(51) International Patent Classification ⁶ :		(11) International Publication Number:	**WO 99/33012**
G06F 17/60	**A1**	(43) International Publication Date:	1 July 1999 (01.07.99)

(54) Title: METHOD AND APPARATUS FOR TARGETING OFFERS TO CONSUMERS
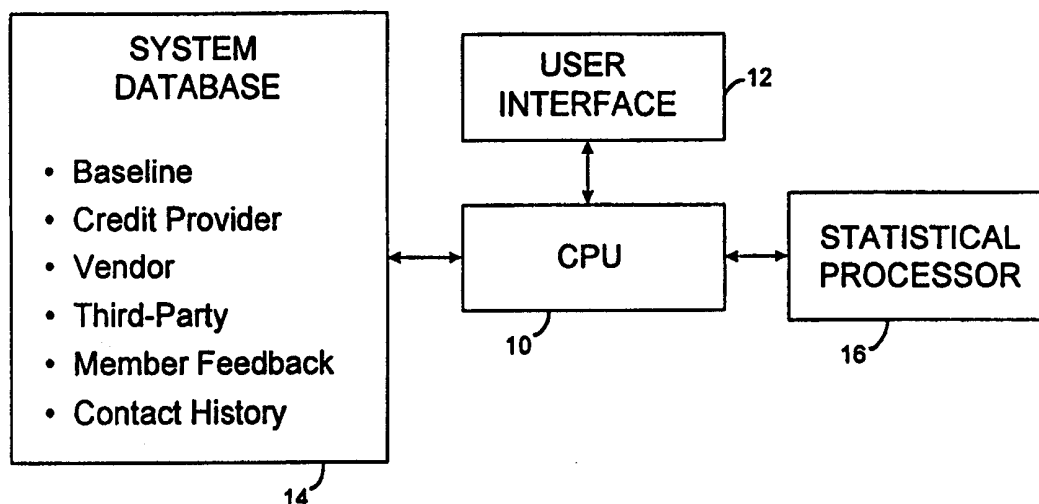
(57) Abstract

A computer based modeling system and method are provided for individually targeting different consumers to receive different offers from a plurality of different vendors. A statistical processor (16) receives data such as transaction, financial and demographic information from a consumer credit provider (20). The processor (16) also receives data like market research, product and customer information from different vendors (22) sponsoring the offers. The statistical processor analyzes the information from the consumer credit provider (20) and the different vendors (22) to assign individual offers to individual consumers based on a probability that an offer assigned to a consumer will be accepted by the consumer. Other sources of information for the statistical processor include market research, demographic information and consumer information from third party (24). Moreover, the processor can analyze feedback data (32) indicative of consumer acceptance and usage of the services provided under the offers.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

1

METHOD AND APPARATUS FOR TARGETING OFFERS TO CONSUMERS

BACKGROUND OF THE INVENTION

The present invention relates to a method and a
5   computer based modeling system for individually
targeting different consumers to receive different
offers from a plurality of different vendors. In an
illustrated embodiment, consumers are offered
memberships in brand name loyalty programs, and
10   billed for such memberships by a consumer credit
provider such as a utility, mortgage company, credit
or debit card company, bank or other institution
which bills its customers on a regular schedule.

In the past, direct marketers used mailing
15   lists to contact potential purchasers of various
products and services. Such mailing lists or "name
lists" were obtained from various sources, such as
subscribers to magazines, credit card holders,
telephone directories, and the like. In the early
20   days of direct marketing, scientific targeting of
consumers was not particularly sophisticated, and
response rates to mass mailings, for example, were
typically low.

More recently, telemarketing has provided a
25   vehicle for direct marketers to reach consumers, and
has been quite successful. As with direct mailing,
telemarketers rely on name lists to obtain consumer
contacts.

2

There are two well known types of name lists.
Demographic, or compiled lists are based on public
information such as sex, estimated income (e.g.,
averaged by zip code), birth date, marital status

5   and the like. Psychographic lists (also known as
response lists) obtain names due to consumer
responses. For example, such responses may comprise
subscribing to a magazine offer, ordering from a
mail order catalog, contributing to a charity, or

10   completing and returning a warranty card from a
purchased product. Various third party resources
are available to direct marketers in order to obtain
name lists and other information about consumers.
For example, R. R. Donnelley & Sons is a company

15   that provides various name lists and market research
services. Polk Co. is a resource of psychographic
lists, and obtains information by inserting
questionnaires into product boxes. Generally, such
questionnaires are presented in the form of a

20   warranty response card, and ask for personal
information over and above that needed to fulfill
the product warranty.

       More recently, techniques such as "customer
profile modeling" have been developed to discern the

25   traits of a typical buyer or donor. For example, a
charity may want to rent the mailing list of a
magazine. The charity would first pay the magazine
to search its list for the charity's 100,000 best
donors. If the search found that most of those big

3

donors who also subscribed to the magazine were male, had ordered their subscription in response to a magazine insert, and had paid by check, the charity would then rent more names from the magazine

5   list that fit that profile.

A similar prospecting tool is known as "mailed regression." A retailer might send its catalog to a random sampling of magazine subscribers. It would then rent names of additional subscribers who

10   matched the profiles of those who placed orders.

