the caller eventually being isolated as part of a subset, the members of whom must be accurately verified. As described below, the designations may involve multiple elements which may include: random number assignments, encryption techniques, utilization of calling numbers, identification data, sequence of call and so on to facilitate reliable verification. Note that the communication facility C has a customer billing structure B that is interfaced by the system.

On the qualification and designation of callers, the system enters a data accumulation phase during which digital data (formatted at one of the telephone terminals T**1**-Tn) is processed by one of the processors PR**1**-PRn. In general, the processing evolves a subset (at least one caller) the members of which may be verified and confirmed.

Either during the data accumulation phase, or after the processing phase to isolate a subset, a distinct operation may involve actuating the interface terminal T**1** for direct local communication between the caller and an operator at the terminal T**1**. Another distinct operation may involve actuation of the printer PR to provide documents in relation to the operating format, as for providing award certificates as for verifying members of an isolated subset. Also, charge slips may be generated containing at least part of the data of a particular transaction.

An appreciation of the philosophical operation of a system in accordance with the present invention may now be enhanced by considering an exemplary operation of the illustrative embodiment of FIG. 1 to isolate a subset of people who are susceptible to a particular disease or infirmity. The exemplary operation might involve a geographical area, as a large city or population center, in which a particular health problem is somewhat acute. For example, a major population center might be polled where coronary artery disease is a significant problem. Accordingly, persons most susceptible to such disease could be identified for corrective recommendations.

People of the population center could be informed of the availability of a service for statistical health analysis. Accordingly, persons interested in their individual statistical situation would be motivated to utilize the service. Specifically, individual callers would use the remote terminals T**1**-Tn to contact the central station D through the communication facility C and thereby provide personal information that would enable a statistical analysis in relation to existing data so as to isolate and inform

(either real time or batch basis) those persons statistically most likely to be in need of corrective measures. In such applications, it may be important that the caller's identity be subject to reliable verification. Other applications or programs also may present a critical need for positively verifiable identification to the extent that credit card numbers and/or personal identification numbers may be employed.

An exemplary operation of the system, with regard to a specific caller, will now be treated referring somewhat concurrently to FIGS. 1, **2** and **3**. As indicated above, FIG. 2 indicates a data storage format for a memory cell in an exemplary processor PR and now will be considered with regard to an operating format in which data is composed for a caller. Pursuing the above example, assume the existence of a caller at the remote terminal T**1** (telephone number (213) 627-2222) who wishes to pursue health-related information on the basis of statistical analysis. The caller lifts the hand piece **10** and in accordance with conventional techniques actuates the push buttons **14** to call for a select operating format, e.g. telephone number (213) 627-3333 and thereby establish communication through the facility C with a designated function unit in the central station D. Receiving the call signal, the automatic call distributor AC**1** associates the called number ((213) 627-3333, rendered available using standard telephone DNIS techniques) through the interface **20** and the switch **21** to attain connection with the specific processor, e.g. the processor PR**1** formatting the health-related program. Accordingly, the processor PR**1** cooperates with the interface **20** to cue the interface **20** to operate as a voice generator.

The sequence of operations is represented to be initiated in FIG. 3 by the “enter” block **40** which is accordingly followed by a “cue voice generator” command block **42**. If the ANI equipment is not employed, the voice generator in the interface **20** formulates speech, a representative form of which might be: “Thank you for participating in the coronary artery disease statistical analysis. Please give us your telephone number by actuating the call buttons on your telephone instrument.”

Acting on the instructions, the caller would push the buttons **14** in sequence to indicate his telephone number, e.g. “(213) 627-2222”. Alternatively, the interface **20** can accept the calling number ((213) 627-2222) according to its provision by standard ANI equipment of the communication facility C.

The resulting data signals are communicated from the interface unit **20** (FIG. 1) to the processor PR**1** for testing the telephone number as valid or entitled. Essentially, the format of a proper number prompts production of a valid or “good” signal. The test is indicated by the block **44** (FIG. **3**). If the response is not valid or entitled, for example contains an inappropriate number of digits or has been used to a point of excess, the operation of block **46** is initiated again cuing the voice generator **30** (FIG. **1**). The voice generator accordingly instructs the caller, e.g.: “You have not entered a proper telephone number. Please reenter your telephone number by pressing the appropriate call buttons.” The caller is then allotted a predetermined period of time to make a proper entry with the consequence that the system moves to a test operation as indicated by the block **48** (FIG. **3**). Specifically, block **48** poses the query: “Is the second try good?”

If the caller is again unsuccessful, the system purges the record as indicated by the block **50** and the call is terminated as indicated by the block **52**. In an alternative mode, the processor PR**1** may abort the interface and couple the interface terminal IT for direct personal communication with the caller. The interchange would then proceed, person-to-person.

If the caller responds with a proper telephone number, the operation proceeds. Specifically, the system sequences to record the response of the proper telephone number as indicated by the block **45**. That is, the caller's telephone number is recorded in an assigned specific memory cell identified with the caller. The format of the cell C**1** is indicated in FIG. **2**. The first portion, section **53**, contains a form of identification data, i.e., the caller's telephone number, i.e. “(213) 627-2222”.

Note that as explained above, if the second attempt to formulate a proper number is successful, as manifest by the block **48** (FIG. **3**), the response is recorded at that stage. In either case, exiting from the block **54** (FIG. 3) invokes the next operation of again queuing the voice generator as indicated by the block **56**.

As an alternative format, if a selective-group polling operation is performed, or callers are otherwise to be cleared for entitlement as mentioned above, a caller may be qualified by providing a “one-time” key number. The processor PR**1** may incorporate a look-up table for proper key numbers which numbers may be coded using any of a wide variety of techniques. As a simple illustrative example, the key may comprise a precise number of digits that always total a particular numerical value.

The system proceeds after the caller is qualified. Specifically, the cue to the voice generator of the interface **20** (FIG. 1) as represented by the block **56** produces a request for further information from the caller with further identification data and answer data. For example, the voice generator might request information by stating: “Please use the telephone buttons to indicate initials of your name.”

The detailed operation is not represented in FIG. 3 as it is similar to the operation illustrated by the blocks **42** through **54**. However, again, a proper response is registered in the storage cell C**1** as illustrated in FIG. 2 by the number “**53**” also registered in the first section **53** of the cell.

The cycle of obtaining digital information from the caller next is repeated with respect to answer data, i.e. specific health data. For example, as illustrated in FIG. 2, the next section **58** in the cell C**1** receives an accumulation of health data, including the caller's age, weight, . . . , pulse rate, and so on. Representative digital numbers are illustrated in FIG. **2**.

During the course of the telephonic communication, the processor PR**1** formulates identification data for the caller specifically including: the chronological sequence of the call, the assigned designation of the call, and a set of acknowledgment digits for the call. Such data identification is registered in the caller's assigned cell C**1** in accordance with the format of FIG. 2 being stored in sections **62**, **64** and **66**. Note that the data may be stored in a coded interrelationship. For example, the acknowledgment digits may be related to the call record sequence. In the illustrative example, the chronological order number of the caller is **4951**. The acknowledge digits may be derived from the sequence number. For example, as illustrated, a coded relationship may be established by adding "two" to each of the individual record sequence digits. Considering the example numerically:

Adding without propagated carries:

4951

2222

6173

Note that the confirmation data as acknowledgement digits can be extremely important, as to communicate with an isolated member of a subset. For example, identification could be published or circulated, as by a television broadcast, then respondents checked by use of confirmation data that may be confidential.

Continuing with the above example, the call chronological sequence registered for the caller is **4951** as represented in the section **62** while the acknowledge digits are **6173** as registered in the section **66**. Additionally, the processor PR**1** develops an assigned designation number, e.g. designation "**4951684**", which is registered in the section **64**, the acknowledge code or digits, e.g. **6173**, being registered in the section **66**. These values are formulated in accordance with conventional number techniques during the data acquisition phase. With the exemplary numerals formulated, the operation proceeds.

The processor PR**1** (FIG. 1) cues the internal memory. That operation is indicated by the block **68** (FIG. **3**). Thus, the processor PR**1** fetches the call record sequence number, assigns a designation (if not previously assigned), and encodes the sequence number as the acknowledgment digits (if not previously accomplished). These operations are indicated by the block **70** (FIG. **3**).

Next, the processor PR**1** (FIG. 1) cues the voice generator in the interface **20**, as indicated by the block **72** (FIG. 3) to provide information to the caller. Specifically, for example, the voice generator in the interface **20** (FIG. 1) might signal: "This transaction has been designated by the number **4951684**, and is further identified by the acknowledgment digits **6173**. Please make a record of these numbers as they will be repeated. Specifically, the designation number is **4951684**. The acknowledgment digits are **6173**. Please acknowledge this transaction by pressing your telephone buttons to indicate the acknowledge digits **6173**." In various applications as those involving security, the order and acknowledgment of callers may be very important. Therefore, data for confirmation associated with the order is important.

The system next proceeds to the test mode as indicated by the block **76** (FIG. **3**). If the caller provides the correct acknowledgment digits, the data is confirmed in the record as indicated by the block **80** and is registered in the cell C**1** (FIG. **2**). Additionally, the voice generator is sequenced as indicated by the block **82** (FIG. 3) to indicate the close of the communication and that the transaction is terminated as represented by the exit block **84**.

In the event that a caller cannot confirm his acknowledgment digits, as indicated by the block **76**, a repeat operation is performed as indicated respectively by the blocks **86** and **88**. Specifically, the voice generator is queued for a second instructional message. In the event that the second attempt also fails, the data is purged and the call discounted as indicated by block **90** and an exit block **92**. If the second try is successful (test block **88**), as indicated by the block **80**, the record is perfected as indicated above.

As a result of the likelihood of a large number of calls, as described above, data cells in the processors PR**1**-PRn (FIG. 1) are developed with specific information indicative of a statistical sampling of the populace of concern. The data of that statistical sampling may be self-generating of specific conclusions with respect to a subset of individuals, and/or supplemental data to clearly manifest a significant subset. For example, the data may indicate a significant departure from an assumed

normal characteristic. Such data, accumulated from the polling may be considered by logic comparisons in the computer **22** to select the subset of persons who should be isolated.

In addition to the self-generating conclusions available from the received data, the system may involve the introduction of external data. In the physical fitness example, such external data might take the form of national statistical data. In any event, the processing operation usually involves comparison testing which compares caller data from individual memory cells of the processors P**1**-Pn (FIG. 1) with test data that is supplied through the command terminal CT.

In the above example, members of the public in general were invited to use the service. A number of alternatives exist which might well impact on the statistical analysis. For example, a list may be preserved by a use-rate calculator to implement a consumable key operation. That is, a user is qualified to a specific limited number of uses during a defined interval.

As another example, callers might be restricted to the purchasers of a specific product as a medical apparatus for measuring blood pressures, heart rates, or so on. In such situations, it will be apparent that the statistical data will be somewhat distorted from an average or normal sampling. Clearly, the processors P**1**-Pn can be programmed to take into account such considerations. In that regard, the processors might also verify identification data proffered by a caller. Such data might take the form of a credit card number or a personal identification number. Methods for verification of such numbers using computer techniques are discussed below.

As indicated above and detailed below, the system can be programmed or formatted for use in a variety of applications. Preliminary to considering exemplary forms of such applications, reference will now be made to FIG. 4 showing an exemplary structural form for the processors PR**1**-PRn. From the switch **21** (FIG. 1) a pair of communication lines **90** and **91** are indicated in FIG. 4 (top left). The line **90** provides signals from a processing unit **92** while the line **91** provides signals to the processing unit **92** along with other components as represented in FIG. **4**. The separate lines **90** and **92** facilitate explanation.

The processing unit **92** may take the form of a mini-computer programmed to accommodate the functions of various applications, as disclosed in detail below. As indicated above, the system may utilize a plurality of independent function units or processing units, e.g., processing unit **92**, operating in a somewhat parallel configuration, or alternatively, a limited number of processors may be driven sequentially to accommodate the functional operations as described.

The input line **91** (upper left) is connected specifically to a qualification unit **93**, a sequencer **94** and a designation unit **96**, as well as the processing unit **92** as indicated above. The qualification unit qualifies access from a remote terminal T**1**-Tn to the processing unit **92** as described in detail below. In accordance with various applications or operating formats, the qualification unit **93**, the sequencer **94** and the designation unit **96** operate preliminarily with respect to individual callers. Generally, these units qualify or test callers for entitlement, develop a sequence-of-calls record and provide forms of designations for callers that may be authenticated. As described in detail below, the units function in sequence to accomplish such operations and accordingly are each individually connected to the processing unit **92** and a buffer storage **97**. Essentially, the buffer storage **97** is illustrated separately from the processing unit **92** along with the unit **93**, sequencer **94**, unit **96**, and so on, again in order to facilitate the explanation. Similarly illustrated are a memory **98** (with cells C**1**-Cn), a look-up table **103** and a clock **105**.

Considering the processor of FIG. 4 in further detail, the qualification unit **93** (upper left) is connected to a look-up table **99** and a use-rate calculator **100**. The designation unit **96** (top center) is connected to a random number generator **101** and an encryptor **102**.

In view of the above structural description of the system, consideration will now be given to certain specific applications in relation to the operation of the system. In that regard, the operation of the system will next be considered to automate a mail-order facility.

Assume that- a caller at a terminal T**1** (FIG. 1) dials a specific number to identify a mail order interface with the system of FIG. **1**. For example, assume the telephone number “(213) 627-4444” for such an interface. Accordingly the caller dials the number at the remote terminal T**1**. As a result, the communication facility C couples the terminal T**1** through the automatic call distributor AC**1**, the interface **20** and the switch **21** to a select processor PR**1** identified and programmed for a mail-order operating format. Note that the communication facility C provides the dialed number (“(213) 627-4444”) to the processing system P**1** through well known telephonic equipment DNIS. Accordingly, a program is selected to execute the mail order interface.

As a preliminary action, a voice responder in the interface **20** might be cued by the processing unit to identify the mail-order house and indicate that the order will be taken by computer. Either before or after qualification, the caller might be advised that if he prefers to communicate directly with a person, or needs such contact at any point in the communication, he may accomplish it simply by pushing the asterisk button (*) at the terminal T**1**. Such action forms an abort signal that is detected by the

processing unit **92** to transfer the communication to the interface terminal IT (FIG. **1**). Alternatively, the customer may be asked (by voice cue) to provide detailed information as name, address, etc. which is recorded for later processing.

After the preliminary information is supplied to a caller, the qualification phase is initiated. For example, the interface **20** might actuate the terminal T**1** to announce: "Please indicate the type of credit card you will use for your purchase by pushing the button number 'one' for Mastercharge, 'two' for . . . ."

