(54) Title: A COMPUTER SYSTEM, COMPUTER EXECUTABLE INSTRUCTIONS AND METHOD FOR DATA EXTRACTION AND ANALYSIS

(57) Abstract: A computer system, computer executable instructions and a method for data extraction and analysis in which a third party provides a computer system and receives data from a number of entities that have sales forces and an interest in analysing data related to promotional activity directed at customers. The third party provides reports of data analysis that combines data from the various entities. The data includes various information related to customers and includes the ranking of importance of customers along with data relating to resources allocated to marketing towards each customer.
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

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A COMPUTER SYSTEM, COMPUTER EXECUTABLE INSTRUCTIONS AND
METHOD FOR DATA EXTRACTION AND ANALYSIS

TECHNICAL FIELD

The present invention relates to a method of data extraction, and analysis, and in
particular, though not solely, to a method of extracting and analysing marketing
and/or promotional activity data from a plurality of business entities.

BACKGROUND ART

Companies which rely on the sale of goods and/or services (hereinafter referred to as
“products”) to generate revenue often direct resources (such as labour and funding)
into marketing and promoting those products to a customer base, which may include
actual existing customers and/or prospective future customers.

To facilitate the efficient allocation of these (limited) resources it is desirable for
companies to collect information about their customer base in order to develop and
enhance their understanding of the factors which will drive customers to purchase
their products. These factors may include the age, sex, demographic, socioeconomic
group and education of customers in the customer base. Such information may then
be used by companies to aggregate customers into groups or segments based on
commonalities of these factors. The aggregation of customers into segments may
subsequently be used by a company to focus resources in a differentiated manner to
each segment. For example, the segmentation may be by importance to the
company. The key goal of this approach is that companies will be able to out-
resource or out-service their competitors within specific defined customer segments
so that they may positively drive sales and thereby increase revenue and profit.

Companies will often collect sales data which may be used to obtain an
understanding of how effectively they have allocated resources to the marketing and
promotion of their products. Such data is typically analysed internally and any key
parameters or performance indicators derivable from the data are generally reported
to the company's sales and/or marketing teams. The key parameters or performance
indicators may include the total contacts made between sales representatives and
customers and/or the customer segments, the percentage of customers contacted by
sales representatives in a defined period and the frequency of the contact and the
share of voice (that is, the number of contacts made by that company in a particular
segment as a percentage of total contacts in that segment).

Due to the competitive nature of the business environment a company's own internal
performance data is not normally shared with its competitors. However, companies
do retain a strong desire to better understand how their competitors are performing,
and in particular against their own customer base.

In response to such a demand market research companies have set up "customer
panel" data to provide competing companies with data about their own and their
competitor's marketing and promotional activity. The customer panel is a select group
of customers who provide feedback on contact they have had from each company.
However, this type of data does not accurately represent market activity as the
"customer panel" is only a sample of the total customer population. Moreover, it is not
possible to break the "customer panel" down to adequately represent a company's
territory or sales structure, which affects its ability to use the data for performance
reporting at varying levels of granularity (that is at, for example, a national, regional or
local level). Additionally, the data obtained does not enable differentiation of
customers based on a particular company's defined segments. This produces
ambiguous results if a company selects to focus a resource on a single subset of the
customer base. Finally, (and perhaps most importantly) the availability of such data
does not enable a company to understand the marketing and promotional strategy
and resource allocation that their competitors are adopting against their own defined customer segments.

Business organisations are also known to use sales and marketing management systems (usually but not always electronic), many of which have historically been termed electronic territory management systems (hereinafter an organisation’s sales and marketing management system will be abbreviated to “ETMS”). Such systems comprise some form of database to collect sales force and marketing activity through a user interface and usually also provide some reporting functionality for the data stored in the database. Prior art ETMS’s are currently supplied as industry standard software suites from vendors such as Seibel, Dendrite and Stay In Front. These commercial products are designed for use by a single company or a group of companies which have their own business rules for structuring data. Such ETMS’s are not adapted to rationalise data from different organisations with different business rules and data frameworks, which is a disadvantage.

It is therefore an object of the present invention to provide a method of data extraction and analysis which goes at least some way towards overcoming the above disadvantages, and/or which will at least provide the industry with a useful choice.

As used herein the term “matching” relates to identifying customers, or such like, which are related in common to two or more sets of data.

As used herein the term "contacts" refers to contact made including, but not limited to, calls, visits, emails, letters, and such like.

As used herein the terms “calls”, “called on”, and such like, are intended to have a meaning which includes telephone calls, in person calls.
As used herein the term "segments" used in relation to customers and such like is intended to refer to any grouping of customers.