Another technique which was pioneered by a company known as SafeCard Services, Inc. in the 1970's is the direct marketing promotion of services to credit card holders. Thereafter, a company known

15   as Comp-U-Card International recognized the consumer appetite for bargains and capitalized on this fact by expanding the industry's membership service offerings to include discount shopping, travel, auto and dining clubs.

20   Past solicitations of credit card holders for "club memberships" providing various benefits have been targeted to various segments of an issuer's credit card portfolio. Such membership programs have carried unbranded labels; i.e., they have not

25   been associated with a particular brand name well known to the consuming public. Thus, prior "shopper's advantage" programs would offer brand name products from many different manufacturers with a low price guarantee.

4

Moreover, the process of targeting consumers for membership club offers has only focused on one specific offer. The sophistication of such targeting has not been such that a consumer group could be segmented into subgroups to which different membership offers would appeal. This has adversely affected the response rates to such offers and thereby increased the cost of obtaining each sale.

It would be advantageous to provide a computer based modeling system and methods for more successfully targeting vendor offers to consumers. It would be further advantageous to provide such a system and method for segmenting and prequalifying consumers using a predictive modeling approach in order to target appropriate club offers to consumers. A particularly advantageous approach to such a marketing scheme would be to provide a capability for matching each of a plurality of consumers to at least one of a plurality of vendor offers, such as brand name loyalty programs, based on the probability that the particular consumer will accept the offer.

The present invention provides a computer based modeling system and predictive marketing method having the aforementioned and other advantages.

5

SUMMARY OF THE INVENTION

The present invention provides a computer based
modeling system for individually targeting different
consumers to receive different offers from a
5   plurality of different vendors. A statistical
processor is provided which receives at least two
types of information, referred to as a "first input"
and a "second input." It should be appreciated that
the first and second inputs are not necessarily
10   physical inputs, but merely inputs of data to a
computer processor.

The first input to the statistical processor
provides at least one of transaction, financial and
demographic information from a consumer credit
15   provider. The information provided pertains to the
consumers. For example, the consumer credit
provider may be a credit card or debit card issuer,
a bank, a utility, a mortgage company, an Internet
service provider, or any other entity that provides
20   a continuity billing vehicle wherein consumers are
billed on a regular basis.

The second input to the statistical processor
provides at least one of market research, product
and consumer information from each of the different
25   vendors. Each vendor could comprise, for example, a
different consumer product manufacturer or service
provider which has a well known brand.

6

The statistical processor analyzes the
information from the first and second inputs to
assign individual offers to individual consumers.
The assignment of offers is based on a probability
5   that an offer assigned to a consumer will be
accepted by the consumer. In this manner, the
computer based modeling system can target different
consumers to receive offers from different vendors,
with a high probability that the offers will be
10   accepted by those consumers receiving them. Instead
of wasting marketing effort on consumers that may
not be interested in a particular vendor offer, a
list of consumers is segmented across different
vendors, and only those services which each
15   individual consumer is most likely to be interested
in are marketed to that consumer. In a preferred
embodiment, each consumer is matched with at least
one offer from the various offers presented by the
plurality of different vendors.
20   A database of baseline information is
accessible to the statistical processor. The
baseline information is used in computing the
probability that an offer assigned to a consumer
will be accepted by the consumer. The baseline
25   information identifies consumer characteristics that
correlate to each of the offers.
The statistical processor can compute the
probability that an offer will be accepted by a
particular consumer using single or multiple variate

7

regression analysis. In particular, the statistical
processor may assign scores indicative of a
correlation of each individual consumer to each
offer. The offers will then be assigned to the
consumers based on the scores.

In another embodiment, the statistical
processor may analyze the information from the first
and second inputs according to a first statistical
process in a first attempt to assign an offer to a
particular consumer. If the first statistical
process does not result in the assignment of an
offer to a consumer, the statistical processor
analyzes the information according to a second
statistical process in another attempt to assign an
offer to the particular consumer. In an illustrated
embodiment, the first statistical process comprises
a multiple regression analysis and the second
statistical process comprises a LOGIT analysis.
Other types of analyses can be used instead of
these, such as a chi-square analysis, or any other
statistical analysis well known in the art.

A third input to the statistical processor can
also be provided. This input provides at least one
of market research, demographic information and
consumer information from a third party information
source. For example, lifestyle information, life
stage information, survey data, magazine offer
respondents, catalog shoppers, magazine subscribers,
and other demographic and/or telephone and address

8

information can be provided by third party
information sources such as R. R. Donnelley & Sons,
Polk Co., and the like. In such an embodiment, the
statistical processor will analyze the information
5   from the first, second and third inputs to ascertain
the probability that an offer assigned to a
particular consumer will be accepted. Based on this
probability, individual offers will be assigned to
individual consumers.

10   A fourth input can be provided to the
statistical processor for providing information
indicative of past consumer responses to the offers.
Such information can comprise an indication of
whether or not a particular consumer accepted a
15   particular offer made. The information can further
indicate how much a consumer has used a particular
offer that was accepted (e.g., over a defined period
of time). This information provides feedback used
by the statistical process to refine the future
20   assignment of offers to consumers.