The caller's response, indicating a specific credit card, will be stored in a data cell; however, the data is developed initially in the buffer **97**. The format and data for the present example (in the buffer **97**) will be explained with reference to a storage block format **104** as illustrated in FIG. **5**. The first data block **130** accordingly registers a digit to indicate the card that will be used to support the caller's purchase.

Using voice prompt, the interface **20** next instructs the caller to use the telephone buttons to indicate his credit card number and the expiration date of the card. That data is stored in the register **104**, specifically in the blocks **132** and **134** as illustrated in FIG. **5**.

Next, the caller is asked for his customer number, as it may appear on his catalog. That number is stored in a block **136** of the block format register **104**. Note that the caller may not be identified in the files of the mail-order house and in that event, the operation may be shifted to a manual operation to be continued through the interface terminal IT (FIG. 1) as explained above. For a television-initiated mail-order transaction, other numerical codes might be employed as to key into broadcast schedules. For example, a code might be used to indicate program times and thereby enable evaluation of the productivity of such program times. Such operation may be performed during the designation-phase as described below.

To continue with the explanation of the automated format, assume that the customer has a file customer number and that it is stored in the block format register **104** along with his credit card number and expiration date. From that location, the data is checked by the qualification unit **93** (FIG. 4) for propriety as part of the test or qualification phase of operation. The check or test is in two stages and both are performed during an interval designated t**1**, the qualification unit **93** operating under control of the processing unit **92**.

First, the data is verified as representing valid and proper data formats for the customer's number, the credit card number and expiration date. The second operation involves consulting a so-called negative list to assure that the identified card and customer's number have not been cancelled, as for example in the case of credit cards that have been lost or stolen. Detailed structure for such tests is described in the parent case from which this case continues and may be incorporated in the qualification unit **93**.

With the successful completion and verification of the preliminary data in the block format register **104**, the qualification phase of operation is concluded and the system next interfaces with the caller to acquire and process data for a specific order of merchandise. Note that in the mail-order operating format, the sequence of the call is not normally significant. However, the sequencer **94** may log the time during a period t**2** if deemed worthwhile.

Somewhat as described above in relation to the initial operating format (health poll), the voice generator in the interface **20** prompts the caller through a series of exchanges that load the storage block format register **104** with a merchandise order. Thus, as purchase items are confirmed, the register **104** is loaded as exemplified by the blocks **140** and **142**. The interchange continues until the customer indicates he does not wish to order any additional items. The system then operates the designation unit **96** (FIG. 4) during the interval t**3** to develop and announce the acknowledgement digits as stored in the block **144** (FIG. **5**). The acknowledgement digits serve to identify the order both for the caller and the mail-order house. Accordingly, tracing is facilitated. The data (FIG. 5) is then transferred from the buffer **97** (FIG. 4) to a select memory cell C**1**-Cn.

During the next interval t**4**, the processing unit **92** (FIG. 4) isolates data of the cells C**1**-Cn to facilitate the mail-order process. In that regard, the processor **92** may incorporate structure and processing techniques as disclosed in the parent case.

Of the wide variety of other operating formats and applications in accordance herewith, further examples will now be described with reference to the systems of FIGS. 1 and 4. However, from a consideration of the operating formats treated below, it will be apparent that certain structural elements have reoccurring significance in the combination. Specifically, such elements include the structures: (1) utilizing the called number to select a specific operating format, (2) for screening or selecting callers who will be accepted based on various criteria, (3) for designating callers in a manner to enable subsequent positive identification and (4) various processing aspects of the data manipulations including the provision of at least a portion of certain ID data provided directly from the telephone apparatus. With respect to the data processing,

distinctive elemental features include the utilization of external data not available during the interval of gathering data, the utilization of an interrelationship between the composite data collected during a data acquisition period, and the operation of utilizing time or sequence of callers to accomplish a subset.

As the next illustrative operating format, an instant lottery system will be described. Accordingly, assume the existence of a legalized state lottery accommodated by the telephone system utilizing a pay-to-dial number ("(213) 976-xxxx") and restricted to a limited number of uses for defined intervals of time. For example, a person might be entitled to play the lottery a limited number of times or to the extent of a limited dollar value during a predetermined interval.

From the terminal T**1** (FIG. 1) the caller would actuate the push buttons **14** to establish contact with the processing system P**1** coupling would be through the communication facility C, the automatic call distributor AC**1**, the interface **20** and the switch **21** as described in detail above. The initial operation then involves qualification of the caller to participate in the instant winner lottery. Again, ANI or caller interface techniques may be employed. If the caller is involved, the interface **20** is actuated by the qualification unit **93** during the operating interval ti to instruct the caller: "Please key in your telephone calling number". As indicated above, an alternative involves the system simply registering the calling number on the basis of its provision by ANI equipment.

In any event, after the caller's telephone number is registered, the instruction is given: "Participation in instant winner lottery is for persons over twenty-one years of age. Accordingly, please key in the year of your birth". A driver's license or credit card number may be similarly registered to confirm age. Alternatively, the combination of telephone number and date of birth could be used. In any event, the caller's data is registered and the qualification unit **93** then functions to test the data as provided. Specifically, the caller's telephone number is checked in a look-up table **99** to determine whether or not it is a proper and currently valid number for use in the lottery. Concurrently, the number is checked by the use-rate calculator to determine the number of times it has been used in excess of a predetermined number of calls or dollar value to participate in the lottery during a current interval of monitoring.

If the data indicates a qualified caller, the system proceeds to the next phase of designating the transaction. Note that the sequence is not significant in this operating format with the consequence that the interval t**2** and the operation of the sequencer **94** may be bypassed. Rather, the designation unit **96** operates during the interval t**3** to provide the caller with a designation for the current transaction and if applicable, updates the file as to current use or dollar value remaining for the caller's use. As explained above, the random generator **101** with or without the encryptor **102** may be employed to create an identification number which may include an encrypted form of the caller's telephone number. Accordingly, data for the transaction is established in the buffer **97** then set in a cell of the memory **98** (FIG. **4**). Specifically, the completed data cell format might be as follows: Telephone No.—Birth Year—Designation—Random No.

The system next functions to generate the random number as indicated above which will then be tested against a series of other numbers to determine whether or not the caller is a winner. In that regard, elements in the processing unit **92** which accomplish the operation are illustrated in FIG. 6 which will now be considered in detail.

A random number generator **160** functions on command to provide a three-digit number. With the consummation of a call, the random number generator **160** is actuated to provide the caller's random number in a selected caller cell **162**. From that location, the caller's random number is compared with numbers from a register **164** by a comparator **166**. The numbers in the register **164** were previously passed through a gate **174** from the generator **160**. In the event of coincidence, the comparator provides an output "yes" signal to a line **168**. Conversely, the failure of coincidence prompts the comparator **166** to provide a "no" output to a line **170**. Essentially, a "yes" indicates a win while a "no" indicates the caller has lost.

The elements of FIG. 6 provide a random operating format to determine winners on a somewhat statistical basis; however, the system increases the probability with the passage of time when no win occurs. In that regard, at the outset of an operating cycle, the random number generator **160** provides a random number that is passed through the gate **174** to the register **164**. In the exemplary format, a three-digit number would be provided. At that stage, the caller's random number, from the cell **162**, would be compared with the single number in the register **164** by the comparator **166**. However, with the passage of time, calls are tallied or time is metered by a counter **178**. Accordingly, upon the attainment of a predetermined count, the gate **174** is again qualified to enter another number in the register **164**. Accordingly, an increasing set of numbers are held in the register **164** for comparison with each caller's number. Of course, the more numbers in the register **164**, the higher probability of a caller winning and that relationship depends upon the duration or number of calls since the last winner.

Either a win or a loss as indicated within the processing unit **92** (FIG. 4) prompts the interface **20** to respond appropriately to the caller announcing his results. If there is a win, the designation may be reinforced and additional identification may be taken as explained above. Of course, if the prize simply involves a credit on the caller's telephone bill or his credit account, identification and designation become less critical considerations.

In the event of substantial awards to be claimed, the processing system P**1** (FIG. 1) may actuate the printer PR to produce a positive identification of the winner, which document may be redeemed only by the caller providing the assigned designation along with confirmation of his identification data.

Generally in relation to awards, the processing unit **92** may also utilize a random number format for determining the significance of awards. That is, a random number may be actuated to provide numerals from one through twenty, for example, the magnitude of the number generated for a caller indicating the significance of his award. Normally such information would be provided to the caller and registered in his memory cell.

With respect to memory cells generally, it is to be noted that actuated memory cells may be cleared for callers who are not winners. Accordingly, a limited number of memory cells store the subset of winners for subsequent confirmation processing and so on.

As another operating process format in accordance with the present invention, consider an auction sale. As disclosed herein, the auction format is associated with television as, for example, in the form of a cable channel for dedicated use during an interval of an auction sale.

Preliminarily, in accordance with the disclosed exemplary format, persons wishing to participate in the auction sale would make preliminary arrangements involving utilization of the system to establish authorization data for qualified bidders in cells C**1**-Cn of the memory **98** (FIG. **4**). In an alternative format, the bidders could simply be qualified immediately before bidding, as on the basis of a charge-card number or other identification.

Generally, it is contemplated that callers are coupled into the system only during the bidding on specific items of merchandise. Accordingly, some prequalification may be desirable to facilitate the rapid accumulation of a bidding group with the introduction of a unit of merchandise.

In accordance with the disclosed format, an auctioneer conducts the sale in a somewhat traditional manner, recognizing that he is interfacing a relatively large audience through the system of the present invention and with a television connection. Specifically, the auctioneer is cued as to audience reaction by a monitor incorporated in the command computer terminal CT (FIG. **1**). Essentially, the auctioneer is given an abstract or summary of the relative bidding as the auction progresses. In one format, the caller sees the auction on a television receiver. That is, the monitor may be covered by a television camera to inform the audience and particularly interested bidders. Consider the detailed steps of the operation.

As the auctioneer announces the next item for sale, it is televised to potentially interested bidders. In addition to being informed of the merchandise, potential bidders might also be reminded of the telephone number for participating in the auction. Accordingly, any interested person at a remote terminal T**1**-Tn may dial the auction number and obtain access to the processing systems P**1**-Pn. The caller would have a television set available, tuned for example to a cable channel.

Any preliminary qualification as indicated above will then be performed along with any appropriate designation. With regard to the designation, unless callers are identified as part of the qualification step, the designation unit **96** (FIG. 4) assigns a limited-digit number to individual callers for use by the auctioneer interfacing the command computer and terminal CT. Further designation and sequencing as disclosed herein also constitute part of the process. To the extent that qualification and designation operations may be performed, the operations are performed as described above with reference to FIG. 4 by the qualification unit **93** and the designation unit **96**. Of course, any of the safeguards and limitations as described herein may be employed as deemed appropriate for an auction format.

After the preliminaries, the auctioneer initiates the bidding with respect to a particular item that is observed by the callers on a television receiver as through a cable channel. Note that the audio may be variously-coordinated through the telephone communication facility C and the audio channel of the caller's television. In a simple format, after an introductory phase, communication to callers with respect to the bidding is provided through the television link. Alternatively, the audio unit AD (FIG. 1) may be employed.

Essentially, the auctioneer initiates the bidding by stating an initial value for the opening bid. Callers are invited to bid by actuating the push buttons **14** (FIG. **1**). For example, the auctioneer may invite an initial bid of one hundred dollars asking callers to so bid by entering an asterisk (*) by punching the button so designated. In accordance with one operating format, cells in the memory **98** (FIG. 4) are actuated to register the bidding number in identified relationship with several calls. Note that although a record may be desirable, it is not usually necessary to record all bids, particularly at initial bidding figures. In any event, the individual processing units, e.g. unit **92** in individual processors PR**1**-PRn are interconnected (FIG. 1) and operate to select the final and key bids.

After attaining the initial bid, the auctioneer may invite further bidding by seeking a bid of two hundred dollars or any bid. Such a bid might be accomplished either by punching the asterisk button to attain the solicited bid, or by using number buttons to enter a different bid, e.g. two hundred fifty by buttons “2”, “5” and “0”. Again, cells of

the memory **98** are actuated to record select bids (sequence) at the higher value.

The status of the bidding is presented to the auctioneer by the monitor of the command computer terminal CT (FIG. **1**). Specifically, the auctioneer is provided an indication of the number of bidders at each level. If a sizeable number of callers bid at a specific value, the auctioneer may wish to advance the price significantly for the next round of bidding. Thus, the auctioneer proceeds until a small group of remaining callers are addressed. Note that the display of the command terminal CT (FIG. 1) may also inform the auctioneer of fresh bidders.

As the selection process proceeds, signals from the clock CL (FIG. 1) are introduced to indicate the sequence of bidders. For example, assume the bidding has proceeded to a stage where only three bidders remain active. The auctioneer is informed by the command terminal CT of the order in which the callers made their bids. The sequence is also of record in the cells of the memory **78** (FIG. 4) to indicate the sequence in the event that the final bid involves more than one caller. Of course, the first caller to respond with a bid would have priority in the purchase.

Normally at the conclusion of the bidding on a particular item, the contents of the cells in the memory **98** would be purged with only the final bidders being held in general memory within the processing unit **92**. Of course, it is important to maintain a record of back-up bidders in the event the sale is not consummated with respect to the first of the highest bidders. That is, a subset of the highest bidders is preserved for each item of merchandise in the event that the highest bidder fails to qualify or the sale otherwise cannot be consummated. Of course, a distinct advantage of the system is the ability to accommodate a vast auction participation group for items of substantial value and as a consequence the distillation of a subset of callers is exceedingly valuable information.

To consider another operating format in association with the television media, a system will now be described whereby television viewers participate on a real-time basis in a game show for prizes. The ability to involve television viewers in a program has the potential of expanding program interest along with the expanded participation.

Game shows in accordance herewith may take any of a wide variety of forms as several well known programs in which studio contestants compete for prizes. In utilizing the system of the present invention to involve remote participants, it may be desirable to preliminarily qualify and designate callers as explained above. Specifically, prior to participating in an actual game show, interested participants interface the system as depicted in FIG. 1, and in the course of an exchange as described above, the qualification unit **93** and the designation unit **96** cooperate with the processing unit **92** to accomplish preliminary data on potential participants in cells of the memory **96**.

Various games will involve different screening processes and clearances. For example, a child's television game format may require parental clearance and in that regard written communication may be required for approvals. Such approval may require the assignment of a personal identification number to the child player as qualifying identification data.