As used herein the term "isolation" is intended to refer to a relationship where participation of or communication or data from an entity is not required.

As used herein the term "data structure" is intended to refer broadly to any arrangement of data including tables, and tabulated data structures.

As used herein the term "master list" refers to a list held by the third entity of the customers, for example, of the other entities which allows referencing of the customers independently of lists or identifiers provided by those entities. The master list is useful for cross-referencing the lists provided by each entity.

All references, including any patents or patent applications cited in this specification are hereby incorporated by reference. No admission is made that any reference constitutes prior art. The discussion of the references states what their authors assert, and the applicants reserve the right to challenge the accuracy and pertinency of the cited documents. It will be clearly understood that, although a number of prior art publications are referred to herein, this reference does not constitute an admission that any of these documents form part of the common general knowledge in the art, in New Zealand or in any other country.

It is acknowledged that the term 'comprise' may, under varying jurisdictions, be attributed with either an exclusive or an inclusive meaning. For the purpose of this specification, and unless otherwise noted, the term 'comprise' shall have an inclusive meaning - i.e. that it will be taken to mean an inclusion of not only the listed components it directly references, but also other non-specified components or elements. This rationale will also be used when the term 'comprised' or 'comprising' is used in relation to one or more steps in a method or process.
Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

**DISCLOSURE OF INVENTION**

In a first aspect, the invention may broadly be said to consist in a method of analysing data for a first entity having a sales force and/or marketing resource, comprising the steps of:

i) inputting first data from the first entity, said first data including information on promotional activity related to a plurality of customers of said first entity, wherein the first data includes a ranking of importance of customers to the first entity;

ii) inputting second data from a second entity having a sales force and/or marketing resource, said second data providing information on promotional activity related to a plurality of customers of said second entity, wherein the second data includes a ranking of importance of customers to the second entity and wherein at least one customer is related in common to the first and second entities;

iii) comparing said information on promotional activity for the first entity with said information on promotional activity data for the second entity on a customer-by-customer basis; and

iv) outputting a result of said comparison of said information on promotional activity.

Preferably, the method includes the step of matching each customer in the first data with that same customer in the second data.
Preferably, the matching includes creating a third party master list of customers of the first and second entities.

Preferably, the method includes the step of inputting first and second data into a common data structure.

Preferably, the common data structure comprises a join table which provides cross-referencing of individual customers of the first or second entities.

Preferably, the data structure includes match references for the same customers of each entity, whereby given customers are capable of being referenced independently of identifiers used by the first or second entities.

Preferably, the method includes inputting additional data from one or more additional entities, each having respective sales forces and/or marketing resources, said additional data including information on promotional activity related to a plurality of customers of the respective entity wherein the respective data includes a ranking of importance of customers to the respective entity and includes the step of comparing said information on promotional activity on a customer-by-customer basis and the step of outputting a result of said comparison of said information on promotional activity.

Preferably, the promotional activity data includes, information on the number of contacts made with given customers.

Preferably, the promotional activity data includes information on the number of contacts made with given customers in different time periods.

Preferably, the result includes the proportion of the total calls made by the first and any other entity to their customers.

Preferably, contacts made with a given customer comprise calls.
Preferably, the result includes the percentage of the customers that have been called on by the first entity and by other entities.

Preferably, the result includes the average frequency that customers were called on by the first entity and any other entity in a defined time period.

Preferably, the ranking of importance provided to customers by an entity comprises an allocation of given customers of that entity to one of a predetermined number of customer segments, each segment having a different ranking of importance to that entity.

Preferably, the result includes the proportion of the total calls made to a customer segment of the first entity by the second and/or any subsequent entity.

Preferably, apart from the steps of inputting first data and outputting a result, the method is carried out in isolation of the first entity.

Preferably, the customer ranking information within any respective entity’s data is not shared with any other entity.

Preferably, the step of outputting includes the step of ordering the result by the customer ranking of importance applied by the first entity.

Preferably, the data input from each entity also includes geographical location information for given customer.

Preferably, the step of outputting includes the step of ordering the result by geographic location and then by customer ranking according to the first entity.

Preferably, the data input from each entity includes promotional activity for given customers in relation to a plurality of different products.
Preferably, the step of outputting includes the step of ordering the result by product and then by customer ranking according to the first entity.

Preferably, said given customers may include all customers of the entity.

In a second aspect, the present invention may broadly be said to consist in a set of computer executable instructions stored on a computer readable medium which carries out the method according to the first aspect.