A method is provided in accordance with the
invention for individually targeting each of a
plurality of different consumers to receive at least
one particular offer from a plurality of different
25   merchandise and service providers having a
recognized brand name (the "vendors"). At least one
of transaction, financial and demographic
information pertaining to each of the individual
consumers is provided from a consumer credit

9

provider. At least one of market research, product
and consumer information is provided by each of the
different vendors. The information provided is
statistically analyzed in order to assign particular
5   offers to different consumers based on a probability
that an offer assigned to a consumer will be
accepted by the consumer. In an illustrated
embodiment, the offers comprise offers for
membership in brand name loyalty programs.

10   A first statistical process may be used during
the analyzing step in a first attempt to assign an
offer to a particular consumer. A second
statistical process is used if the first attempt is
unsuccessful. For example, such statistical
15   processes may comprise a multiple regression
analysis and a LOGIT analysis, or any other suitable
statistical analysis technique.

The method can comprise the further step of
providing at least one of market research,
20   demographic information and customer information
from a third party information source. In such an
instance, the information from the consumer credit
provider, the different vendors, and the third party
information source is all analyzed in order to
25   ascertain the probability that particular consumers
will accept particular offers, and to assign
individual offers to individual consumers.

The method can comprise the further step of
providing information indicative of past consumer

10

responses to the offers in order to refine the
future assignment of offers to consumers. The past
consumer responses can include acceptance of the
offer or usage of the benefits provided thereby.

5   In an implementation where the offers comprise
offers for membership in brand name loyalty
programs, the vendors are the owners or licensees of
the brand names. Moreover, the consumer credit
provider renders bills for membership offers
10   accepted by the consumers. Thus, the consumer
credit provider will advantageously be any provider
of credit (or future credit) who can offer a
continuity billing vehicle, wherein bills or
statements are sent to the consumers on a regular
15   basis.

11

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram of the computer based modeling system in accordance with the present invention;

5   Figure 2 is a more detailed block diagram illustrating the inputs to and outputs from the statistical processor of the computer based modeling system; and

Figure 3 is a flowchart illustrating the

10   development of a baseline database for use by the statistical processor.

12

DETAILED DESCRIPTION OF THE INVENTION

The computer based modeling system and method
of the present invention provide groups of consumer
names segmented by offers to which the consumers are
5   most likely to respond. In an illustrated
embodiment, the offers comprise membership offers to
brand name loyalty programs or "clubs" which offer
various advantages to the consumers. Such
advantages may include, for example, discounts to
10   brand name merchandise where the brand corresponds
to the membership club, coupons and rebates for
merchandise which will be of interest to the club
members, and free or discounted subscriptions to
magazines which will be of interest to the club
15   members.

Examples of such clubs are a kid's club under
the "Sesame Street/Children's Television Workshop"
brand, a sewing and crafts club under the
"Simplicity" brand, an outdoor adventure club under
20   the "Trailside" brand, and a gardening club under
the "Burpee" brand. Computer based modeling is
provided to target the different clubs to different
consumers that may be interested in joining the
club. The targeting is accomplished using
25   predictive modeling techniques which can ascertain
the probability that an offer will be accepted by an
individual consumer based on information from
various sources. The sources include consumer

13

credit providers, the vendors of the branded
products and/or services, and third party
information sources which supply various demographic
and marketing information. This information,

5   coupled with field trials, is used to provide a
database of baseline information on which the model
is based. The model can be continuously refined by
providing feedback indicative of consumer acceptance
of offers and/or club members' use of the products

10   and services provided by the club.
        The output generated by the model is
particularly useful in telemarketing. Once a
telemarketer has the assignments of different clubs
to individual consumers (e.g., individual persons or

15   families), the consumers are contacted and offered
the club most likely to be accepted by the
particular consumer. It should be understood that
more than one club may be offered to each consumer,
preferably at different times. The assignment of

20   different clubs to consumers can be ranked, so that
the consumer will be offered the most likely to be
accepted club first, then the next most likely to be
accepted club, and so forth.
        Figure 1 is an overview of the computer based

25   modeling system. A central processing unit (CPU) 10
is provided at the heart of the system, and
communicates bidirectionally with a user interface
12, system database 14, and statistical processor
16. The user interface can comprise any standard

14

user interface, such as a keyboard, mouse and
display operating under the Windows environment or
other graphical user interface. The purpose of the
user interface is to control the operation of the
5   computer modeling system, and to enable the input
and output of the desired information and generation
of desired reports. Such user interfaces are well
known and will be easily implemented by those
skilled in the art.

10   The system database contains various categories
of information. One category is baseline
information, which is developed during a
premarketing test in which a statistical sampling of
consumers is contacted in accordance with well known
15   marketing techniques. For example, if one of the
offers to be made is for a club directed toward
children, a sampling of consumers will be contacted
to determine which are most receptive to a club
offering services directed toward children. The
20   demographic, financial, lifestyle and other
available information relating to the consumers
expressing interest in such a club is compiled into
a model indicative of the characteristics of persons
most likely to respond to the club offer. These
25   characteristics are then stored as baseline
information in the system database 14.