As explained above, clearances may be perfected through the look-up table **99** (FIG. 4) in association with the qualification unit **93** or approvals through a consumable key step may be extended to incorporate functions of the processing unit **92** in association with the memory **98**. For example, if qualification simply involves a check-off operation, the look-up table **99** will normally be employed. However, in the case of preregistration for a participant, as in the case of the auction sale, the memory **98** is involved with the qualification unit **93** through the processing unit **92** to establish a data cell C**1**-Cn for each qualified participant. Thus, each potential participant to be qualified interfaces with the processing unit **92** during a preliminary interval of operation to provide data in one of the cells C**1**-CN to facilitate qualification for participation during a real-time game show.

At the time of the show, callers are qualified simply by reference to their assigned memory cell data for a verification. Thereafter, the caller's exchange information to supplement their data as with respect to the play which follows. Specifically for example, a caller might select a studio audience participant with whom the caller is to be allied. The interface operation may be essentially as described above wherein a voice generator in the interface **20** (FIG. 1) provides signals which activate the remote telephone unit to speak the instruction: “If you wish to play with Player No. **1**, please push button No. **1**; if you wish to play with Player No. **2**, please push button No. **2** . . . and so on”. The caller may also be instructed to indicate the extent of a wager. For example, “Push the number button indicating the points you wish to risk”.

The participant data is stored in an assigned cell of the memory **98** (FIG. 4) for the caller and as the game proceeds, the processing unit **92** tallies the caller's score. Scores are interrelated between individual processing units to actuate the terminal CT. Thus, individual accounting occurs for each of the calling participants on an on-line basis dependent upon the success of the studio players and their association with the callers. On-going accounting data may be provided at intervals or real time by the recorded voice to each contestant.

According to the described format, after an interval of play, the processing units, as the unit **92** (FIG. **4**), operate to isolate a subset of caller-players who have amassed the highest scores. Of course, various arrangements may be provided for awarding prizes to the select subset of winning callers.

The above format involves a real-time game show with an on-line operating format. A somewhat similar format involves nonreal-time operation and in that sense, callers may interface with the system of the present invention before and after the show; however, not primarily during the show. Such a show might involve a quiz for callers based on their ability to perceive and remember occurrences within the show. Preregistration may be employed, however, is not essential. Rather, callers may call after the broadcast of a program. In that event, sequence or time clocking may be very important to limit or control individual interfaces to a specific time or geographic "window". That is, as suggested above, allocation-routing equipment and techniques may be employed in various of the formats to window callers. With the system, callers are screened or qualified at the time of a call, identified in a particular calling sequence, designated for identification and quiz answers are given for subsequent processing. Alternatively, players could participate by providing their credit card for billing or be billed through the "pay-to-dial" network. Consider an exemplary format.

A key to participation in the game show may involve the purchase of a particular product. For example, a person desiring to participate may purchase a product which carries a concealed key number. The number serves as a caller's key to participation in the game show.

In accordance with the disclosed operating format, after watching the broadcast of a television show (possibly a serial episode) the participant actuates the push buttons **14** at one of the remote terminals T**1**-Tn to accomplish an interface communication with the select operating format. For example, the caller may actuate the buttons **14** for the station number "277-7777" which identifies the game format of current description.

Assume responsive operation of the communication facility C to couple the caller through the automatic call distributor AC**1** to the interface **20**. Upon establishing a connection, the interface **20** receives the caller's telephone number through ANI equipment and a data cell in the memory **98** (FIG. 4) is assigned to the caller. Specifically, for example, associative coupling is provided for the caller through the switch **21** (FIG. 1) to the processor PR**1** containing the memory **98** (FIG. 4) and a cell C**2** assigned to the caller. A block format **200** is illustrated in FIG. 7 indicating the data that is developed in the cell C**2**. At the outset, the caller's telephone number is stored in a section **201** followed by uses/month in section **202**.

Next, the caller is greeted and requested to give the key number entitling him to participate in the game show. The instruction constitutes an initial action to take place in an interval of qualification during the time t**1**. The caller actuates the buttons **14** providing digital representations to the qualification unit **93** (FIG. 4) and-the look-up table **99** is consulted. Note that the table **99** may be a large, shared unit that tabulates each of the key numbers and accounts for their use. If the caller has identified a proper key number, the process proceeds and the key number is accounted, i.e. incremented or decremented to the limit of use if any. Alternatively, a repeat information operation may be requested as described in detail above.

As a further check during the qualification stage, the use-rate calculator **100** may function to determine whether or not an excessive number of calls have originated from the designated number. Thus, consideration involves calls or value with reference to a predetermined period of time. Again, a shared calculator may be used or addressing may obtain selectivity on the basis of calling numbers. If a large number of calls have originated from a single telephone terminal, a fraudulent situation may be suggested. Assuming no such indication occurs, the number of uses is registered in a section **200** (FIG. 7) and the operation proceeds from the interval t**1** to interval t**2**.

During the interval t**2**, the sequencer **94** registers the precise time of the call in the buffer storage **97**, specifically in a section **204** as illustrated in FIG. **7**. With the entry of such data, the system passes from the operating interval t**2** to t**3**.

The caller is next asked to identify himself in some specific manner. For example, the caller may simply be asked to provide the year of his birth. Alternatively, somewhat comprehensive information may be taken as in the form of drivers' license numbers, social security numbers and so on. Of course, such data may be employed for subsequent identification of the caller and, accordingly, is registered in the buffer storage **97** (FIG. **4**). Specifically, identification information is registered in section **206** of the block **200** as shown in FIG. **7**.

In addition to receiving identification information from a caller, the system assigns a designation to the caller; Specifically, the random number generator **101** (FIG. 4) provides a number which may be encrypted along with other identification data as the caller's personal identification to provide a numerical designation that is registered in the storage **97**. Specifically, the designation is stored in a section **208** as illustrated in FIG. **7**. With the designation operation complete, the interval t**3** terminates initiating the data accumulation phase which occurs during an operating interval t**4**.

At this juncture, operating elements within the processing unit **92** will be considered in relation to an explanation of the manner in which select questions are provided to a caller and his answers received and recorded for subsequent processing to determine winners.

Preliminarily, reference will be made to FIG. 8 showing elements involved in the operating format which are contained in the processing unit **92** (FIG. 4) in association with the memory **98**. To avoid confusion, the elements identified in FIG. 8 are designated by fresh numerals.

To accommodate the exemplary operating format, a dramatic program might be recorded preparatory to the television broadcast. A substantial number of questions would then be formulated based on the dramatic program. For example, “How many people were present when the will was read?”

It is contemplated that the dramatic program would be broadcast to different geographical segments of the country during different time intervals. To accommodate the different time intervals, it is proposed to utilize different questions for each geographic segment. That is, the basic format can remain the same, only the questions change by time zone to avoid study and collaboration on questions as a result of time shifts. A question propounded to a Chicago caller should not be repeated to a Los Angeles caller. In any event, callers might be given three questions randomly drawn from a pool serving one geographic segment and three questions drawn from a different pool serving another geographic segment.

The signals for prompting a voice generator are registered in memory sections MS**1** through MSn. Each of the memory sections MS**1**-MSn is served by an address input AI**1**-AIn respectively. Similarly, the address inputs AI**1**-AIn are instructed by random number generators NG**1**-NGn, in turn actuated by decoders DE**1**-DEn. Consider the operating sequence of the memory MS**1** as an example.

The decoder DE**1** is responsive to telephone calling numbers (provided by ANI equipment) indicative of a particular geographic area. Note, for example, that area code numbers afford an effective geographic classification of callers which is very useful in many formats or processes of statistical analysis in accordance herewith. Note that geographic (or other) classification in accordance herewith is also accomplished by the called numbers provided. Each of several television stations would solicit calls for different numbers as a result, either by DNIS or call channeling. Select processors would be reached through the interface units, e.g. interface **20** FIG. **1**. In operation, the decoder DE**1** determines a call is from a specific geographic area and accordingly provides a signal to actuate the random number generator NG**1**. As a consequence, the random number generator NG**1** provides a series of three random numbers in the form of addresses for the memory MS**1**. That is, the addresses may simply comprise three alphanumeric bits supplied to the address input AI**1** to prompt the provision of three sets of voice generator signals for announcing the three questions in sequence. For example, the first question might be as suggested above: “Push the button on your telephone for the number of persons present in the room when the will was read”.

The voice generator signals are supplied from the memory MS**1** (within the processing unit **92**, FIG. 4) to the interface **20** (FIG. 1) which generates audio signals to actuate the caller's hand piece **10**. Accordingly, the caller is instructed to answer three questions, the responses being recorded in a section **210** of the data block **200** (FIG. **7**). Note that the clock **105** (FIG. 4) may be utilized to limit the response period allowed each caller.

As indicated above, to accommodate broadcast of the program in a different time slot for a different geographic area, the decoder DEn (FIG. 8) actuates the random number generator NGn to address the memory MSn to provide three different questions as a result of a random selection. Accordingly, within a time or times (perhaps limited and offset) after the conclusion of the program, a substantial number of callers are accounted for in cells of the memory **98** and similar units of the composite system. The cells indicate sequences of calling and also may contain billing data where appropriate. That is, pay-to-dial operations avoid the need for billing, yet it may still be made of record.

Subsequent to the data accumulation phase of operation, the processing unit **92** (and its equivalents) is actuated during an off-line processing interval to isolate the subset of callers correctly responding to the questions. In accordance with one format, the subset of successful callers may be reduced to a sub-subset as by a random computer “draw” to define a group of significant winners. That is, a random number generator may be employed as explained above.

As an alternative to subsequent processing, the system may inform callers of their success during the course of the interface telephone call. That is, callers might simply be informed by cuing the voice generator: “Your answers are correct and in accordance with the program game, you will now be entered in the sweepstakes draw for the prize . . . ” Thus, the format defines a subset then further selects a sub-subset of winners. In any of the various formats, the status of the analysis can be televised by selecting a camera focused on the interface terminal IT.

Still another operating format for the system takes the form of polling operations to determine opinion or facts. An illustrative form of the format is disclosed below again in association with a television broadcast.

Generally, the illustrative polling format is contemplated in association with a television broadcast addressing a matter of current interest as, for example, a political issue or election. A master of ceremonies propounds questions to a viewing audience, many of whom are on-line through an interface of a system of the present invention. The master of ceremonies or commentator instructs the callers who are regulated and controlled by the system of the present invention to provide digital data which the system processes to inform the commentator as with regard to subsets of callers. For example, the commentator may be statistically informed as to the numbers of callers holding specific views. Consider a specific exemplary operating format.

Assume the existence of a system in accordance with the present invention installed for use in association with a television broadcasting facility. Of course, various previous arrangements could be involved; however, according to one arrangement a commentator simply invites members of the viewing audience to call a specific number and express their views with respect to a specific issue. Callers located at terminals T**1**-Tn (FIG. 1) activate the terminals to accomplish an interface with one of the processing systems P**1**-Pn as explained above. Note that the processor (or the interface **20** may involve operation of the qualification unit **93** (FIG. **4**) to prevent callers from loading the poll. That is, to prevent multiple calls from a single terminal that would distort a poll, the qualification unit **93** registers calls in association with the use-rate calculator **100**. Interfacing a specific processor, callers are screened by the qualification unit **93** (FIG. **4**). In such a poll, it may be important to control the sampling group on a statistical basis. For example, it may be desirable to limit callers from each of several geographic areas. Accordingly, by the use of ANI equipment, the caller's telephone number is provided to the qualification unit **93** during the preliminary interval t**1**, and a determination is performed with regard to the number of involved callers from the geographic area using the look-up table **99**. On attaining a full quota from a specific area, a subsequent caller may be informed that the lines are full. Alternatively, the caller may be requested to provide his telephone number for screening in the event ANI equipment is not available.

The caller may be requested to provide additional information so as to poll a balanced group. For example, a caller might be asked questions concerning age, political registration and so on by prompting the interface unit **20** to pose audio questions and testing the digital results through the qualification unit **93** as with reference to the look-up table **99**.

As indicated above, in the event that the broadcast television program is one of a series, it may be desirable to limit the extent of participation over a period of several programs. Accordingly, the use-rate calculator **100** (FIG. 4) may be employed in association with the qualification unit **93**. That is, if a calling number has participated in a prior poll, it may be denied access for a subsequent poll or its data not counted. Such operation would involve the use-rate calculator **100** in association with the qualification unit **93** performing logic tests to actuate the voice generator of the interface **20** for providing an appropriate interchange with a caller.

With the screening or qualification of a select group of callers, the sequencer **94** (FIG. 4) may or may not be involved to identify the order of callers. Also, the designation unit **96** may or may not be involved in view of the fact that for many polls there is little interest in subsequently identifying callers.

In the poll-format operation of the-system, it is important to provide a capability of defining select intervals during which callers may provide data. In one arrangement, with the consummation of a communication interface between a caller and a processor unit, the audio of the-television broadcast is keyed from the audio unit AD through the switch **21** (FIG. 1) for communication to the caller.

With a multiplicity of callers in interface relationship with the processors PR**1**-PRn as function units, a polling question is stated, for example: “If you favor expanded trade with . . . at the tone press button one; if you do not, press button two”.

To control the interval of polling, the command computer terminal CT (FIG. 1) is actuated to enable the callers timely access to the processors.

At the expiration of a polling interval, the interfaces may be terminated or additional questions may be propounded. In any event, subsequent to the data-gathering phase, the bulk data is supplied to the command computer terminal CT incorporating computing facility to isolate subsets for communication by the broadcast. Accordingly, an effective on-line poll can be conducted with statistical sampling control and prompt display of responses.

As explained above, the arrangement of the function unit (or units) may be variously embodied in a single processor or many processors, depending on various considerations as time sharing, multiplexing, paralleling and so on. The systems as described above embody the components bulked together in one location. However, components of the system could be spaced apart geographically, using dedicated lines or polling techniques. An illustrative embodiment is shown in FIG. **9**.

Call distributors CD**1**-CDn are at different geographic locations along with associated interface units IA**1**-IAn and IB**1**-IBn. Each of the interface units, as unit IA**1** is coupled to a central processor **251** as indicated by lines **252**, **254**, **256** and **258**. Each of the lines may take the form of a dedicated telephone line or a polling telephonic coupling.

In the operation of the system of FIG. 9, the call distributors CD are coupled to a telephonic communication system and accordingly allow the interface units I to provide interface communication between the central processing unit **251** and a multitude of remote terminals T**1**-Tn as illustrated in FIG. **1**. With data accumulated in the cells, it may be variously down loaded as to a central processing station. Thus, the distributed-component system is capable of executing the various formats as explained above with reference to the illustrative structure.

In view of the above explanation of exemplary systems, it will be appreciated that other embodiments of the present invention may be employed in many applications to accumulate statistical data, process such data, and define subsets of callers of concern. While certain exemplary operations have been stated herein, and certain detailed structures have been disclosed, the appropriate scope hereof is deemed to be in accordance with the claims as set forth below.