In a third aspect, the present invention may broadly be said to consist in a computer system for analysing data for a first entity having a sales force and/or marketing resource, said system comprising:

i) means for inputting first data from the first entity, said first data including information on promotional activity to each of a plurality of customers of said first entity, wherein each customer in the first data includes a ranking of importance of customers to the first entity;

ii) means for inputting second data from a second entity having a sales force and/or marketing resource, said second data providing information on promotional activity to each of a plurality of customers of said second entity, wherein the second data includes a ranking of importance of customers to the second entity and wherein at least one customer is in common to the first and second entities;

iii) means for comparing said information on promotional activity for the first entity with said information on promotional activity data for the second entity on a customer-by-customer basis; and

iv) means for outputting a result of the comparison of said information on promotional activity.
Preferably, the computer system is adapted to match each customer in the first data with that same customer in the second data.

**BRIEF DESCRIPTION OF DRAWINGS**

Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings in which:

**Figure 1**

is a flow diagram illustrating the steps involved in a method of extracting and analysing data in accordance with a preferred embodiment of the present invention;

**Figure 2**

is a graphical representation of a sample database table generated by apparatus configured to perform the method as summarised in Figure 1 subsequent to receiving and inputting raw data from various entities, and

**Figure 3**

is a graphical representation of a sample report generated by apparatus configured to perform the method as summarised in Figure 1.

**BEST MODES FOR CARRYING OUT THE INVENTION**

With reference to Figure 1, a schematic flow diagram illustrating the steps involved in a method of extracting and analysing data in accordance with a preferred embodiment of the present invention is shown.

The present invention is particularly suited for extracting and analysing data from a plurality of entities, and more particularly, entities having respective sales forces and/or promotional activity who supply goods and/or services (hereinafter “products”) to customers. For the purposes of this specification an entity may be an individual,
group of individuals and/or a business organisation. For illustrative purposes only
reference throughout this specification will be made to the entities being
pharmaceutical manufacturing companies although this should in no way be seen as
limiting as the applicants envisage that the present invention may be equally and
effectively applied across a range of industries, such as photocopier sales or in the
banking and/or insurance industries.

Reference throughout this specification will also be made to the existence of a third
party entity which facilitates the execution of the present invention. The third party
entity is independent of any of the entities supplying data and is unable to share data
between entities.

As shown in Figure 1, the initial step 1 involves establishing the terms upon which the
entity or entities (hereinafter “pharmaceutical companies”) agree to supply sales
and/or promotional data to the third party entity. The data will normally be supplied to
the third party entity under terms of strict confidentiality. In supplying such data the
pharmaceutical companies are agreeing to allow the sales data to be used in a
manner which will result in its eventual disclosure to their competitors in an
aggregated and de-identified (or masked) format. The process by which such data is
extracted, aggregated and de-identified and subsequently presented to the
pharmaceutical companies will now be described.

Initially, the third party entity will utilise appropriate known software executed on a
computing system to create a database having the required table structure and field
definitions to enable data received from the pharmaceutical companies to be stored
and easily accessible. The software is used to create a set of a predefined data rules
applicable to the tables and fields defined within the database. Accordingly, the
software run by the computing system associated with the third party entity will be
adapted to generate a database adapted to receive actual data from each of the
contributing pharmaceutical companies, rather than survey data from for example, a sample panel of respondents.

Each pharmaceutical company may however have its own set of business rules regarding how data is to be classified into each of these tables. The constituent base tables of the database may be similar for each of the contributing pharmaceutical companies and each table will comprise key elements such as a doctor list (that is, the list of doctors to whom the pharmaceutical company has supplied or wishes to supply pharmaceuticals to), a territory structure and information on sales or promotional activity for each doctor. It should be appreciated that the customers of the pharmaceutical company are ordinarily doctors and so to the term “customers” throughout this specification should be considered as a reference to the customers of the pharmaceutical companies. Furthermore, a territory structure refers to a geographical area which has been assigned to a particular sales representative(s) (working for a pharmaceutical company) for marketing and promoting sales of products manufactured and sold by a specific pharmaceutical company. Therefore, in the data supplied to the third party by each company, each customer has at least an associated territory, a customer identifier, an indication of one or more products which are of interest to that customer, a ranking of importance to the pharmaceutical company and promotional activity data with that customer (such as dates on which calls were made to that customer and the product(s) which were promoted).

Raw data is preferably requested from the pharmaceutical companies by the third party entities and subsequently extracted (indicated as step 2 in Figure 1) from the pharmaceutical companies’ “ETMS”. As noted above, an ETMS may include some form of database adapted to collect territory based sales data.