Information used to build the baseline database
and to subsequently match offers to consumers is
provided by various sources in accordance with the

15

invention. One source is the credit provider that
will be responsible for billing consumers for the
club memberships. Such credit providers can be any
entity that provides regular billing (i.e., a
5   "continuity billing vehicle"). Examples are gas,
oil, and electric utility companies, cable
television operators, mortgage companies, telephone
companies, credit card companies, banks which send
monthly checking accounts and/or debit card
10   statements, Internet service providers, oil
companies sending monthly statements for gasoline
credit cards, retailers such as department stores,
and the like. Information provided by the credit
providers is quite comprehensive. It includes
15   transaction information, such as what a particular
consumer bought with their credit card over a
specific time period (e.g., the past 12 months).
Financial information is provided in the nature of
when the card was last used, the consumer's open
20   balance, how much has been spent over a specified
period of time, how long the consumer has been a
card holder, whether the consumer has responded
previously to direct marketing efforts, the type of
card (e.g., silver, gold or platinum MasterCard or
25   Visa), the consumer's credit worthiness, payment
history, and other relationships with the financial
institution that sponsors the card. Demographic
information is also supplied by the credit provider,
including the consumer's age, sex, income, number of

16

people in family, whether they maintain a joint or
single account, whether the consumer is a home
owner, the status of home equity loans, personal
loans, and recreational vehicle loans, the

5   geographic area in which the consumer lives, works
and spends money, and where available, the
consumer's race. Additionally, the prior contact
history and response to vendor offers may be
supplied. The vast amount of information supplied

10   by the credit provider is stored in the system
database 14.

Another category of information stored in the
system database is provided by vendors of the offers
to be made. For example, if a Sesame Street brand

15   loyalty club is to be offered, information will be
provided by the Children's Television Workshop
(and/or its advertisers and licensees of the Sesame
Street brand) concerning its current customers,
products and the like. More particularly, the

20   computer system and method of the present invention
will look to the vendor for providing focus group
research, syndicated research (e.g., from a source
such as Nielson), a list of current and past
customers, transaction level information indicative

25   of how much each customer spends and on what, the
demographics and geographic areas in which the
vendor's current and past customers live, survey
information obtained from customers of the vendor's
brand, the vendor's list of advertisers, licensees,

17

retail outlets, product line information, and the
like.

Third party information may also be provided.
This includes information from consumer research
5   organizations such as R. R. Donnelley & Sons, Polk
Co., and the like. Such information may include
lifestyle information on individual consumers and
households, life stage information, survey data
indicative of an individual consumer's interests,
10   hobbies, health ailments and the like, information
as to which consumers respond to different types of
offers such as magazine offers, coupons, rebates,
etc., magazine subscribers, catalog shoppers, and
other available demographic, telephone and address
15   information. Third party information may also
include input from the direct marketing
association's telephone and mail preference service,
which promises to remove names from telemarketing
and direct marketing lists upon request. Such
20   information is useful to comply with the law
prohibiting solicitation of consumers who have
requested not to be solicited. Such third party
information is stored in the system database 14.

Another category of information stored in the
25   system database is member feedback information.
Once a consumer accepts an offer such as a club
membership, the fact that the offer has been
accepted is recorded in the system database.
Moreover, the consumer's use of the club benefits is

18

monitored to determine which consumers use which
benefits and how much use different categories of
consumers make of the clubs. This information is
useful in refining the model for future assignments
5   of offers to consumers.

The statistical processor 16 is used to refine
and use the model to generate consumer targets for
the various vendor offers. The consumer targets are
individually contacted via telemarketing and/or
10   direct marketing techniques well known in the art.
The operation of the statistical processor is
illustrated in greater detail in Figure 2.

As shown in Figure 2, the credit provider
information 20, vendor information 22 and third
15   party resources 24 (all of which can be output from
the system database 14) is provided to a front end
26 of the statistical processor. The front end 26
applies a statistical analysis such as multiple
regression and/or LOGIT, chi-square or the like to
20   the input data. Single or multiple variate
regression analysis is a powerful statistical
technique which enjoys low predictive error and high
discrimination. It identifies the combination of
characteristics that best predicts specific consumer
25   behavior. The result of the multiple regression
analysis is a regression equation, which is a tool
used to store and rank customers or prospects.

The LOGIT regression, also known as the Rodbard
of Probit regression is a type of discrete choice

19

analysis that market researchers use to predict how well a product or service will be received in the market. Analogous in many ways to conjoint analysis, discrete choice analysis differs by having respondents choose one of several product packages or options presented. Discrete choice modeling can be used to answer various marketing questions. It can provide direct predictive estimates of market share for a new or existing product. It can also be used to make estimates of future market demand. Many different data collection techniques can be used to implement a discrete choice model. Examples include mail and telephone surveys.

The various information provided about each individual consumer is statistically matched to the baseline information, in order to determine which consumer is most likely to accept which vendor offer. The matching is provided by a statistical back end 28 which assigns offers to consumers based on the statistical analysis provided by front end 26. The back end 28 segments the consumers by various vendor offers (e.g., branded clubs) that statistically would be most interesting to the consumer. Then, the clubs which match each consumer are sorted by the probability that the consumer will accept a membership in the club. The results of the sorting are stored, as indicated diagrammatically by bins 34, where each bin corresponds to a different offer assigned to the particular consumer based on

20

the probability that the consumer will accept the
offer (e.g., for membership in a particular branded
club).