Patent Citations (435)

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US2902541A		1959-09-01		Credit verifying system
US2941161A	1954-05-26	1960-06-14	Gen Dynamics Corp	Broadcast paging system
US3060275A	1958-11-07	1962-10-23	Bell Telephone Labor Inc	Telephone system signaling
US3076059A	1958-06-20	1963-01-29	Bell Telephone Labor Inc	Signaling system
US3082402A	1960-05-10	1963-03-19	Scantlin Electronics Inc	Securities quotation apparatus
US3128349A	1960-08-22	1964-04-07	Bell Telephone Labor Inc	Multifrequency signal receiver
US3159818A	1960-04-08	1964-12-01	Scantlin Electronics Inc	Data storage system with selective readout
US3246082A	1962-03-26	1966-04-12	Levy Alfred	Telephone hold program system
US3249919A	1960-05-10	1966-05-03	Scantlin Electronics Inc	Securities quotation apparatus
US3299210A	1963-03-18	1967-01-17	Ibm	Apparatus for connecting a multichannel data processor with a plurality of telephone lines
US3337847A	1963-09-17	1967-08-22	North Electric Co	Communication system for connecting subscribers to a multiplex message synthesizing system
US3347988A	1963-06-17	1967-10-17	Bolt Beranek & Newman	Method of and system for remotelocation computer communication via telephone
US3371162A	1964-09-02	1968-02-27	Scantlin Electronics Inc	System for transmitting digital data via telephone lines utilizing a telephone as the input
US3381276A	1965-09-15	1968-04-30	Photo Magnetic Syst Inc	Computer systems

US3393272A	1965-11-19	1968-07-16	Hanson Oliver Wendell	Automatic telephone guest call system
US3394246A	1963-04-08	1968-07-23	Telecredit	Status-indicating system
US3482057A	1966-01-28	1969-12-02	Ibm	Automatic intercept system
US3515814A	1968-09-16	1970-06-02	Electronic Data Syst Corp	Sequencer and selector for automatic voice tone transmission
US3544769A	1967-04-05	1970-12-01	Digital Identification Systems	Electronic identification and credit card system
US3556530A	1968-05-23	1971-01-19	Howard Miller	Game having quick prize indication for wide area use
US3557311A	1968-01-02	1971-01-19	Compumatics Inc	Information transmission system including a unit for producing a printed record of information transmitted
US3568157A	1963-12-31	1971-03-02	Bell Telephone Labor Inc	Program controlled data processing system
US3569939A	1963-12-31	1971-03-09	Bell Telephone Labor Inc	Program controlled data processing system
US3571799A	1969-08-21	1971-03-23	Ibm	Data transmission terminal
US3573747A	1969-02-24	1971-04-06	Institutional Networks Corp	Instinet communication system for effectuating the sale or exchange of fungible properties between subscribers
US3581072A	1968-03-28	1971-05-25	Frederick Nymeyer	Auction market computation system
US3594004A	1968-03-15	1971-07-20	Howard Miller	Game having quick prize indication
US3617638A	1968-07-17	1971-11-02	Audac Corp	System for verifying credit card transactions
US3618038A	1969-12-24	1971-11-02	Edward S Stein	Telephonic data transmitting system
US3624292A	1967-12-06	1971-11-30	Scm Corp	Communication system including an answer-back message generator and keyboard
US3644675A	1970-06-04	1972-02-22	Frank W Watlington	Polling method utilizing telephone transmission and recording system
US3647973A	1967-12-04	1972-03-07	Peter James	Computer system utilizing a telephone as an input device
US3651480A	1963-12-31	1972-03-21	Bell Telephone Labor Inc	Program controlled data processing system
US3656113A	1968-11-01	1972-04-11	Umc Electronics Co	Control system for room reservation
US3665107A	1970-11-13	1972-05-23	Automatic Elect Lab	Monitoring circuit in data sets,with signal muting
US3675513A	1970-07-24	1972-07-11	Bell Telephone Labor Inc	Communications system for alphanumeric information employing audio tone signalling
US3688126A	1971-01-29	1972-08-29	Paul R Klein	Sound-operated, yes-no responsive switch

US3696335A	1970-04-21	1972-10-03	Jerome H Lemelson	Credit verification system
US3697702A	1970-07-16	1972-10-10	American Telephone & Telegraph	Selectably controllable announcement system
US3781810A	1972-04-26	1973-12-25	Bell Telephone Labor Inc	Scheme for saving and restoring register contents in a data processor
US3792446A	1972-12-04	1974-02-12	Pitney Bowes Inc	Remote postage meter resetting method
US3794219A	1972-09-06	1974-02-26	Rowe International Inc	Charged cup beverage merchandising machine
US3800283A	1969-11-12	1974-03-26	Sanders Associates Inc	Credit verifying unit
US3858032A	1972-04-10	1974-12-31	Transaction Technology Inc	Apparatus and method of coding information
US3870821A	1972-11-29	1975-03-11	Donald P Steury	Pushbutton telephone printer/recorder
US3881160A	1974-05-20	1975-04-29	Joseph I Ross	Catv multi-tap distribution box
US3889050A	1974-04-11	1975-06-10	Gte Sylvania Inc	Subscription television system and switching station therefor
US3909553A	1974-04-01	1975-09-30	Gte Automatic Electric Lab Inc	Line card for key telephone systems adapted to provide music during hold condition
US3912874A	1974-06-04	1975-10-14	American Telephone & Telegraph	Conference arrangement
US3914747A	1974-02-26	1975-10-21	Periphonics Corp	Memory having non-fixed relationships between addresses and storage locations
US3918174A	1974-02-21	1975-11-11	Nan C Miller	Game device
US3920908A	1974-06-25	1975-11-18	Constantine R Kraus	Buyer credit service for a telephone system
US3928724A	1974-10-10	1975-12-23	Andersen Byram Kouma Murphy Lo	Voice-actuated telephone directory-assistance system
US3934095A	1974-06-24	1976-01-20	Action Communication Systems, Inc.	Method and system for short term queuing of telephone calls in automatic inter-city telephone call connection system
US3947972A	1974-03-20	1976-04-06	Freeman Michael J	Real time conversational student response teaching apparatus
US3950618A	1971-03-25	1976-04-13	Bloisi Albertoni De Lemos	System for public opinion research
US3974338A	1973-06-25	1976-08-10	The Audichron Company	Apparatus for automatic message reprogramming of a message announcement system
US3982103A	1973-10-12	1976-09-21	Telecredit, Inc.	Credit verification system
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US3991406A	1963-12-31	1976-11-09	Bell Telephone Laboratories, Incorporated	Program controlled data processing system
US3998465A	1972-03-24	1976-12-21	Mascola Donald C	Telephone random number game
US4009342A	1973-04-19	1977-02-22	Siemens Aktiengesellschaft	Circuit arrangement for communication facilities wherein transmission paths can be employed for different types of message switching
US4012599A	1975-07-29	1977-03-15	Jerome Charles Meyer	Telephone communications system for the deaf
US4017835A	1974-02-11	1977-04-12	Randolph Richard D	System for verifying credit status
US4024345A	1976-01-14	1977-05-17	Strom Industries International, Inc.	Audio program and telephonic communication system
US4054756A	1976-09-29	1977-10-18	Bell Telephone Laboratories, Incorporated	Method and apparatus for automating special service call handling
CA1022674A	1970-07-23	1977-12-13	S. Thomas Emerson	Analog signal recording and playback method and system
CA1025118A	1970-07-23	1978-01-24	Periphonics Corporation	Analog signal recording and playback method and system
US4071698A *	1977-01-10	1978-01-31	Franklin V. Barger, Jr.	Telephone system for audio demonstration and marketing of goods or services
US4078316A	1976-06-24	1978-03-14	Freeman Michael J	Real time conversational toy
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US4145578A	1978-04-28	1979-03-20	Bell Telephone Laboratories, Incorporated	Position access preference method
US4150255A	1977-12-29	1979-04-17	Morgan Industries, Inc.	Conversational telephone call distributor
US4152547A	1977-11-29	1979-05-01	Theis Peter F	Selective monitor for an automatic telephone answering system
CA1056500A	1973-06-20	1979-06-12	International Business Machines Corporation	Read/write machine for magnetic striped document card
US4160125A	1977-05-23	1979-07-03	Digital Products Corporation	Telephone polling apparatus

US4162377A	1978-07-13	1979-07-24	Bell Telephone Laboratories, Incorporated	Data base auto bill calling using CCIS direct signaling
CA1059621A	1973-06-18	1979-07-31	International Business Machines Corporation	Machine for processing merchandising tickets in both roll and individual form
US4187498A	1975-10-06	1980-02-05	1St National Bank	Check verification system
US4191860A	1978-07-13	1980-03-04	Bell Telephone Laboratories, Incorporated	Data base communication call processing method
US4191376A	1975-05-27	1980-03-04	Systems Operations, Inc.	Highly secure playing cards for instant lottery and games
US4194089A	1976-09-30	1980-03-18	Hashimoto Corporation	Automatic answering telephone set having an endless tape with a plurality of selective tracks
US4200770A	1977-09-06	1980-04-29	Stanford University	Cryptographic apparatus and method
US4201887A	1978-05-11	1980-05-06	Cordura Marketing, Inc.	Data telecommunications terminal
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US4270024A	1978-12-22	1981-05-26	Morgan Electronics	Telephone line activity monitor
US4277649A	1980-01-18	1981-07-07	Bell Telephone Laboratories, Incorporated	Method and apparatus for screening telephone calls
AU6611381A	1980-01-10	1981-07-16	Jacques De Bruyn	Device for playing lotto via telephone
US4290141A	1979-07-02	1981-09-15	General Electric Company	Electronic voting system

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US4302810A	1979-12-28	1981-11-24	International Business Machines Corporation	Method and apparatus for secure message transmission for use in electronic funds transfer systems
US4303804A	1979-03-23	1981-12-01	Small World Exchange, Inc.	Telephone-conferencing apparatus and method having line location
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US4314103A	1978-09-29	1982-02-02	Plantronics, Inc.	Telephone answering system with simulated dial tone disconnect protection
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US4320256A *	1979-11-27	1982-03-16	Freeman Michael J	Verbally interactive telephone interrogation system with selectible variable decision tree
US4323770A	1978-08-16	1982-04-06	Societe D'etude De Systems Avances Et D'amenagements	Unit particularly for taking stakes and possibly determining the winners in a game such as a national lotto game
US4328396A	1975-08-13	1982-05-04	Theis Peter F	Total service telephone answering system
US4338494A	1980-07-11	1982-07-06	Theis Peter F	Telephone call inventorying and sequencing system and method
US4339798A	1979-12-17	1982-07-13	Remote Dynamics	Remote gaming system
US4345315A	1979-01-19	1982-08-17	Msi Data Corporation	Customer satisfaction terminal
US4348554A	1980-03-21	1982-09-07	Bell Telephone Laboratories, Incorporated	Method of providing virtual private network telephone service
US4355207A	1980-05-30	1982-10-19	Amtel Communications, Inc.	Telephone answering system
US4355372A	1980-12-24	1982-10-19	Npd Research Inc.	Market survey data collection method
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US4371752A	1979-11-26	1983-02-01	Ecs Telecommunications, Inc.	Electronic audio communication system
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DE2929416C2	1979-07-20	1983-03-17	Olympia Werke Ag, 2940 Wilhelmshaven	Communication network made up of several processing stations connected to one another by long-distance lines
US4389546A	1981-03-23	1983-06-21	The Audichron Company	Digital announcement system including remote loading and interrogation
US4393277A	1981-03-18	1983-07-12	Selectastation, Inc.	Remote tuner control system
US4398708A	1977-01-28	1983-08-16	Max Goldman	Method of fabricating and securing playing cards for instant lotteries

				and games
US4405829A	1977-12-14	1983-09-20	Massachusetts Institute Of Technology	Cryptographic communications system and method
US4420656A	1979-11-27	1983-12-13	Michael Freeman	Interactive telephone answering system
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US4451700A *	1982-08-27	1984-05-29	M. A. Kempner, Inc.	Automatic audience survey system
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US4494197A	1980-12-11	1985-01-15	Seymour Troy	Automatic lottery system
US4511764A	1981-12-25	1985-04-16	Tokyo Shibaura Denki Kabushiki Kaisha	Telephonic display device
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US4523055A	1983-11-25	1985-06-11	Pitney Bowes Inc.	Voice/text storage and retrieval system
US4532378A	1981-05-28	1985-07-30	Tokyo Shibaura Denki Kabushiki Kaisha	Telephone apparatus capable of inputting character data
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US4547851A	1983-03-14	1985-10-15	Kurland Lawrence G	Integrated interactive restaurant communication method for food and entertainment processing
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US4559416A	1983-10-12	1985-12-17	Morgan Industries, Inc.	Telephone line activity monitor
US4562342A	1983-09-15	1985-12-31	Solo Alan J	Credit card provided with coded security means
US4566030A	1983-06-09	1986-01-21	Ctba Associates	Television viewer data collection system
US4567359A	1984-05-24	1986-01-28	Lockwood Lawrence B	Automatic information, goods and services dispensing system
US4570930A	1983-10-03	1986-02-18	At&T Bell Laboratories	System, method, and station interface arrangement for playing video game over telephone lines
US4577062A	1983-09-02	1986-03-18	Butler National Corporation	Method for dispensing information
US4577067A	1983-10-05	1986-03-18	Alfred Levy	Remotely controlled telephone hold program system
US4578700A	1983-05-25	1986-03-25	Agb Research Plc	Apparatus for storing data relating to television viewing
US4580012A	1979-11-26	1986-04-01	Vmx, Inc.	Electronic audio communications system with automatic user access features
US4582956A	1983-07-12	1986-04-15	At&T Bell Laboratories	Method and apparatus for displaying at a selected station special service information during a silent interval between ringing
US4584602A	1982-11-08	1986-04-22	Pioneer Ansafone Manufacturing Corporation	Polling system and method using nondedicated telephone lines
US4586707A	1982-01-02	1986-05-06	Mcneight David L	Competitive game
US4587379A	1983-03-24	1986-05-06	Omron Tateisi Electronics Co.	Card authenticating apparatus for card-based transaction processing system
US4591190A	1983-09-09	1986-05-27	Canadian Security Printers Inc.	Voucher with self-contained verification means
US4591664A	1982-11-23	1986-05-27	Michael Freeman	Multichannel interactive telephone answering apparatus
US4592546A	1984-04-26	1986-06-03	David B. Lockton	Game of skill playable by remote participants in conjunction with a live event
US4594476A	1984-08-31	1986-06-10	Freeman Michael J	Broadcast interactive telephone system