Such raw sales data may be supplied to the third party entity from each company's ETMS in any number of a variety of data formats. For example, the data may be extracted and supplied in comma delimited flat files (CSV), Microsoft Access
database (mdb) and/or detached SQL server database (mdf) files. The data may be imported into the third party entity database via standard database connectivity and data transformation applications. If the pharmaceutical company's data (which will typically be in the form of data tables) does not follow the format specified by the third party entity then changes may be made to the format of the data to enable flawless and accurate data transfer.

Once data has been received it is then validated by the third party entity. The validation process comprises a series of checks which are performed to ensure data consistency, quality and fitness for its purpose. For example, data received may have missing or incorrectly labelled fields and/or missing or incomplete data tables.

Initial visual data validation checks may be conducted by the third party entity personnel to ensure general accuracy of the data. A variety of automated checks or balances may then or instead be conducted to establish the total number of customers (that is, the doctors) of the pharmaceutical company, the addresses of the customers, the number of territories in which the pharmaceutical company is operational and the number of customer profiles by product (sold by the pharmaceutical company). Other combinatorial checks may also be conducted including (but not limited to) the total number of customers and customer addresses attributable to each territory, the total number of calls within a specific time period (that is, the number of times a sales representative for a specific pharmaceutical company has contacted (such as by phone, e-mail and/or physically visited) a customer in order to market the company's product), the total number of calls made by sales representatives by product, the total number of details by product and/or the total number of calls attributed to each territory.

The results of these counts are preferably appended to a validation result table. The purpose of the validation table(s) is to provide a customer specific reference list against which all data which is extracted in the future can be compared to establish
data confidence level or levels. The validation result table is then compared to a source table which contains details regarding expected counts and suggested acceptable variances for each actual count conducted.

Each actual count is compared against expected or anticipated count values to give a variance. The variance may be signalled if it is outside a permitted or predetermined acceptable variance (such as 5%) to indicate a requirement for investigation to justify the differences or to correct the data.

Accordingly, prior to processing each pharmaceutical company's sales data there must be a predefined and acceptable level of data integrity. In certain instances errors in data may be correctable using a company's own specific rules (which may be configured from stored procedures).

Once the data has been validated it is necessary for it to be refined (shown as step 3 in Figure 1) to ensure its accuracy.

Each pharmaceutical company's sales database(s) is typically being continually updated with new customer details and changes in existing customer's details. Accordingly, each company's database(s) may ordinarily comprise a mixture of current accurate data, out of date data and missing data.

Data duplication may also occur resulting in the same customer having different customer identifiers (such as customer identification number), or a single customer having more than one address. Data may become outdated as a result of customers moving location or changing name. Missing data may arise due to a failure by sales representatives of the specific pharmaceutical company to adequately record customer activity. Accordingly, it is necessary for such erroneous data to be fixed, excluded, or otherwise normalised. Normalisation involves amending data which has been supplied in an incorrect or incompatible format (or data which requires conversion from a non-industry standard data) to industry standard format.
Furthermore, the refining process may be configured to exclude data that does not conform to the specific pharmaceutical company's own set of rules which have been agreed previously with the third party entity.

In order for the third party entity to analyse data provided by the pharmaceutical companies it must build and maintain a join table in order to cross reference each company's individual customer lists against the third party's own master listing of all customers. Although any given industry (such as the pharmaceutical industry) may have providers of syndicated customer lists, the majority of companies will use a particular customer identification schema which is unique to their own organisation.

In this regard the third party entity may utilise a computing system adapted to execute stored procedures (such as a software program in SQL or other query based programming language) that suggests matches between the same customers on different company lists based on field matching combinations derived from the company's own database.

Such a provision will enable all activity to be reported to each pharmaceutical company at a customer level, irrespective of the specific customer identifier given by any one of the participating pharmaceutical companies (and/or their associated ETMS's). However, in alternative embodiments geographic structures (such as address or location) or other key parameters, and not just customer identification, could be used to suggest matches between the same customers on different company lists.

Once a pharmaceutical company's data has been refined it is then translated into a data table or tables (shown as step 4 in Figure 1) such as table 7 in Figure 2.

Accordingly, the refined data is placed in a tabulated format having a common structure, or data structure, which aggregates each company's unique products, calls, structure and segments by dimensions of time, product, segment, location and
activity. Such an aggregation will produce tables of results for each pharmaceutical company based on their own activity with respect to their own customers versus that of their competitors' activity with respect to the first mentioned pharmaceutical company's customers. The tables will enable the third party entity to have data from multiple pharmaceutical companies in a single structure or format but yet create unique results for each individual pharmaceutical company.