The results of the segmentation and sorting for
all of the individual consumers whose data is
analyzed is provided (e.g., in a telemarketing list
form) for ultimate marketing to the consumers, as
indicated at box 30. As noted above, such marketing
may comprise telemarketing, direct mail marketing,
or any other marketing technique known in the art.

The results of the marketing efforts are
reported to a member feedback database 32, which
maintains a record as to which consumers accepted or
rejected which offers. The member feedback database
is also supplemented with information regarding the
use of the offered services by the members over
time. For example, a consumer may accept membership
in a club, pay the club dues, but never use the
membership benefits. Another member may use the
membership benefits extensively. Other members will
use some of the benefits but not all. All of this
information is compiled in the member feedback
database, and fed back to the statistical processor
front end 26 for subsequent analysis and use in
refining the baseline information that is used in
targeting subsequent consumers. By using the
feedback data, the accuracy of the profiles which
define characteristics of consumers most likely to

21

accept and use a particular offer is constantly
improved.

Figure 3 is a flowchart illustrating the
initial development of the baseline database.

5   Consumer information (e.g., credit provider, vendor
and third party resource information) is provided
from a consumer information database 40 to a scoring
model development process 42. The scoring model
development process segments consumers according to

10   the consumer information based on initial hypotheses
as to which consumers would be interested in a
particular vendor offer under consideration. The
consumers with the highest likelihood of positively
responding to an offer (i.e., those with the highest

15   "scores") are contacted via telemarketing or
otherwise. Those that accept the offer are provided
with the opportunity to use the benefits provided
under the offer. The actual use by the consumers is
analyzed at box 44, and a profitability analysis is

20   undertaken at box 46. It is noted that the benefit
usage analysis may simply be an analysis of which
consumers accepted the offer. Alternatively, the
benefit usage analysis may be conducted over a
period of time which enables the study of which

25   consumers use which of the benefits offered under
the program. The profitability analysis takes
various factors into account, such as the number of
consumers that have to be contacted in order to
generate a sale and the number of sales generated

22

overall. The results of the benefit usage analysis
and profitability analysis are analyzed at box 48,
and if the program offered to the consumers (e.g., a
club membership) is found to be profitable, the
5   program will be rolled out for full scale marketing.
        As will be appreciated by those skilled in the
art, the scoring model development must be based on
a statistically significant sample of consumers.
Once a successful model is developed for a
10   particular program, the program is added to other
programs which are targeted to individual consumers
according to the probability that each consumer will
accept the particular program offered.
        It should now be appreciated that the present
15   invention provides a method and apparatus for
individually targeting each of a plurality of
different consumers to receive at least one
particular offer from a plurality of different
vendors. The invention provides a vast improvement
20   over prior art methods, in which a list of consumers
was analyzed and filtered on the basis of one offer
only. In the prior art, if a consumer was not found
to be qualified for an offer, no offer would be made
to that consumer. With the present invention,
25   different offers are available, and the goal is to
make at least one offer to each consumer. Thus, the
present invention provides a substantially greater
name utilization, wherein 80 percent or more of the
names provided by a credit provider can routinely be

23

marketed at or above the same profitability levels,
instead of something on the order of only 20 to 50
percent, as in the past.

With the present invention, a default offer can

5   also be provided. For example, there may be an
individual for whom none of a plurality of
specialized brand name loyalty clubs is particularly
appropriate. This individual can be offered a
default club of general interest, such as a nature

10   club. The provision of a default offer can
theoretically increase the name utilization to 100
percent.

Once the consumer names are matched to specific
offers, the offers can be marketed using

15   telemarketing or direct marketing techniques. For
example, where a credit provider such as ABC bank is
used to provide billing for a brand loyalty club for
XYZ brand, the telemarketer can approach the sale by
explaining that the telephone call has been endorsed

20   by both ABC bank and XYZ brand, or by the XYZ brand
alone. Since both of these names are well
recognized by the consumer, the credibility of the
telemarketer is improved. The telemarketer can then
explain how acceptance of the offer will benefit the

25   consumer. For example, discounts, product
availability and convenience are all reasons that a
consumer may wish to join a name brand loyalty club.
A free trial offer (e.g., 30 days) can then be
granted, after which the consumer will be billed by

24

the credit provider on a regular billing to the
consumer. The "membership dues" or other payment
for the offer can, of course, be billed all at once
or on a periodic basis, such as monthly.

5   Although the invention has been described in
connection with various specific embodiments, it
will be appreciated that numerous adaptations and
modifications may be made thereto without departing
from the scope of the invention as set forth in the

10   claims.

25

WHAT IS CLAIMED IS:

1.   A computer based modeling system for individually targeting different consumers to receive different offers from a plurality of different vendors, comprising:

a statistical processor;

a first input to said statistical processor for providing at least one of transaction, financial and demographic information from a consumer credit provider, said information pertaining to said consumers; and

a second input to said statistical processor for providing at least one of market research, product and customer information from each of said different vendors;

wherein said statistical processor analyzes the information from said first and second inputs to assign individual offers to individual consumers based on a probability that an offer assigned to a consumer will be accepted by the consumer.

2.   A computer based modeling system in accordance with claim 1 further comprising:

26

a database of baseline information
accessible by said statistical processor for
use in computing said probability, said
baseline information identifying consumer
characteristics that correlate to each of said
offers.