US4598367A	1983-11-09	1986-07-01	Financial Design Systems, Inc.	Financial quotation system using synthesized speech
US4603232A	1984-09-24	1986-07-29	Npd Research, Inc.	Rapid market survey collection and dissemination method
US4611094A	1983-12-01	1986-09-09	At&T Bell Laboratories	Method for customer definable telephone capability
US4614367A	1982-06-17	1986-09-30	Rand Mcnally & Co.	Tamper-resisting multipart negotiable instruments
US4625276A	1983-08-31	1986-11-25	Vericard Corporation	Data logging and transfer system using portable and resident units
US4625079A	1981-07-31	1986-11-25	Horacio Castro	Method and apparatus for activating through phone telecommand an announcer-recorder, and for selectively activating through the sending of codes consisting of signals at least another automatic call attention phone device
US4630200A	1983-03-01	1986-12-16	Omron Tateisi Electronics Co.	Electronic cash register capable of performing cash-dispensing transactions
US4630201A	1984-02-14	1986-12-16	International Security Note & Computer Corporation	On-line and off-line transaction security system using a code generated from a transaction parameter and a random number
US4635251A	1985-07-31	1987-01-06	At&T Bell Laboratories	Meet-me conference with control capabilities
US4634809A	1983-11-28	1987-01-06	Kurt Paulsson	Terminal systems
US4645873A	1985-01-23	1987-02-24	Telecue Systems	Transactional telecommunication system
US4649563A	1984-04-02	1987-03-10	R L Associates	Method of and means for accessing computerized data bases utilizing a touch-tone telephone instrument
US4652998A	1984-01-04	1987-03-24	Bally Manufacturing Corporation	Video gaming system with pool prize structures
US4654482A	1984-10-15	1987-03-31	Deangelis Lawrence J	Home merchandise ordering telecommunications terminal
US4658417A	1983-10-08	1987-04-14	Hashimoto Corporation	Information transmission/reception system using pushphone and information reception apparatus
US4663777A	1984-12-17	1987-05-05	Charles Szeto	Apparatus for controlling digital voice recording and playback over telephone lines and adapted for use with standard host computers
US4665502A	1984-06-01	1987-05-12	William Kreisner	Random lottery computer
US4669730A	1984-11-05	1987-06-02	Small Maynard E	Automated sweepstakes-type game
US4671512A	1985-06-05	1987-06-09	Gilbert Bachman	Automated teller machine transaction receipts with integral promotional game
US4674044A	1985-01-30	1987-06-16	Merrill Lynch, Pierce, Fenner & Smith, Inc.	Automated securities trading system
US4677552A	1984-10-05	1987-06-30	Sibley Jr H C	International commodity trade exchange

US4677553A	1984-11-09	1987-06-30	International Totalizator Systems, Inc.	Secure placement of confidential information on a circulated blank ticket
US4685123A	1985-09-13	1987-08-04	American Telephone And Telegraph Company	Communication system having voice and data capability
US4688170A	1983-09-22	1987-08-18	Tau Systems Corporation	Communications network for communicating with computers provided with disparate protocols
US4689742A *	1980-12-11	1987-08-25	Seymour Troy	Automatic lottery system
US4692817A	1977-11-30	1987-09-08	Morgan Industries, Inc.	Programmed conversation recording system
US4694490A	1981-11-03	1987-09-15	Harvey John C	Signal processing apparatus and methods
US4696029A	1985-12-12	1987-09-22	Telesciences, Inc.	Telephone traffic load control system
US4696028A	1984-03-26	1987-09-22	Dytel Corporation	PBX Intercept and caller interactive attendant bypass system
US4697282A	1984-04-18	1987-09-29	Golden Enterprises, Inc.	Telephone operator voice storage and retrieval system
US4706275A	1985-11-13	1987-11-10	Aerotel Ltd.	Telephone system
US4710955A *	1985-11-25	1987-12-01	General Instrument Corporation	Cable television system with two-way telephone communication path
US4715061A	1986-05-30	1987-12-22	Telecredit, Inc.	Coordinated multiple telephone station system
US4716583A	1983-11-16	1987-12-29	Speech Plus, Inc.	Verbal computer terminal system
US4719647A	1984-01-30	1988-01-12	Morgan Electronics	Telephone message retrieval system with improved processor and retrieval console
US4722526A	1987-01-20	1988-02-02	Tovar Joseph L	Game method and apparatus for use while viewing a sporting event
US4745468A	1986-03-10	1988-05-17	Kohorn H Von	System for evaluation and recording of responses to broadcast transmissions
US4748668A	1986-07-09	1988-05-31	Yeda Research And Development Company Limited	Method, apparatus and article for identification and signature
US4756020A *	1985-08-30	1988-07-05	American Telephone And Telegraph Company, At&T Bell Laboratories	Method and apparatus for disallowing the extension of a call through a network
US4757267A	1987-06-17	1988-07-12	Applied Telematics, Inc.	Telephone system for connecting a customer to a supplier of goods
US4761684A	1986-11-14	1988-08-02	Video Jukebox Network	Telephone access display system
US4763191A *	1986-03-17	1988-08-09	American Telephone And Telegraph Company, At&T Bell Laboratories	Dial-up telephone network equipment for requesting an identified selection

US4764666A	1987-09-18	1988-08-16	Gtech Corporation	On-line wagering system with programmable game entry cards
US4766604A	1986-11-07	1988-08-23	Messagephone, Inc.	Method for receiving and delivering voice messages
US4774655A	1984-10-24	1988-09-27	Telebase Systems, Inc.	System for retrieving information from a plurality of remote databases having at least two different languages
US4781377A	1986-10-24	1988-11-01	Mcvean Charles D	Hybrid sporting event and game show
US4782510A	1985-07-05	1988-11-01	Melita Electronic Labs, Inc.	Telephone answering machine with digital storage of announcements and messages
US4783800A	1984-02-14	1988-11-08	Levine Alfred B	Remote controlled interactive scheduler system
US4783796A	1982-09-28	1988-11-08	Opcom	PBX telephone call control system
US4785408A *	1985-03-11	1988-11-15	AT&T Information Systems Inc. American Telephone and Telegraph Company	Method and apparatus for generating computer-controlled interactive voice services
US4788682A	1986-09-23	1988-11-29	Northern Telecom Limited	Telephone system adapted to telemarketing
US4788718A	1987-10-05	1988-11-29	American Telephone And Telegraph Company, At & T Laboratories	Call data collection and modification of received call distribution
US4788715A	1986-10-16	1988-11-29	American Telephone And Telegraph Company At&T Bell Laboratories	Announcing waiting times in queuing systems
US4788716A	1987-12-22	1988-11-29	Bell Communications Research, Inc.	Public opinion polling system
US4789928A	1986-02-17	1988-12-06	Flex Japan Inc.	Auction information transmission processing
US4791664A	1986-09-12	1988-12-13	Lutz Joseph M	System for selectively receiving telephone calls
US4792968A *	1985-07-10	1988-12-20	Fdr Interactive Technologies	Statistical analysis system for use with public communication facility
US4796293A	1987-12-18	1989-01-03	Communications Network Enhancement Inc.	Enhanced dedicated teleconferencing system
US4797910A	1986-05-07	1989-01-10	American Telphone And Telegraph Company, At&T Bell Laboratories	Automated operator assistance calls with voice processing
US4797913A	1987-08-04	1989-01-10	Science Dynamics Corporation	Direct telephone dial ordering service
US4797911A *	1987-06-16	1989-01-10	Inventions, Inc.	Customer account online servicing system
US4799156A	1986-10-01	1989-01-17	Strategic Processing Corporation	Interactive market management system

US4800583A	1986-07-31	1989-01-24	Theis Peter F	Overflow call handling system
US4805209A	1987-12-09	1989-02-14	International Business Machines	Coordinated transfer of voice and information through a digital switch
US4812843A	1987-05-04	1989-03-14	Champion Iii C Paul	Telephone accessible information system
US4815121A	1984-06-06	1989-03-21	Canon Kabushiki Kaisha	Communication apparatus recognizing speech and automatically switching from data to speech transmission
US4815031A	1985-09-02	1989-03-21	Nec Corporation	Method for granting a request to authorized data terminal users accessing from any locations
US4815741A	1984-11-05	1989-03-28	Small Maynard E	Automated marketing and gaming systems
US4827500A	1987-01-30	1989-05-02	American Telephone And Telegraph Company, At&T Bell Laboratories	Automatic speech recognition to select among call destinations
US4842278A	1986-06-02	1989-06-27	Victor Markowicz	Hierarchical lottery network with selection from differentiated playing pools
US4845739A *	1985-07-10	1989-07-04	Fdr Interactive Technologies	Telephonic-interface statistical analysis system
US4847890A	1987-08-10	1989-07-11	The Telephone Connection	Anonymous interactive telephone system
US4852154A	1986-02-04	1989-07-25	Pacific Bell	Pay-per-view CATV system
US4853882A	1987-11-02	1989-08-01	A. C. Nielsen Company	System and method for protecting against redundant mailings
US4856050A	1984-01-30	1989-08-08	Theis Peter F	Telephone message retrieval system with improved message processor and retrieval console including auto-disabling playback switch
US4866756A *	1986-04-16	1989-09-12	Call It Co.	Interactive computerized communications systems with voice input and output
US4876717A	1986-09-30	1989-10-24	American Telephone And Telegraph Company	Adjunct processor for providing computer facility access protection via call transfer
US4876592A	1986-03-10	1989-10-24	Henry Von Kohorn	System for merchandising and the evaluation of responses to broadcast transmissions
US4882473A	1987-09-18	1989-11-21	Gtech Corporation	On-line wagering system with programmable game entry cards and operator security cards
US4893328A	1987-07-31	1990-01-09	Microvoice Systems Corporation	Automated telephone operator overflow device
US4893330A	1989-06-01	1990-01-09	American Telephone And Telegraph Company, At&T Bell Laboratories	Method and apparatus for restricting credit card communication calls

US4894857A	1987-06-16	1990-01-16	Inuentions Inc.	Method and apparatus for customer account servicing
US4896345A	1989-02-16	1990-01-23	Thorne Donald J	Call handling system
US4897867A	1985-09-30	1990-01-30	American Telephone And Telegraph Company, At&T Bell Laboratories	Method of and an arrangement for forwarding a customer order
US4899375A	1988-09-23	1990-02-06	American Telephone & Telegraph Company, At&T Bell Laboratories	More efficient call handling for operator assistance calls
US4907079A	1987-09-28	1990-03-06	Teleview Rating Corporation, Inc.	System for monitoring and control of home entertainment electronic devices
US4908761A	1988-09-16	1990-03-13	Innovare Resourceful Marketing Group, Inc.	System for identifying heavy product purchasers who regularly use manufacturers' purchase incentives and predicting consumer promotional behavior response patterns
US4908850A *	1988-01-11	1990-03-13	American Communications & Engineering, Inc.	Voice services network with automated billing
US4922522A	1988-06-07	1990-05-01	American Telephone And Telegraph Company	Telecommunications access to lottery systems
US4922520A	1986-12-31	1990-05-01	M. A. Kempner, Inc.	Automatic telephone polling system
US4937853A	1989-05-03	1990-06-26	Agt International, Inc.	Lottery agent data communication/telephone line interface
US4942616A *	1985-09-09	1990-07-17	Thomas Linstroth	Interactive synthesized speech quotation system for brokers
US4942599A	1989-02-02	1990-07-17	Alphanet Technology Corporation	Location identification
US4942598A	1988-03-04	1990-07-17	Motorola, Inc.	Telephone answering machine in paging systems with automatic number identification based message operations
US4943995A	1986-10-08	1990-07-24	At&T Bell Laboratories	Semi-automated customer information system
US4955047A	1984-03-26	1990-09-04	Dytel Corporation	Automated attendant with direct inward system access
US4959783A	1989-04-06	1990-09-25	Lotto Pick Quick Winning Odds, Ltd.	System and method for choosing random numbers and delivering such numbers to subscribers for playing games of chance
US4961217A	1983-11-11	1990-10-02	Hitachi Telecom Technologied, Ltd.	Personal-servicing communication system
US4964157A	1988-12-27	1990-10-16	Kabushiki Kaisha Toshiba	Conference speech-channel forming method based on private branch exchange and its conference telephone system
US4965825A	1981-11-03	1990-10-23	The Personalized Mass Media Corporation	Signal processing apparatus and methods

US4969185A	1989-12-29	1990-11-06	At&T Bell Laboratories	Automated booking of telecommunications calls
US4969183A	1989-08-28	1990-11-06	Morris Reese	Telephone lotto number system and service
US4972461A	1989-09-20	1990-11-20	At&T Bell Laboratories	Call message delivery system and method
US4974252A	1987-06-03	1990-11-27	Club Theatre Network, Inc.	Interactive commercial/entertainment network
US4975945A	1989-08-21	1990-12-04	First Data Resources Inc.	Universal telephone call relay system
US4989233A	1989-04-11	1991-01-29	Evanston Enterprises, Inc.	Systems for capturing telephonic mass responses
US4992940A	1989-03-13	1991-02-12	H-Renee, Incorporated	System and method for automated selection of equipment for purchase through input of user desired specifications
US4996705A *	1987-09-01	1991-02-26	At&T Bell Laboratories	Use of telecommunications systems for lotteries
US5001710A	1989-10-24	1991-03-19	At&T Bell Laboratories	Customer programmable automated integrated voice/data technique for communication systems
US5003574A	1989-03-30	1991-03-26	At&T Bell Laboratories	Voice capture system
US5014298A	1985-07-10	1991-05-07	First Data Resources Inc.	Voice-data telephonic control system
US5017917A	1988-12-30	1991-05-21	At&T Bell Laboratories	Restriction of communication service accessibility among subscriber communities
US5018736A	1989-10-27	1991-05-28	Wakeman & Deforrest Corporation	Interactive game system and method
US5023904A	1987-08-04	1991-06-11	Science Dynamics Corporation	Direct telephone dial ordering service
EP0434181A1	1989-12-20	1991-06-26	Ivy Hill Corporation	Product having concealed message
US5046183A	1989-07-31	1991-09-03	At&T Bell Laboratories	Semi-automated operator assistance telecommunication calls
US5083272A	1988-11-02	1992-01-21	Britcanus Corporation	Interactive telephone lottery system with a verification code
US5097528A	1991-02-25	1992-03-17	International Business Machines Corporation	System for integrating telephony data with data processing systems
US5127003A	1991-02-11	1992-06-30	Simpact Associates, Inc.	Digital/audio interactive communication network
US5146491A	1991-08-08	1992-09-08	Pilgrim Telephone, Inc.	Telephone billing method
US5181238A	1989-05-31	1993-01-19	At&T Bell Laboratories	Authenticated communications access service
US5255183A	1990-05-29	1993-10-19	Interactive Voice Data System Inc.	Telephone-based personnel tracking system
US5263723A	1989-10-27	1993-11-23	Wakeman & Deforrest Corporation	Interactive contest system