Figure 2 shows a graphical representation of an example of such a table 7 configured in accordance with a preferred embodiment of the present invention. Shown in table 7 is a column or field 9 which illustrates a unique identifier named CRMS MatchID which is allocated to each customer of any pharmaceutical company (in the example shown there are three entities or pharmaceutical companies named Companies A–C in column or field 8). Each customer (such as a doctor), of each of the pharmaceutical companies, will typically have a unique identifier which uniquely identifies it to a specific pharmaceutical company. For example, pharmaceutical company “Company A” has allocated CustomerID “AD243GH7” to one of its customers. Similarly, pharmaceutical company “Company B” has allocated CustomerID “1020335” to that same doctor. Accordingly, the third party entity creates a master or source list of identifiers or keys which are adapted to identify identical customers having different CustomerID's in the various source datas. In the example shown, the third party entity has assigned CRMS MatchID “2203042” to the customer (or doctor) independently known as CustomerID “AD243GH7”, “1020335” and “GPOBYT” by the companies A, B and C respectively.

Similarly, each pharmaceutical company will also typically associate with each customer a segment identifier which may be used to classify or rank each customer by value or worth of the customer to the specific pharmaceutical company. For example, a pharmaceutical company's best or most highly valued customers may be known as “Gold” or "High" or "1" category customers whereas a pharmaceutical
company's neutral or low value customers may be known as "Bronze" or "Low" or "3 category customers. In the example shown, (column 10), the customer having CRMS MatchID "2203042" has been placed in a customer segment "Green" by "Company A", customer segment "1" by "Company B" and customer segment "Low" by "Company C". There may not necessarily be any overlap between Company A's "Green" segment and Company B's "1" segment customers and the present invention ensures that "Company A" will never know what segment "Company B" or "Company C" have placed a specific customer in so that the companies cannot determine the importance of their individual customers to their competitor companies.

Each company will define and name their sales territories independently of one another and there is not necessarily any overlap in defining these parameters. For example, the customer having CustomerID "AD243GH7" (and a CRMS MatchID "2203042") has been assigned a territory identifier "203" (as shown in column 11) by Company A. Similarly, that same doctor has been assigned a territory identifier "Tty55" by Company B. Obviously, territory "203" of Company A overlaps in some way with territory "Tty55" of Company B but that is all that can be determined. However, it can be seen that the column immediately to the right of column 11 describes a field labelled "State" which indicates the State of Australia within which the customer is positioned. This physical territorial information may be input directly as part of the raw input data or may be determined by the data refinement process 3.

Call activity by each pharmaceutical company may then be mapped against each customer (shown as columns or fields 12). For example the number of calls made to each specific customer by sales representatives of a pharmaceutical company may be recorded as a rolling or moving annual total, that is, the total number of calls made to each specific customer in the 12 month period preceding the specific reporting date (shown as CallCountMAT in Figure 2), a moving 6 monthly total, that is, the total number of calls made to each specific customer in the 6 month period preceding the
specific reporting date (shown as CallCount 6mo in Figure 2) and/or a moving 3
monthly total, that is, the total number of calls made to each specific customer in the
3 month period preceding the specific reporting date (shown as CallCount Qtr in
Figure 2).

5 Once the tables have been created and clients matched the present invention
preferably utilises a customisable reporting software package to generate a plurality
of reports (shown as step 5 in Figure 1). Such reports may be in the form of physical
(paper) and/or soft copy reports which may be used by personnel to analyse the data
contained in the table(s) (one of which is shown by way of example in Figure 2).

10 It is envisaged that each company will be provided with at least one report which
comprises data sourced from a common data pool contained within the table(s)
generated in accordance with step 4 of Figure 1. However, each individual company
will receive a personalised report which presents the common data in a manner which
is compatible with its own specific predefined definitions and rankings.

15 Figure 3 is a graphical representation of an example report 13 generated in
accordance with the present invention. Such a report 13 shows a particular
pharmaceutical company’s own promotional or calling activity against their own
customers and the promotional or calling activity of their competitors against these
same customers. Such calling activity may be shown at a national, regional or local
level and may also be divided into categories by customer type. For example, if the
customer is a doctor then that broad category of customer may be further divided into
sub-categories including specialists and general practitioners provided that this
information is included in the raw data from companies. The sub-category indicating
the customer type may alternatively or in addition be reported according to a territory
or specific geographical category.
Such call activity may be grouped according to a specific pharmaceutical company's own unique segment and territory definitions. The accumulated call activity for a specific time period according to an aggregation of all companies' call activity can also be shown for these categories. Thus, each pharmaceutical company will see call activity by all competing companies against customers in its own segment, but will not see how other companies have grouped those customers.