3.   A computer based modeling system in
accordance with claim 1, wherein said
statistical processor computes said probability
using a regression analysis.

4.   A computer based modeling system in
accordance with claim 3 wherein said
statistical processor assigns scores indicative
of a correlation of each individual consumer to
each offer, and assigns offers to consumers
based on said scores.

5.   A computer based modeling system in
accordance with claim 1 wherein said
statistical processor analyzes the information
from said first and second inputs according to
a first statistical process in a first attempt
to assign an offer to a particular consumer,
and analyzes the information according to a

27

second statistical process if said first
attempt is unsuccessful.

6.   A computer based modeling system in
accordance with claim 5 wherein said first
statistical process comprises a regression
analysis.

7.   A computer based modeling system in
accordance with claim 6 wherein said second
statistical process comprises a LOGIT analysis.

8.   A computer based modeling system in
accordance with claim 1 further comprising:

       a third input to said statistical
processor for providing at least one of market
research, demographic information, and consumer
information from a third party information
source;

       wherein said statistical processor
analyzes the information from said first,
second and third inputs to ascertain said
probability and assign individual offers to
individual consumers.

28

9.   A computer based modeling system in accordance with claim 8 further comprising:

a fourth input to said statistical processor for providing information indicative of past consumer responses to the offers;

wherein said statistical processor uses the information from said fourth input to refine the future assignment of offers to consumers.

10.   A computer based modeling system in accordance with claim 1 further comprising:

a fourth input to said statistical processor for providing information indicative of past consumer responses to the offers;

wherein said statistical processor uses the information from said fourth input to refine the future assignment of offers to consumers.

11.   A method for individually targeting each of a plurality of different consumers to receive at least one particular offer from a plurality of different vendors, comprising the steps of:

29

providing at least one of
transaction, financial and demographic
information pertaining to each of the
individual consumers from a consumer credit
provider;

providing at least one of market
research, product and consumer information from
each of said different vendors; and

statistically analyzing the
information provided in the preceding steps to
assign particular offers to different consumers
based on a probability that an offer assigned
to a consumer will be accepted by the consumer.

12. A method in accordance with claim 11
wherein said offers comprise offers for
membership in brand name loyalty programs.

13. A method in accordance with claim 11
wherein a first statistical process is used
during said analyzing step in a first attempt
to assign an offer to a particular consumer,
and a second statistical process is used if
said first attempt is unsuccessful.

30

14.   A method in accordance with claim 13
wherein said first statistical process
comprises a regression analysis.

15.   A method in accordance with claim 14
wherein said second statistical process
comprises a LOGIT analysis.

16.   A method in accordance with claim 11
comprising the further step of providing at
least one of market research, demographic
information, and customer information from a
third party information source;

        wherein the information from said
consumer credit provider, different vendors and
third party information source is analyzed
during said analyzing step to ascertain said
probability and assign individual offers to
individual consumers.

17.   A method in accordance with claim 16
comprising the further step of providing
information indicative of past consumer
responses to the offers to refine the future
assignment of offers to consumers.

31

18. A method in accordance with claim 16 wherein said offers comprise offers for membership in brand name loyalty programs.

19. A method in accordance with claim 18 wherein:

said vendors are owners of the brand names; and

said consumer credit provider renders bills for membership offers accepted by the consumers.