US5333185A	1991-06-03	1994-07-26	At&T Bell Laboratories	System for processing calling party information for international communications services
US5351276A	1991-02-11	1994-09-27	Simpact Associates, Inc.	Digital/audio interactive communication network
US5353335A	1992-08-03	1994-10-04	At&T Bell Laboratories	Multilingual prepaid telephone system
EP0249575B1	1986-04-16	1994-11-23	Call It Co	Computerized communications system
DE3726366C2	1986-08-08	1998-05-28	Dictaphone Corp	Communication stem
Family To Family Citations				
US3022381A *	1959-02-26	1962-02-20	Bell Telephone Labor Inc	Credit card operated telephone
DE1512981B2	1967-04-08	1975-07-17	Standard Elektrik Lorenz Ag, 7000 Stuttgart	Partial lock for telephone exchanges
US3555198A *	1968-04-01	1971-01-12	Itt	Identifier to determine the class of service to which a subscriber is entitled
US3553378A	1968-05-06	1971-01-05	Dialscan Systems Inc	Information retrieval apparatus via telephone lines providing simultaneous accessing of same information source
US3564210A *	1968-11-29	1971-02-16	Farrington Mfg Co	Apparatus combining a variable amount imprinter with credit verification circuitry
US3652795A *	1970-11-25	1972-03-28	Electrospace Corp	Telephone transaction system
US3727186A	1971-02-26	1973-04-10	Digital Data Syst Corp	Method of and apparatus for credit verification
US3787632A	1971-06-28	1974-01-22	Northern Electric Co	Automatic number identification for private telephone exchanges
US3870866A *	1971-11-11	1975-03-11	Halpern John Wolfgang	Fee charging system
US3938091A *	1972-03-17	1976-02-10	Atalla Technovations Company	Personal verification system
US3829628A	1972-12-26	1974-08-13	Gte Automatic Electric Lab Inc	Trunk circuit number parity checking
US3794774A *	1973-01-19	1974-02-26	Courtesy Communications Corp	Telephone audio program system
US3940569A	1973-08-08	1976-02-24	E & M Communications Corporation	Programmable toll restrictor
US3987252A	1973-08-29	1976-10-19	Graphic Scanning, Inc.	Computer controlled telephone answering system
SE427403B	1975-06-13	1983-03-28	Ericsson Telefon Ab L M	SET UP AND DEVICE TO PROVIDE AT LEAST ONE SPECIAL SERVICE REGARDING VOICE MESSAGE TO A NUMBER OF SUBSCRIBERS
US4192972A	1976-04-27	1980-03-11	Cselt-Centro Studi e Laboratori	Pay-telephone station with deferred collection

			Telecomunicazioni S.p.A	
US4087638A	1976-10-01	1978-05-02	Telaris Telecommunications Inc.	DTMF Communication system
FR2386080B1 *	1977-03-31	1980-03-07	Cii Honeywell Bull	
US4160129A	1977-05-03	1979-07-03	Tdx Systems, Inc.	Telephone communications control system having a plurality of remote switching units
US4090034A	1977-06-09	1978-05-16	Bell Telephone Laboratories, Incorporated	Usage-sensitive billing arrangement for private branch exchange subscribers
US4139739A *	1977-07-05	1979-02-13	Tdx Systems, Inc.	Telecommunications call back system
JPS6058738B2 *	1977-11-26	1985-12-21	Mitsui Toatsu Chemicals	
CH620005A5	1978-04-19	1980-10-31	Scheuchzer Auguste Les Fils D	
US4255918A *	1978-06-01	1981-03-17	Lantech Inc.	Collapsible web apparatus
JPS5553767A	1978-10-14	1980-04-19	Keihin Kiyuukou Dentetsu Kk	Computer system for motor school
US4194069A *	1978-10-16	1980-03-18	Texaco Development Corporation	Urea derivative and use as polyurethane catalyst
US4221933A	1978-12-21	1980-09-09	Cornell Ronald G	Data storage and retrieval structure for a message storage system
US4320770A *	1979-05-03	1982-03-23	Trans-Med Corporation	Diagnostic specimen collector
US4581486A	1979-11-26	1986-04-08	Vmx, Inc.	Electronic audio communications system with user accessible message groups
US4313035A *	1980-01-18	1982-01-26	Bell Telephone Laboratories, Incorporated	Method of providing person locator service
US4360875A	1981-02-23	1982-11-23	Behnke Robert W	Automated, door-to-door, demand-responsive public transportation system
IT1148027B	1981-03-03	1986-11-26	Cselt Centro Studi Lab Telecom	SYSTEM FOR THE PROPAGATION ALONG A TELEPHONE CONNECTION OF THE TEETH OF THE USERS INTERESTED IN THIS CONNECTION
FR2501396B1 *	1981-03-05	1985-10-11	Dassault Electronique	ACCESS CONTROL SYSTEM, PARTICULARLY FOR PASSING TOLL POINTS
US4438824A *	1981-04-22	1984-03-27	Siemens Corporation	Apparatus and method for cryptographic identity verification
US4401856A	1981-05-13	1983-08-30	Amtel Communications, Inc.	Control system for handling direct inward dialed telephone calls
IT1154048B	1981-06-09	1987-01-21	Urmet Sud Costr Elett Telefon	IMPROVEMENT OF SYSTEMS AND EQUIPMENT FOR PUBLIC TELEPHONE USING INTER-URBAN URBAN EQUIPMENT EQUIPPED WITH SELECTOR

US4585903A	1982-01-25	1986-04-29	Viking Phone Company	Cordless telephone
US4489438A *	1982-02-01	1984-12-18	National Data Corporation	Audio response system
US4517412A	1982-03-09	1985-05-14	Martha Newkirk	Card-actuated telecommunication network
DE3225562C2	1982-07-08	1984-09-27	Telefonbau Und Normalzeit Gmbh, 6000 Frankfurt	Method for automatic order acceptance using a telecommunication system, in particular a telephone exchange system
FR2533789B1	1982-09-24	1987-10-23	France Etat	HYBRID LOCAL COMMUNICATION NETWORK IN CIRCUIT AND LOOP PACKET MODES CARRYING A TIME MULTIPLEX
US4747124A	1982-09-28	1988-05-24	Opcom	PBX telephone call control system
US4761807A	1982-09-29	1988-08-02	Vmx, Inc.	Electronic audio communications system with voice authentication features
US4625081A	1982-11-30	1986-11-25	Lotito Lawrence A	Automated telephone voice service system
US4672660A	1983-02-14	1987-06-09	Amtel Communications, Inc.	Method and system for identifying telephone callers
US4541087A	1983-06-27	1985-09-10	Confertech International, Inc.	Digital teleconferencing control device, system and method
US4591665A	1983-07-12	1986-05-27	At&T Bell Laboratories	Method and apparatus for providing call tracing service
US4565903A	1983-08-03	1986-01-21	At&T Bell Laboratories	Telephone interexchange carrier selection
JPH0238025B2	1983-11-30	1990-08-28	Tokyo Shibaura Electric Co	
US4611096A	1983-12-01	1986-09-09	At&T Bell Laboratories	Telephone office service assist and handoff
US4975941A	1984-03-26	1990-12-04	Dytel Corporation	Call processor for facilitating call completions
US4599493A	1984-08-28	1986-07-08	Tbs International, Inc.	Multi-line telephone control system
US4785473A	1984-11-27	1988-11-15	Genesis Electronics Corporation	Interactive audio telecommunications message storage, forwarding and retrieval system
FR2575016B1	1984-12-13	1987-01-16	Grandmougin Michel	METHOD FOR OBTAINING A COMMUNICATION FROM A PUBLIC TELEPHONE DEVICE FOLLOWING PREPAYMENT WITH CURRENCY
US5128984A	1985-07-10	1992-07-07	First Data Resources Inc.	Telephone interface call processing system with call selectivity
US5351285A	1985-07-10	1994-09-27	First Data Resources Inc.	Multiple format telephonic interface control system
US5073929A	1988-05-16	1991-12-17	First Data Resources Inc.	Voice-data telephonic control system
US5835576A	1985-07-10	1998-11-10	Ronald A. Katz Technology Licensing, L.P.	Telephonic-interface lottery device

US5898762A	1985-07-10	1999-04-27	Ronald A. Katz Technology Licensing, L.P.	Telephonic-interface statistical analysis system
US5365575A	1985-07-10	1994-11-15	First Data Resources Inc.	Telephonic-interface lottery system
DE3650732T2	1985-07-10	2000-11-16	Ronald A Katz Technology Licen	System and method for data analysis
US4805207A	1985-09-09	1989-02-14	Wang Laboratories, Inc.	Message taking and retrieval system
US4897870A *	1985-09-25	1990-01-30	Southlake Technologies, Inc.	Network implemented pay telephone set
CA1262273A *	1985-09-30	1989-10-10	Robert William Foster	Method of and an arrangement for forwarding a customer order
US4685127A	1985-10-01	1987-08-04	Southwestern Bell Telephone	System for converting a No. 5 crossbar telephone switching central office to a conforming equal access central office
JPH0523903B2	1985-10-17	1993-04-06	Toyoda Machine Works Ltd	
US4763317A	1985-12-13	1988-08-09	American Telephone And Telegraph Company, At&T Bell Laboratories	Digital communication network architecture for providing universal information services
JPS62239757A *	1986-04-11	1987-10-20	Fujitsu Ltd	Attendant board control system
US4922519A	1986-05-07	1990-05-01	American Telephone And Telegraph Company	Automated operator assistance calls with voice processing
US4782519A	1986-05-22	1988-11-01	Network Access Corporation	Method and apparatus for enhancing the operating capabilities of a telephone switching system
US4750199A	1986-05-30	1988-06-07	Telecredit, Inc.	Coordinated multiple telephone station system
AT110916T	1986-06-20	1994-09-15	Siemens Ag	METHOD FOR A COMMUNICATION SYSTEM, IN PARTICULAR FOR A TELEPHONE EXTENSION SUBSYSTEM IN WHICH INTERVENTIONS PERIODICALLY SWITCHES TO CHANGED TRAFFIC POSSIBILITIES.
US4832341A	1986-08-21	1989-05-23	Upc Games, Inc.	High security instant lottery using bar codes
US4959855A	1986-10-08	1990-09-25	At&T Bell Laboratories	Directory assistance call processing and calling customer remote signal monitoring arrangements
US4856066A	1986-11-06	1989-08-08	Lemelson Jerome H	Speech communication system and method
US4899373A	1986-11-28	1990-02-06	American Telephone And Telegraph Company At&T Bell Laboratories	Method and apparatus for providing personalized telephone subscriber features at remote locations
US4769834A	1987-01-30	1988-09-06	American Telephone And Telegraph Company And At&T Information Systems Inc.	Inter-exchange carrier access

US4799255A	1987-01-30	1989-01-17	American Telephone And Telegraph Company - At&T Information Systems	Communication facilities access control arrangement
US4761808A	1987-03-18	1988-08-02	Sheldon Howard	Time code telephone security access system
US4797818A	1987-03-26	1989-01-10	Jeno F. Paulucci	Food order/delivery system
US4791666A	1987-06-19	1988-12-13	The Audichron Company	Automatic intercept system interface for electromechanical telephone central office
US4850007A	1987-06-25	1989-07-18	American Telephone And Telegraph Company	Telephone toll service with advertising
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US6201950B1	1984-09-14	2001-03-13	Aspect Telecommunications Corporation	Computer-controlled paging and telephone communication system and method
US5375161A	1984-09-14	1994-12-20	Accessline Technologies, Inc.	Telephone control system with branch routing
US5752191A	1984-09-14	1998-05-12	Accessline Technologies, Inc.	Telephone control system which connects a caller with a subscriber AT A telephone address
US6545589B1	1984-09-14	2003-04-08	Aspect Communications Corporation	Method and apparatus for managing telecommunications
US5588037A	1984-09-14	1996-12-24	Accessline Technologies, Inc.	Remote access telephone control system
US5255309A *	1985-07-10	1993-10-19	First Data Resources Inc.	Telephonic-interface statistical analysis system
US20040071278A1	1985-07-10	2004-04-15	Ronald A. Katz	Multiple format telephonic interface control system
US5218631A *	1985-07-10	1993-06-08	First Data Resources Inc.	Telephonic-interface game control system
US5359645A	1985-07-10	1994-10-25	First Data Corporation Inc.	Voice-data telephonic interface control system
US5835576A *	1985-07-10	1998-11-10	Ronald A. Katz Technology Licensing, L.P.	Telephonic-interface lottery device
US5109404A *	1985-07-10	1992-04-28	First Data Resources, Inc.	Telephone call processor with select call routing
US6449346B1	1985-07-10	2002-09-10	Ronald A. Katz Technology Licensing, L.P.	Telephone-television interface statistical analysis system
US5898762A	1985-07-10	1999-04-27	Ronald A. Katz Technology Licensing, L.P.	Telephonic-interface statistical analysis system
US4845739A *	1985-07-10	1989-07-04	Fdr Interactive Technologies	Telephonic-interface statistical analysis system
US5351285A *	1985-07-10	1994-09-27	First Data Resources Inc.	Multiple format telephonic interface control system
US6678360B1	1985-07-10	2004-01-13	Ronald A. Katz Technology Licensing, L.P.	Telephonic-interface statistical analysis system
US5793846A	1985-07-10	1998-08-11	Ronald A. Katz Technology Licensing, Lp	Telephonic-interface game control system
US5828734A *	1985-07-10	1998-10-27	Ronald A. Katz Technology Licensing, Lp	Telephone interface call processing system with call selectivity