In a preferred embodiment the data is analysed to provide key performance parameters such as the proportion of the total calls made by a specific company to their customer population (shown in Figure 3 as “SOV” or Share of Voice and indicated by reference numeral 14), the percentage of a specific pharmaceutical company’s total customer population or segment population that has been called on at least once by themselves and by competitor pharmaceutical companies (shown in Figure 3 as “Call Coverage” and indicated by reference numeral 15), how frequently, on average that the customers that were called on by a pharmaceutical company at least once were actually called on (shown in Figure 3 as “Frequency” and indicated by reference numeral 16) and the proportion of the total calls made by each pharmaceutical company to customers in each specific customer defined segment (shown in Figure 3 as “SOE” or Share of Effort and indicated by reference numeral 17).

These key performance parameters may be repeated in subsequent reports (that is, quarterly, bi-annually or annually) to enable personnel viewing the reports to draw comparisons and observe trends over a period of time.

In addition, a pharmaceutical company's own specific geographical groups may have results presented in a graphical format to enable easier and faster comparison between their performance and that of their competing companies over a time period. That is, although Figure 3 shows a “National” overview of promotional activity, a further report may be generated which is limited to a specific geographical region
(such as the State of New South Wales) and the data may be presented graphically
(such as by bar graph rather than numerically as in Figure 3).

Each report may preferably include a summary of the total calls made by each
company over a plurality of time periods. In addition a report may include a total
5 count of customers which the viewing company (that is, the specific pharmaceutical
company to which the report is directed – “Viewing Company” in Figure 3) knows
about, as well as a count of customers which each of the competing companies
knows about (are represented in their input data). The number of customers which
each of the competing pharmaceutical companies have in their input data which the
viewing pharmaceutical company does not have in their input data may also be
reported to the viewing company. Such parameters may be adapted to draw a
viewer's attention to the fact that there may be customers which the viewing
pharmaceutical company does not know about which its competitors may be directing
a significant portion of their sales effort towards. Similarly, the proportion of each of
15 the competing pharmaceutical companies' total calls made to a specific customer or
group thereof in a customer defined segment (such as “Gold” or “1” or “High”) for a
specified time period may also be indicated. For example, Figure 3 includes annual,
previous six months and previous quarter results so that changes and trends are
easily disclosed.

20 We now discuss by way of example only the relationships and conclusions which may
be derived from the data contained within Figure 3 as a result of the present
invention.

For the following discussion we refer to the time period referred to in Figure 3 as the
Moving Annual Total (which is the 12 month period preceding the date of the report).

25 However, it should be appreciated that similar arguments and analysis can be made
in respect of the time periods characterised as “previous 6 months” and “previous
quarter".
In the “segment” section of the B target group 18 (wherein A target, B target and C target are rankings of customers according to the viewing Company) it can be seen that the viewing company (that is the pharmaceutical company to whom this report is supplied) is directing 27% of its sales effort at this group of customers (see “SOE” column). Such B target customers may be, for example, customers having medium value to the viewing pharmaceutical company. It can be seen that “Competitor 2” is directing 30% of its sales effort to those same customers. The viewing company does however demonstrate that it demands or conducts a greater proportion of the total calls within this specific customer population (SOV = 25.81%). Such a result would suggest or indicate that the viewing company has a greater calling capacity than that of competitor 2 (that is, 27.0% of the viewing company’s calls are equivalent to more calls than 30% of Competitor 2’s calls). From such a result the viewing company may learn to use its greater calling capacity to its advantage, such as by reducing effort directed at lower ranked segments (such as “C Target” (20) and “Other” (21) segments) and increase its effort at the upper ranked segments (such as “A Target” and “B Target”).

Additionally, it can be seen from the report of Figure 3 that the call coverage associated with “Competitor 1” in the viewing company’s “A target” customer group is relatively low (at 55%). However, “Competitor 1” is demonstrating a high calling frequency (5.7) to such customers in the viewing company’s “A target” customer group in comparison to the calling frequencies demonstrated by other pharmaceutical companies (such as the viewing company and competitors 2, 3 and 4) within this segment. This suggests that competitor 1 may have identified at least a subset of these “A target” customers as high value and is actively and accurately directing sales resources and efforts towards them. It may also encourage the viewing company to assess its segmentation methodology to ensure that this particular segment (that is, the “A target” customer group) is not too broad. It may also suggest
that the viewing company should increase its calling frequency to ensure that it retains a high proportion of its total calls to its own high value "A target" customers.