20. A method in accordance with claim 11 comprising the further step of providing information indicative of past consumer responses to the offers to refine the future assignment of offers to consumers.
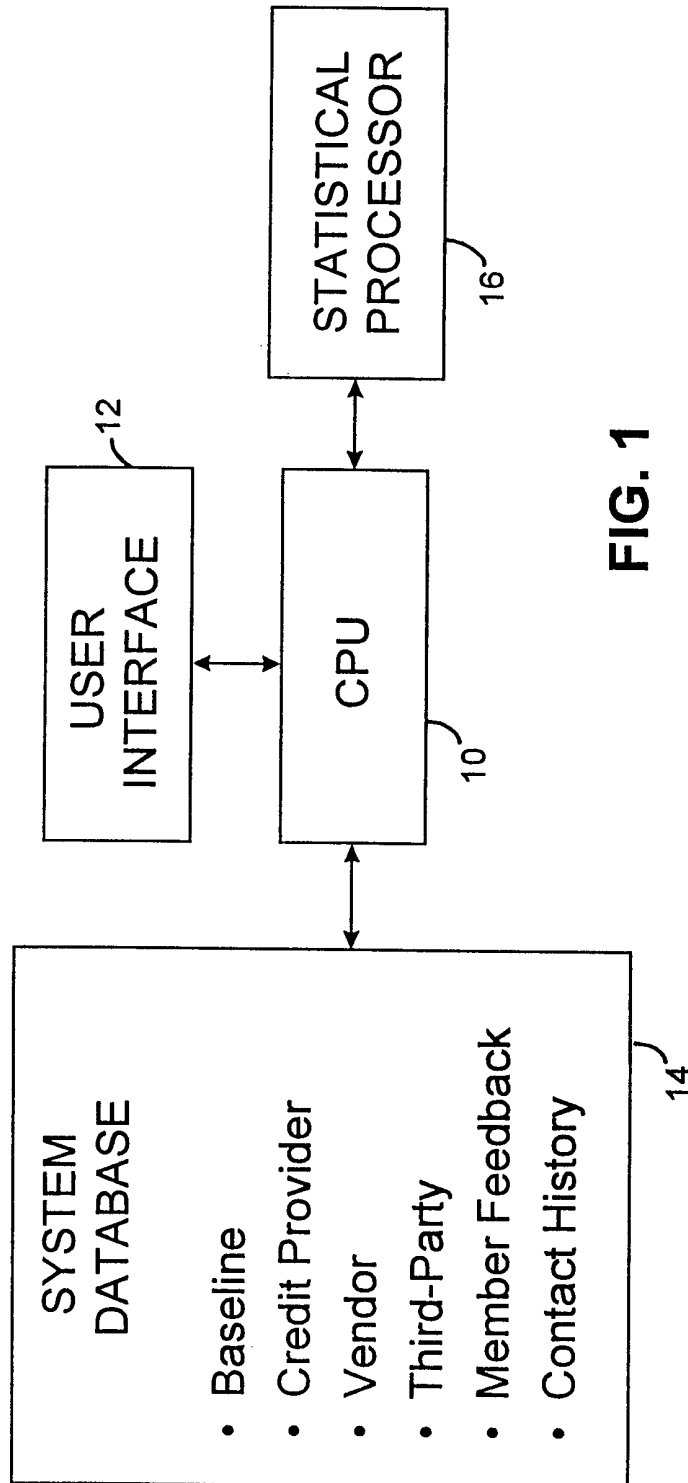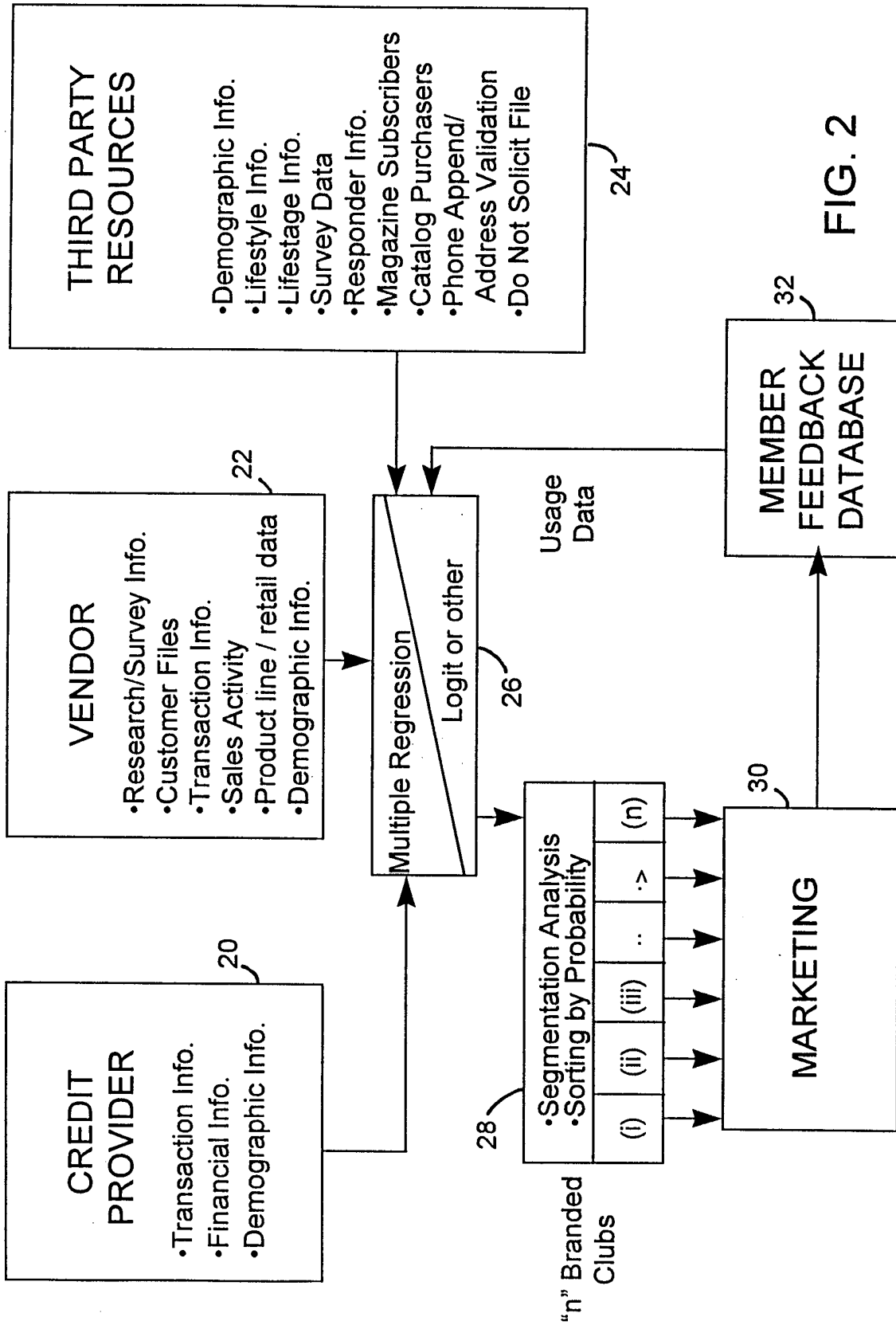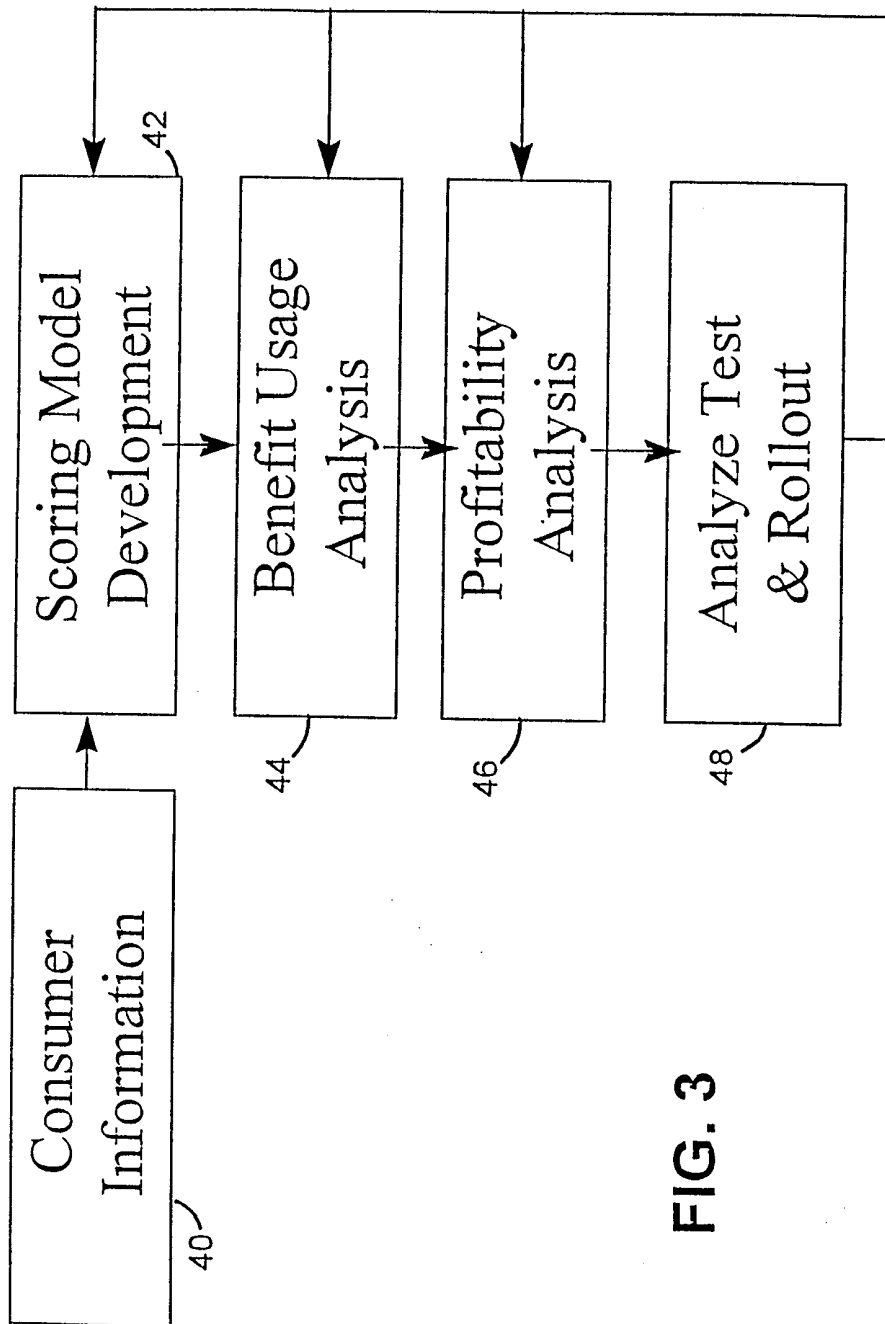
FIG. 1

2/3

FIG. 2

Consumer Information

40

Scoring Model Development

42

Benefit Usage Analysis

44

Profitability Analysis

46

Analyze Test & Rollout

48

FIG. 3

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6)　:G06F 17/60

US CL　:705/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. :　705/14, 26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, IEE, WPO, DIALOG

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US RE34,915 A (NICHTBERGER ET AL.) 25 April 1995, see fig. 1 (16)(12); col. 8, lines 38-40; col. 4, lines 59-64; col. 7, lines 22-24; claim 21, col. 18, lines 30-33; col. 8, lines 38-40; col. 2, lines 22 and 25; col. 6, lines 7-12.	1-20

☒ Further documents are listed in the continuation of Box C.　　☐ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier document published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed

"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 FEBRUARY 1999	19 APR 1999

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer M. IRSHADULLAH Telephone No. (703) 308-6683

Form PCT/ISA/210 (second sheet)(July 1992)★

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	BRANDES, DIANE "Marketing Database Helps Build Business and Malls" Direct Marketing vol. 59, issue 3, July 1996, see page 1 of 3 last but one paragraph, lines 2-3; last paragraph last 3 lines; page 2 of 3 paragraph 6 and last paragraph lines 1-5.	1-20