US5073929A	1988-05-16	1991-12-17	First Data Resources Inc.	Voice-data telephonic control system
US5365575A	1985-07-10	1994-11-15	First Data Resources Inc.	Telephonic-interface lottery system
US6443840B2 *	1986-03-10	2002-09-03	Response Reward Systems, L.C.	Evaluation of responses of participatory broadcast audience with prediction of winning contestants; monitoring, checking and controlling of wagering, and automatic crediting and couponing
US5408515A *	1988-04-29	1995-04-18	Mobile Telecommunication Technologies	Ground-to-air telephone calling system and related method for directing a call to a particular passenger
US4922522A *	1988-06-07	1990-05-01	American Telephone And Telegraph Company	Telecommunications access to lottery systems
US5029196A *	1988-07-11	1991-07-02	Dytel Corporation	Automated call screening
US4932021A *	1989-04-03	1990-06-05	At&T Bell Laboratories	Path learning feature for an automated telemarketing system
US4959783A *	1989-04-06	1990-09-25	Lotto Pick Quick Winning Odds, Ltd.	System and method for choosing random numbers and delivering such numbers to subscribers for playing games of chance
US4989233A *	1989-04-11	1991-01-29	Evanston Enterprises, Inc.	Systems for capturing telephonic mass responses
US4989234A *	1989-04-11	1991-01-29	Evanston Enterprises, Inc.	Systems for capturing telephonic mass responses
US5083800A *	1989-06-09	1992-01-28	Interactive Network, Inc.	Game of skill or chance playable by several participants remote from each other in conjunction with a common event
US4939773A *	1989-06-26	1990-07-03	First Data Resources, Inc.	Multiple party telephone control system
US5185787A *	1989-06-26	1993-02-09	First Data Resources, Inc.	Multiple party telephone control system with random dialing for polling
US4969183A *	1989-08-28	1990-11-06	Morris Reese	Telephone lotto number system and service
US5971854A *	1989-10-27	1999-10-26	William Junkin Trust	Interactive contest system
US5263723A *	1989-10-27	1993-11-23	Wakeman & Deforrest Corporation	Interactive contest system
US5018736A *	1989-10-27	1991-05-28	Wakeman & Deforrest Corporation	Interactive game system and method
US5035422A *	1989-12-07	1991-07-30	Robert Berman	Interactive game show and method for achieving interactive communication therewith
US5108115A *	1989-12-07	1992-04-28	Robert Berman	Interactive game show and method for achieving interactive communication therewith
US5415416A *	1990-03-06	1995-05-16	Lottotron Inc.	Computerized lottery wagering system
US5910047A *	1990-03-06	1999-06-08	Lottotron, Inc.	Computerized lottery wagering system

US5816919A *	1990-03-06	1998-10-06	Lottotron, Inc.	Computer lottery wagering system
US5222120A *	1990-04-23	1993-06-22	Mci Communications Corporation	Long distance telephone switching system with enhanced subscriber services
US5060256A *	1990-04-26	1991-10-22	Illinois Bell Telephone Company	Mass polling system with cut-through
US5187735A *	1990-05-01	1993-02-16	Tele Guia Talking Yellow Pages, Inc.	Integrated voice-mail based voice and information processing system
US5164981A *	1990-06-04	1992-11-17	Davox	Voice response system with automated data transfer
US5133560A *	1990-08-31	1992-07-28	Small Maynard E	Spelling game method
JP3028491B2 *	1990-09-11	2000-04-04	松下電器産業株式会社	Voice storage device
JP3130529B2 *	1990-09-13	2001-01-31	株式会社東芝	Communication terminal device
US5113430A *	1990-10-01	1992-05-12	United States Advanced Network, Inc.	Enhanced wide area audio response network
US5335266A *	1990-10-01	1994-08-02	United States Advance Network, Inc.	Automated telecommunication peripheral system
CA2028566A1 *	1990-10-25	1992-04-26	John N. Bassili	Method and apparatus for the measurement of response time in attitude survey research
GB9103907D0 *	1991-02-25	1991-04-10	Beaumont Maxin International L	Interactive transaction processing system
US5528670A *	1991-05-13	1996-06-18	Grapevine Software, Inc.	Voice message-based administration system
US5381470A *	1991-05-28	1995-01-10	Davox Corporation	Supervisory management center with parameter testing and alerts
US5186471A *	1991-06-21	1993-02-16	Nynex Corporation	Interactive telephone gaming system
US5301320A *	1991-06-28	1994-04-05	Digital Equipment Corporation	Workflow management and control system
US8352400B2	1991-12-23	2013-01-08	Hoffberg Steven M	Adaptive pattern recognition based controller apparatus and method and human-factored interface therefore
US5354069A *	1992-01-21	1994-10-11	Ahbrew Company	Lottery emulation system
US6016335A *	1992-03-13	2000-01-18	Lacy; Alex B.	Telephone registration system for schools
WO1993022866A1 *	1992-04-24	1993-11-11	Paragon Services International, Inc.	Interactive telephone system for optimizing service economy
FR2691560B1 *	1992-05-20	1997-02-07		
US5297802A *	1992-06-05	1994-03-29	Terrence Pocock	Televised bingo game system

US5729600A *	1992-06-25	1998-03-17	Rockwell International Corporation	Automatic call distributor with automated voice responsive call servicing system and method
US5987149A	1992-07-08	1999-11-16	Uniscore Incorporated	Method for scoring and control of scoring open-ended assessments using scorers in diverse locations
US5357564A *	1992-08-12	1994-10-18	At&T Bell Laboratories	Intelligent call screening in a virtual communications network
US5327485A *	1992-12-01	1994-07-05	Pacific Bell	Telephone lottery play system
US5433615A *	1993-02-05	1995-07-18	National Computer Systems, Inc.	Categorized test item reporting system
US5437554A	1993-02-05	1995-08-01	National Computer Systems, Inc.	System for providing performance feedback to test resolvers
US6323894B1	1993-03-12	2001-11-27	Telebuyer, Llc	Commercial product routing system with video vending capability
US20030185356A1	1993-03-12	2003-10-02	Telebuyer, Llc	Commercial product telephonic routing system with mobile wireless and video vending capability
US5495284A	1993-03-12	1996-02-27	Katz; Ronald A.	Scheduling and processing system for telephone video communication
US7019770B1	1993-03-12	2006-03-28	Telebuyer, Llc	Videophone system for scrutiny monitoring with computer control
US5392336A *	1993-05-27	1995-02-21	At&T Corp.	Data message storage and pick up service
GB9314296D0 *	1993-07-10	1993-08-25	Ibm	Audio data processing
EP0653735B1 *	1993-11-10	2000-09-13	Tomato Interactive S.R.L.	Prize awarding system
US5490207A *	1994-01-21	1996-02-06	Schorr; Andrew	Method of dispersing information and collecting data via telephone systems
US5559888A *	1994-02-15	1996-09-24	Lucent Technologies Inc.	Secure information retrieval service (SIRS)
US6026156A	1994-03-18	2000-02-15	Aspect Telecommunications Corporation	Enhanced call waiting
WO1995027360A1	1994-03-31	1995-10-12	Citibank, N.A.	Interactive voice response system
US5864604A *	1994-05-20	1999-01-26	General Patent Corp	Method of providing message service for limited access telecommunications
US5751802A *	1994-12-27	1998-05-12	At & T Corp	Telecommunications service provisioning
US5546452A	1995-03-02	1996-08-13	Geotel Communications Corp.	Communications system using a central controller to control at least one network and agent system
JPH08292937A *	1995-04-24	1996-11-05	Fujitsu Ltd	Questionnaire survey agent system and its method
US6069941A *	1995-07-27	2000-05-30	At&T Corp	Method for controlling subscriber access to a fee-based service

US6411682B1	1995-09-21	2002-06-25	Aspect Telecommunications Corporation	Computer controlled paging and telephone communication system and method
US5905865A	1995-10-30	1999-05-18	Web Pager, Inc.	Apparatus and method of automatically accessing on-line services in response to broadcast of on-line addresses
US7925531B1	1995-11-13	2011-04-12	TrialCard Incorporated	Method of delivering goods and services via media
US5918213A *	1995-12-22	1999-06-29	Mci Communications Corporation	System and method for automated remote previewing and purchasing of music, video, software, and other multimedia products
US9530150B2	1996-01-19	2016-12-27	Adcension, Llc	Compensation model for network services
US6264560B1	1996-01-19	2001-07-24	Sheldon F. Goldberg	Method and system for playing games on a network
US20090012864A1 *	2007-07-02	2009-01-08	Goldberg Sheldon F	Compensation model for network services
US5823879A *	1996-01-19	1998-10-20	Sheldon F. Goldberg	Network gaming system
ITMI960327A1 *	1996-02-21	1997-08-21	Zorza Csaba Dalla	ELECTRONIC-TELEPHONE-TELEMATIC SYSTEM FOR LOTTERIES
US7305243B1	1996-02-28	2007-12-04	Tendler Cellular, Inc.	Location based information system
US6519463B2	1996-02-28	2003-02-11	Tendler Cellular, Inc.	Location based service request system
US5974389A *	1996-03-01	1999-10-26	Clark; Melanie Ann	Medical record management system and process with improved workflow features
US7035384B1	1996-04-17	2006-04-25	Convergys Cmg Utah, Inc.	Call processing system with call screening
US5867562A *	1996-04-17	1999-02-02	Scherer; Gordon F.	Call processing system with call screening
US7747507B2	1996-05-23	2010-06-29	Ticketmaster L.L.C.	Computer controlled auction system
US6704713B1	1996-05-23	2004-03-09	Ita Investments, Llc	Computer controlled event ticket auctioning system
US5838774A *	1996-07-01	1998-11-17	Bellsouth Corporation	Telephone polling method
US5883940A *	1996-07-01	1999-03-16	Teledynamics Group, Inc.	Interactive method and apparatus for the generation of leads
US5862223A	1996-07-24	1999-01-19	Walker Asset Management Limited Partnership	Method and apparatus for a cryptographically-assisted commercial network system designed to facilitate and support expert-based commerce
FI111428B	1996-08-29	2003-07-15	Nokia Corp	Gallup that utilizes a wireless data communication connection
GB9618350D0 *	1996-09-03	1996-10-16	Profit Thru Telecommunications	Interactivity telecommunications
US6236365B1	1996-09-09	2001-05-22	Tracbeam, Llc	Location of a mobile station using a plurality of commercial wireless infrastructures

US9134398B2	1996-09-09	2015-09-15	Tracbeam Llc	Wireless location using network centric location estimators
GB2337386B *	1996-09-09	2001-04-04	Dennis J Dupray	Location of a mobile station
US6161099A *	1997-05-29	2000-12-12	Muniauction, Inc.	Process and apparatus for conducting auctions over electronic networks
US6073105A *	1997-06-13	2000-06-06	Tele-Publishing, Inc.	Interactive personals online network method and apparatus
US5893111A *	1997-06-13	1999-04-06	Sharon, Jr.; Paul A.	Ad taking pagination information system
US6052122A	1997-06-13	2000-04-18	Tele-Publishing, Inc.	Method and apparatus for matching registered profiles
US5857193A *	1997-06-13	1999-01-05	Sutcliffe; Andrew B.	Centralized audiotext polling system
US6058367A *	1997-06-13	2000-05-02	Tele-Publishing, Inc.	System for matching users based upon responses to sensory stimuli
US6728341B1 *	1997-06-24	2004-04-27	Royal Thoughts, Llc	Monitoring and communication system for stationary and mobile persons
US5963951A *	1997-06-30	1999-10-05	Movo Media, Inc.	Computerized on-line dating service for searching and matching people
US5903630A *	1997-06-30	1999-05-11	Movo Media, Inc.	Method and apparatus for specifying alphanumeric information with a telephone keypad
US6061681A *	1997-06-30	2000-05-09	Movo Media, Inc.	On-line dating service for locating and matching people based on user-selected search criteria
US7096192B1	1997-07-28	2006-08-22	Cybersource Corporation	Method and system for detecting fraud in a credit card transaction over a computer network
US6029154A *	1997-07-28	2000-02-22	Internet Commerce Services Corporation	Method and system for detecting fraud in a credit card transaction over the internet
US7403922B1	1997-07-28	2008-07-22	Cybersource Corporation	Method and apparatus for evaluating fraud risk in an electronic commerce transaction
US6044134A *	1997-09-23	2000-03-28	De La Huerga; Carlos	Messaging system and method
US7003528B2	1998-02-13	2006-02-21	3565 Acquisition, Llc	Method and system for web management
US6560639B1	1998-02-13	2003-05-06	3565 Acquisition Corporation	System for web content management based on server-side application
AU2581999A *	1998-02-27	1999-09-15	Ericsson Inc.	Method and apparatus for personally identifying a calling party to a called party
US7386485B1	2004-06-25	2008-06-10	West Corporation	Method and system for providing offers in real time to prospective customers
US8315909B1	1998-03-11	2012-11-20	West Corporation	Methods and apparatus for intelligent selection of goods and services in point-of-sale commerce

US7437313B1	1998-03-11	2008-10-14	West Direct, Llc	Methods, computer-readable media, and apparatus for offering users a plurality of scenarios under which to conduct at least one primary transaction
US7364068B1	1998-03-11	2008-04-29	West Corporation	Methods and apparatus for intelligent selection of goods and services offered to conferees
US6055513A	1998-03-11	2000-04-25	Telebuyer, Llc	Methods and apparatus for intelligent selection of goods and services in telephonic and electronic commerce
US6427002B2	1998-05-07	2002-07-30	Worldcom, Inc.	Advanced interactive voice response service node
US6493353B2	1998-05-07	2002-12-10	Mci Communications Corporation	Communications signaling gateway and system for an advanced service node
US6647111B1 *	1998-05-07	2003-11-11	Mci Communications Corporation	System for executing advanced interactive voice response services using service-independent building blocks
US6418205B2	1998-05-07	2002-07-09	Mci Communications Corporation	Call and circuit state machine for a transaction control layer of a communications signaling gateway
US6496567B1 *	1998-05-07	2002-12-17	Mci Communications Corporation	Interactive voice response service node with advanced resource management
US6389126B1	1998-05-07	2002-05-14	Mci Communications Corporation	Service provisioning system for interactive voice response services
US6366658B1	1998-05-07	2002-04-02	Mci Communications Corporation	Telecommunications architecture for call center services using advanced interactive voice responsive service node
US7062020B1	1998-06-08	2006-06-13	Convergys Cmg Utah Inc.	System and apparatus for IVR port sharing
US6011844A	1998-06-19	2000-01-04	Callnet Communications	Point-of-presence call center management system
US6324276B1	1999-02-12	2001-11-27	Telera, Inc.	Point-of-presence call center management system
US6704563B1	1998-08-11	2004-03-09	Boston Communications Group, Inc.	Systems and methods for prerating costs for a communication event
US6667688B1	1998-08-28	2003-12-23	Royal Thoughts, L.L.C.	Detection system using personal communication device with response
US6608557B1	1998-08-29	2003-08-19	Royal Thoughts, Llc	Systems and methods for transmitting signals to a central station
CN1135789C *	1998-09-25	2004-01-21	索马网络公司	Method and system for negotiating telecommunication resources
US6671351B2	1998-10-21	2003-12-30	Royal Thoughts, L.L.C.	Assisted personal communication system and method
US6267672B1 *	1998-10-21	2001-07-31	Ayecon Entertainment, L.L.C.	Product sales enhancing internet game system
US7088233B2	1998-10-23	2006-08-08	Royal Thoughts, Llc	Personal medical device communication system and method

US7138902B2 *	1998-10-23	2006-11-21	Royal Thoughts, Llc	Personal medical device communication system and method
US20020169539A1 *	2001-03-28	2002-11-14	Menard Raymond J.	Method and system for wireless tracking
US6759956B2	1998-10-23	2004-07-06	Royal Thoughts, L.L.C.	Bi-directional wireless detection system
DE19852845B4	1998-11-10	2018-03-15	Vodafone Holding Gmbh	Bonus machining processes
US8135413B2 *	1998-11-24	2012-03-13	Tracbeam Llc	Platform and applications for wireless location and other complex services
US7966078B2	1999-02-01	2011-06-21	Steven Hoffberg	Network media appliance system and method
US6871191B1 *	2000-01-24	2005-03-22	Sam E. Kinney, Jr.	Method and system for partial quantity evaluated rank bidding in online auctions
US6273816B1	1999-03-22	2001-08-14	At&T Corp	Method and apparatus for rewarding groups of communication service users
US6223165B1	1999-03-22	2001-04-24	Keen.Com, Incorporated	Method and apparatus to connect consumer to expert
US6016338A *	1999-03-22	2000-01-18	At&T Corp.	Lottery method and apparatus having a tiered prize scheme
US6011835A *	1999-03-22	2000-01-04	At&T Corp	Method and apparatus for determining a caller's eligibility for a lottery and advising lottery winner during a same call
US5987101A *	1999-03-22	1999-11-16	At&T Corp.	Method and apparatus for determining a caller's odds for winning a lottery based on caller history
DE19915671A1 *	1999-04-07	2000-10-12	Nets Ag	System and method for telecommunication, for paying costs, for medical surveillance, for games
US6594639B1 *	1999-04-19	2003-07-15	At&T Corp.	Rewarding telephone callers based on call information
US7536002B1	1999-07-09	2009-05-19	Jpmorgan Chase Bank, National Association	System and method of intelligent call routing for cross sell offer selection based on optimization parameters or account-level data
US7124111B1 *	1999-09-14	2006-10-17	Jpmorgan Chase Bank, N.A.	Service charge adjustment platform
US6859784B1 *	1999-09-28	2005-02-22	Keynote Systems, Inc.	Automated research tool
US20020010608A1 *	1999-10-08	2002-01-24	Scott Faber	System for provding services in real-time overthe internet
US6513025B1 *	1999-12-09	2003-01-28	Teradyne, Inc.	Multistage machine learning process
JP2003518677A *	1999-12-23	2003-06-10	ノキア コーポレイション	Moving lottery
US6965865B2	1999-12-30	2005-11-15	Bank One Delaware N.A.	System and method for integrated customer management

US7255200B1 *	2000-01-06	2007-08-14	Ncr Corporation	Apparatus and method for operating a self-service checkout terminal having a voice generating device associated therewith
US7835957B1	2000-01-24	2010-11-16	Ariba, Inc.	Method and system for correcting market failures with participant isolation in dutch style online auctions
US6683943B2 *	2000-01-26	2004-01-27	Richard A. Wuelly	Automated mass audience telecommunications database creation method
US6767284B1 *	2000-03-14	2004-07-27	John R. Koza	Skill games
US7218921B2 *	2000-05-12	2007-05-15	Chikka Pte Ltd	Method and system for inviting and creating accounts for prospective users of an instant messaging system
US20010047321A1 *	2000-05-25	2001-11-29	Wyatt Gregory R.	Methods and systems for auctioning products
US9875492B2 *	2001-05-22	2018-01-23	Dennis J. Dupray	Real estate transaction system
US10684350B2	2000-06-02	2020-06-16	Tracbeam Llc	Services and applications for a communications network
US10641861B2	2000-06-02	2020-05-05	Dennis J. Dupray	Services and applications for a communications network
US7103344B2 *	2000-06-08	2006-09-05	Menard Raymond J	Device with passive receiver
US6865540B1	2000-08-09	2005-03-08	Ingenio, Inc.	Method and apparatus for providing group calls via the internet
US20020103746A1 *	2000-09-11	2002-08-01	Moffett Robert P.	Customizable group initiative
US7580890B2 *	2000-10-12	2009-08-25	Jpmorgan Chase Bank, N.A.	System and method for supervising account management operations
US6636590B1 *	2000-10-30	2003-10-21	Ingenio, Inc.	Apparatus and method for specifying and obtaining services through voice commands
US20020082871A1 *	2000-10-30	2002-06-27	Ted Younger	System and method for providing online insurance information
US7409700B1	2000-11-03	2008-08-05	The Walt Disney Company	System and method for enhanced broadcasting and interactive
EP1209822B1 *	2000-11-27	2007-01-10	NTT DoCoMo, Inc.	Method for provision of program and broadcasting system and server
DE10100224A1 *	2001-01-04	2002-07-25	Eolon Gmbh	Method for operating a telecommunications network
US6969320B2 *	2001-01-10	2005-11-29	Multimedia Games, Inc.	Distributed account based gaming system
US7289623B2 *	2001-01-16	2007-10-30	Utbk, Inc.	System and method for an online speaker patch-through
US6912399B2	2001-01-22	2005-06-28	Royal Thoughts, Llc	Cellular telephone with programmable authorized telephone number
US20040218732A1 *	2001-01-22	2004-11-04	Royal Thoughts, L.L.C.	Assisted personal communication system and method

US8121871B2 *	2001-01-26	2012-02-21	Genworth Financial, Inc.	System, method and software application for accessing and processing information
US6725102B2 *	2001-02-14	2004-04-20	Kinpo Electronics Inc.	Automatic operation system and a method of operating the same
DE10108870A1 *	2001-02-15	2002-09-05	Deutsche Telekom Ag	Providing service via telecommunications network involves generating communications logical records with data corresponding to user credits depending on user data and called-up service
US7953636B2 *	2001-02-21	2011-05-31	Genworth Financial, Inc.	System and method for providing customized sales-related data over a network
US6563910B2	2001-02-26	2003-05-13	Royal Thoughts, Llc	Emergency response information distribution
US6820802B2	2001-02-27	2004-11-23	American Express Travel Related Services Company, Inc.	Online card activation system and method
US6961482B2 *	2001-03-05	2005-11-01	Ncs Pearson, Inc.	System for archiving electronic images of test question responses
US6810232B2	2001-03-05	2004-10-26	Ncs Pearson, Inc.	Test processing workflow tracking system
US6675133B2	2001-03-05	2004-01-06	Ncs Pearsons, Inc.	Pre-data-collection applications test processing system
US6751351B2	2001-03-05	2004-06-15	Nsc Pearson, Inc.	Test question response verification system
US7016843B2 *	2001-03-09	2006-03-21	Bevocal, Inc.	System method and computer program product for transferring unregistered callers to a registration process
US20020133402A1 *	2001-03-13	2002-09-19	Scott Faber	Apparatus and method for recruiting, communicating with, and paying participants of interactive advertising
US20040066302A1 *	2001-03-28	2004-04-08	Menard Raymond J.	Interactive motion sensitive sensor
EP1380154A1 *	2001-04-19	2004-01-14	BRITISH TELECOMMUNICATIONS public limited company	Voice response system
US7739162B1	2001-05-04	2010-06-15	West Corporation	System, method, and business method for setting micropayment transaction to a pre-paid instrument
US7133662B2 *	2001-05-24	2006-11-07	International Business Machines Corporation	Methods and apparatus for restricting access of a user using a cellular telephone
US7133971B2 *	2003-11-21	2006-11-07	International Business Machines Corporation	Cache with selective least frequently used or most frequently used cache line replacement
US20020183008A1 *	2001-05-29	2002-12-05	Menard Raymond J.	Power door control and sensor module for a wireless system
US7865427B2	2001-05-30	2011-01-04	Cybersource Corporation	Method and apparatus for evaluating fraud risk in an electronic commerce transaction
US20020188497A1 *	2001-06-12	2002-12-12	Cerwin Francis Anthony	System and method for customer knowledge respository

US7110525B1	2001-06-25	2006-09-19	Toby Heller	Agent training sensitive call routing system
US20030013503A1 *	2001-07-16	2003-01-16	Royal Thoughts, L.L.C.	Intercom module for a wireless system
US6704403B2	2001-09-05	2004-03-09	Ingenio, Inc.	Apparatus and method for ensuring a real-time connection between users and selected service provider using voice mail
WO2003030100A2 *	2001-10-01	2003-04-10	Sit-Up Limited	Interactive broadcast or input method and system
US20030088443A1 *	2001-11-08	2003-05-08	Majikes Matthew George	System and method for personalizing and delivering insurance or financial services-related content to a user
US7027175B2 *	2001-11-15	2006-04-11	Hewlett-Packard Development Company, L.P.	Print processing system and method with print job reprocessing
US20100125521A1 *	2001-12-03	2010-05-20	Hanan Christopher C	Biller focused business to business electronic invoice presentment and accounts receivables reconciliation system
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US7580850B2	2001-12-14	2009-08-25	Utbk, Inc.	Apparatus and method for online advice customer relationship management
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US9740988B1	2002-12-09	2017-08-22	Live Nation Entertainment, Inc.	System and method for using unique device indentifiers to enhance security
US10366373B1	2002-12-09	2019-07-30	Live Nation Entertainment, Incorporated	Apparatus for access control and processing
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US8121898B2	2003-10-06	2012-02-21	Utbk, Inc.	Methods and apparatuses for geographic area selections in pay-per-call advertisement
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US7818238B1 *	2005-10-11	2010-10-19	Jpmorgan Chase Bank, N.A.	Upside forward with early funding provision
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US8125931B2 *	2006-01-10	2012-02-28	Utbk, Inc.	Systems and methods to provide availability indication
CA2637184C	2006-02-07	2016-08-16	Ticketmaster	Methods and systems for reducing burst usage of a networked computer system
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US20090003566A1 *	2007-06-29	2009-01-01	Rachel Wentink	System and method for scoring recorded interactions
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* Cited by examiner, † Cited by third party, ‡ Family to family citation

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US5898762A	1999-04-27	Telephonic-interface statistical analysis system
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Priority And Related Applications

Parent Applications (1)

Application	Priority date	Filing date	Relation	Title
US08/475,425	1985-07-10	1995-06-07	Continuation	Telephonic-interface statistical analysis system

Child Applications (1)

Application	Priority date	Filing date	Relation	Title
US09/827,614	1985-07-10	2001-04-05	Continuation	Telephonic-interface statistical analysis system

Priority Applications (2)

Application	Priority date	Filing date	Title
US09/270,241	1985-07-10	1999-03-15	Telephonic-interface statistical analysis system
US09/827,614	1985-07-10	2001-04-05	Telephonic-interface statistical analysis system

Applications Claiming Priority (6)

Application	Filing date	Title
US75329985A	1985-07-10	
US07/018,244	1987-02-24	Statistical analysis system for use with public communication facility
US07/194,258	1988-05-16	Telephonic-interface statistical analysis system
US07/335,923	1989-04-10	Telephonic-interface statistical analysis system
US08/475,425	1995-06-07	Telephonic-interface statistical analysis system
US09/270,241	1999-03-15	Telephonic-interface statistical analysis system

Legal Events

Date	Code	Title	Description
2002-11-19	CC	Certificate of correction	
2004-05-04	CO	Commissioner ordered reexamination	**Effective date**: 20040326

2004-08-03	RR	Request for reexamination filed	**Effective date**: 20040609
2004-12-20	AS	Assignment	**Owner name**: AMERICAN EXPRESS TRAVEL RELATED SERVICES COMPANY, **Free format text**: SECURITY INTEREST;ASSIGNOR:DELTA AIR LINES, INC.;REEL/FRAME:015478/0110 **Effective date**: 20041130
2005-03-18	FPAY	Fee payment	**Year of fee payment**: 4
2005-05-03	CC	Certificate of correction	
2005-09-29	AS	Assignment	**Owner name**: GENERAL ELECTRIC CAPITAL CORPORATION, GEORGIA **Free format text**: SECURITY AGREEMENT;ASSIGNOR:DELTA AIR LINES, INC.;REEL/FRAME:016610/0156 **Effective date**: 20050926
2009-03-30	REMI	Maintenance fee reminder mailed	
2009-09-18	LAPS	Lapse for failure to pay maintenance fees	
2009-10-19	STCH	Information on status: patent discontinuation	**Free format text**: PATENT EXPIRED DUE TO NONPAYMENT OF MAINTENANCE FEES UNDER 37 CFR 1.362
2009-11-10	FP	Lapsed due to failure to pay maintenance fee	**Effective date**: 20090918
2010-09-14	B1	Reexamination certificate first reexamination	**Free format text**: THE PATENTABILITY OF CLAIMS 11-20, 27, 28, 40, 41 AND 48-50 IS CONFIRMED. CLAIMS 1-10, 21-26, 29-39 AND 42-47 ARE CANCELLED.
2014-05-06	RR	Request for reexamination filed	**Effective date**: 20140318
2014-11-18	B2	Reexamination certificate second reexamination	**Free format text**: THE PATENTABILITY OF CLAIM 18 IS CONFIRMED.CLAIMS 1-10, 21-26, 29-39 AND 42-47 WERE PREVIOUSLY CANCELLED.CLAIMS 11-17, 19, 20, 27, 28, 40, 41 AND 48-50 WERE NOT REEXAMINED.
2015-03-03	CBM	Aia trial proceeding filed before patent trial and appeal board: covered business methods	**Free format text**: TRIAL NO: CBM2015-00053 **Opponent name**: FEDERAL EXPRESS CORPORATION

			Effective date: 20150112
2015-11-10	RR	Request for reexamination filed	**Effective date**: 20150914
2018-01-16	LIMR	Reexamination decision: claims changed and/or cancelled	**Kind code of ref document**: C3 **Free format text**: REEXAMINATION CERTIFICATE; CLAIMS 1-10, 21-26, 29-39 AND 42-47 WERE PREVIOUSLY CANCELLED. CLAIMS 11 AND 18 ARE CANCELLED. CLAIMS 12-17, 19, 20, 27, 28, 40, 41 AND 48-50 WERE NOT REEXAMINED. **Filing date**: 20150914 **Effective date**: 20180109

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
statistical method		title,description	24	0.000
communication		claims,abstract,description	126	0.000
method		claims,abstract,description	50	0.000
analytical method		claims,description	30	0.000
response		claims,description	26	0.000
storage		claims,description	18	0.000
accumulation		abstract,description	14	0.000
correlated		abstract,description	4	0.000

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