Additionally, it can be seen that the viewing company has made contact with 86% of customers in its "A target" segment on average 4.5 times within the past 12 months.

By comparison, "Competitor 1" has seen 55% of these same customers in this time period. The report shows that 24.42% of the total calls made by "Competitor 1" are to customers in this segment whereas 30.02% of the total calls made by the viewing company are to customers in this segment. This indicates that Competitor 1's calling activity may be more effective than that of the viewing company. Depending on the viewing company's optimum frequency of contact with customers within this segment it may wish to increase its marketing effectiveness by, for example, decreasing its calling coverage whilst keeping total calls for this segment the same. As the total calls will remain the same but the number of customers called will reduce, the frequency of calls will increase.

The results may also show that if the proportion of the total calls made by a specific company to a specific customer segment appears to be increasing over a period of time a conclusion that the company was increasingly viewing this segment as comprising high value customers and was consequently directing increasing proportions of its effort towards them could be reached. Depending on how the viewing company ranked this segment group (such as high value, medium value or low value) it may take such a finding as a warning to increase its own sales effort toward this segment.

Similarly, if the proportion of the total calls made by a specific company to their customer population or a segment was noted as increasing over a period of time, whilst the proportion of the total calls made by that company to a specific customer defined segment appeared to remain constant, a conclusion that the specific company was increasing its calling capacity over the total period for a given
geographic region could be reached. Alternatively, it could be concluded that the total calls by all competitor companies for this geographic region had decreased and that the viewing company's proportion of calls had had a relative increase. The viewing company could take such a finding as a warning that the competitor company is increasingly targeting this specific geographical region and is increasing its total sales effort toward it. In order to protect or even increase the proportion of the total calls made by the viewing company to their customer population the viewing company may elect to increase its own calling capacity for the specific geographic region, or alternatively reduce its sales effort directed at lower ranked customers in order to direct more effort at the higher ranked customers in that geographic region.

The business conclusions and decisions that a viewing company may derive from such a report or reports revolve around that company's ability to target and allocate their sales resources to each of the customer segments that have been identified as being valuable. The effectiveness of such decision making may be enhanced by the ability of a specific company to see the allocation of its competitors' sales resources and activity by way of comparison to their own sales resources and activity, on a customer by customer basis.

Therefore, on detailed review of the report of Figure 3 one could deduce that although the proportion of the total calls made by the viewing company to each specific customer segment (that is, the Share of Effort) is consistent with the percentage of customers in that segment, the calling coverage and frequency indicate a high penetration of the target customer groups. This would generally indicate a targeted approach to sales and marketing of a company's products.

Similarly, a stable result across all periods indicates that little has changed in the targeting, resource allocation and/or sales strategy being applied by the viewing company and its competitors.
Such a report 13 is generated for each competing company and exported to a commonly usable format, such as Acrobat Reader, for presentation back to the pharmaceutical company. This final step is indicated as step 6 in Figure 1.

Accordingly, it should be appreciated from the above description that the results provided are specific to each participating pharmaceutical company and that each report only provides the data from that company's perspective, such as by the company's own defined segments and geographical and/or territorial reporting structure (which will be unique to each participating competitor).

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.
WHAT WE CLAIM IS:

1. A method of analysing data for a first entity having a sales force and/or marketing resource, comprising the steps of:

   i) inputting first data from the first entity, said first data including information on promotional activity related to customers of said first entity, wherein the first data includes a ranking of importance of customers to the first entity;

   ii) inputting second data from a second entity having a sales force and/or marketing resource, said second data including information on promotional activity related to customers of said second entity, wherein said second data includes a ranking of importance of customers to the second entity and wherein a plurality of customers are related in common to the first and second entities;

   iii) comparing said information on promotional activity for the first entity with said information on promotional activity for the second entity on a customer-by-customer basis; and

   iv) outputting a result of said comparison of said information on promotional activity.

2. The method of claim 1 including the step of matching each customer in the first data with that same customer in the second data.

3. The method of claim 2, including creating a master list of the customers of the first and second entities.

4. The method of claim 3 including the step of inputting first and second data into a common data structure.
5. The method of claim 4 wherein said common data structure comprises a join table.

6. The method of claim 4 wherein the data structure includes match references for the same customers of each entity, whereby given customers are capable of being referenced independently of identifiers used by the first or second entities.

7. A method of claim 5 or claim 6 including inputting additional data from one or more additional entities, each having respective sales forces and/or marketing resources, respective said additional data including information on promotional activity related to a plurality of customers of the respective entity wherein the respective additional data includes a ranking of importance of customers of the respective entity and including the step of comparing said information on promotional activity for two or more of the entities on a customer-by-customer basis and the step of outputting a result of said comparison of said information on promotional activity.

8. The method of claim 7, wherein the promotional activity data includes information on the number of contacts made with given customers.

9. The method of claim 8, wherein the promotional activity data includes information on the number of contacts made with given customers in different time periods.

10. The method of claim 9, wherein the result includes the proportion of the total contacts made by the first and any other entity with their customers.

11. The method of claim 10, wherein the result includes the percentage of the customers that have been called on by the first entity and by other entities.

12. The method of claim 11, wherein the result includes the average frequency that customers were called on by the first entity and any other entity in a defined time period.
13. The method of claim 12, wherein the ranking of importance provided to customers by an entity comprises an allocation of given customers of that entity to one of a predetermined number of customer segments, each segment having a different ranking of importance to that entity.

14. The method of claim 13, wherein, the result includes the proportion of the total contacts made with a customer segment of the first entity by each entity.

15. The method of claim 14, wherein, apart from the steps of inputting first data and outputting a result, the method is carried out in isolation of the first entity.

16. The method of claim 15, wherein the customer ranking information within any respective entity’s data is not shared with any other entity.

17. The method of claim 16, wherein the step of outputting includes the step of ordering the result by ranking of importance of customers to the first entity.

18. The method of claim 17, wherein the data input from each entity also includes, for given customers, geographical location information for that customer.

19. The method of claim 18, wherein the step of outputting includes the step of ordering the result by geographic location and then by customer ranking according to the first entity.

20. The method of claim 19, wherein the data input from each entity includes promotional activity for at least one customer in relation to a plurality of different products.

21. The method of claim 19, wherein the step of outputting a result includes the step of ordering the result by product and then by ranking of importance of customers according to the first entity.
22. A set of computer executable instructions for analysing data for a first entity having a sales force and/or marketing resource, comprising the steps of:

i) inputting first data from the first entity, said first data including information on promotional activity related to a plurality of customers of said first entity, wherein the first data includes a ranking of importance of customers to the first entity;

ii) inputting second data from a second entity having a sales force and/or marketing resource, said second data providing information on promotional activity related to each of a plurality of customers of said second entity, wherein said second data includes a ranking of importance of customers to the second entity and wherein a plurality of customers are related in common to the first and second entities;

iii) comparing said information on promotional activity for the first entity with the promotional activity data for the second entity on a customer-by-customer basis; and

iv) outputting a result of said comparison of said information on promotional activity.

23. The set of computer executable instructions of claim 22, including the step of matching each customer in the first data with that same customer in the second data.

24. A computer system for analysing data for a first entity having a sales force and/or marketing resource, said system comprising:

i) means for inputting first data from the first entity, said first data including information on promotional activity to a plurality of customers of said first entity, wherein the first data is includes a ranking of importance to the first entity;
ii) means for inputting second data from a second entity having a sales force and/or marketing resource, said second data providing information on promotional activity related to a plurality of customers of said second entity, wherein said second data includes a ranking of importance of customers to the second entity and wherein at least one customer is related in common to the first and second entities;

iii) means for comparing said information on promotional activity for the first entity with the promotional activity data for the second entity on a customer-by-customer basis; and

iv) means for outputting a result of said comparison of said information on promotional activity.

25. The computer system of claim 24 including means for matching each customer in the first data with that same customer in the second data.

26. The computer system of claim 25 including means for creating a master list of the customers of the first and second entities.
Data Identification

Data Input

Data Refinement

Report tables created

Data to Report format

Results reported back to Company

FIGURE 1 - 1/3

SUBSTITUTE SHEET (Rule 26)
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

Int. Cl. 7: G06F 17/60

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)
G06F 17/60

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

Electronic database consulted during the international search (name of database and, where practicable, search terms used)
DERWENT, USPTO

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>Y</td>
<td>US 5930764 (MELCHIONE et al.) 27 July 1999 column 5 lines 58-62, column 7 line 59 to column 8 line 7, column 15 line 54 to column 16 line 44, column 34 lines 54 to column 35 lines 29, column 39 lines 1 to column 40 lines 15</td>
<td>1-26</td>
</tr>
</tbody>
</table>

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 application or patent but 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: 28 November 2005
Date of mailing of the international search report: 9 Dec 2005

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Form PCT/ISA/210 (second sheet) (January 2004)
INTERNATIONAL SEARCH REPORT

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX