

CHAPTER 5

Stage 1
Problem definition

Stage 2
Research approach developed

Stage 3
Research design developed

Stage 4
Fieldwork or data collection

Stage 5
Data preparation and analysis

Stage 6
Report preparation and presentation

Internal secondary data and the use of databases

Objectives

After reading this chapter, you should be able to:

- 1 describe the nature and purpose of internal sources of secondary data;
- 2 describe how different technological developments have increased the array of internally generated secondary data;
- 3 understand how databases are developing into powerful means to understand consumer behaviour through 'electronic observation';
- 4 understand how databases support traditional forms of marketing research to build up behavioural and attitudinal 'pictures' of target markets;
- 5 understand how geodemographic information systems can help in integrating data sources and in the graphical display of findings in a non-statistical manner;
- 6 describe how the link-up of different databases and survey data can be developed through the use of datawarehouses and be analysed through data mining techniques;
- 7 understand international data capture issues;
- 8 understand the ethical problems of having individual consumer data held on databases.

Different departments have dealings with customers and typically hold data on them. In order to develop an understanding of these customers, it is essential that these data are integrated.



Overview

Marketing research as a function does not support marketing decision-making in isolation. As discussed in Chapter 1, it may be seen as part of a broader marketing information system that supports strategic decision-making. Many information technology advances have been made in recent years that have fundamentally changed the way that marketing decisions are supported. For example, significant developments in database technology have meant that scanning systems in retail stores, loyalty card data, store panel data and survey data can be fused together to present very clear and up-to-date ‘pictures’ of consumers. As well as giving direct support to the marketer, these systems give more focus to marketing research activity and direct support to many stages of research.

This chapter describes how internal secondary data and databases have developed to make major impacts upon how decision-makers are supported. The data collected and analysed through database marketing can be seen as secondary data sources. As with all good secondary data sources, they have a major impact upon the conduct and direction of primary data collection, analyses and interpretation. There are also many ethical issues related to utilising internally generated customer data and the use of databases.

We introduce our discussion with an example of the use of databases. Databases generated within companies or bought in from specialist sources are primarily viewed as a tool to generate direct sales and target promotion activities. However, internally generated customer databases are a secondary data source of value to marketing researchers. Technological developments in the collection, analysis and presentation of data present great opportunities to researchers. There are also potential conflicts with the philosophy of anonymity in marketing research. This example illustrates how a customer database can reveal behavioural characteristics of customers, valuable information to decision-makers in its own right, but for the researcher an excellent foundation to a research design in deciding who to research and what issues to focus upon.

example

Making data go further

In the Netherlands, the use of Geodemographic Information Systems (GIS) is very sophisticated due to the range of data available from official sources such as utilities and the post office. Center Parcs, the chain of holiday villages owned by the brewery Scottish and Newcastle, used a GIS to target potential visitors to its new Dutch centre.

Nicole Kessels, Center Parcs’ direct marketing manager (Netherlands) says: ‘a segmentation system linked to our own database gives us a valuable insight into who our customers are, how they behave and where we can find potential new customers.’ ■

Internal secondary data

Chapter 4 described the nature, purpose and value of secondary data to marketing researchers. A vital source of secondary data comes from within organisations that commission marketing research, namely internal secondary data. These data are generally seen as being ‘operational data’, i.e. data that represent the daily activities and transactions of a business. Daily transactions may be held in different departments such as sales, accounts or human resources and stored in different manners. The use of operational data has presented opportunities to researchers for as long as businesses have been recording their daily transactions. Even in the days of transactions being recorded manually, it has been a task for marketing researchers to track down different sources of data and analyse them. Locating and analysing internal sources of

secondary data should be the starting point in any marketing research project. The main reasons are that, as these data have already been collected, there are no additional data collection costs, there should be no access problems (though individual managers may make access difficult for personal or political reasons) and the quality of the data should be easier to establish (in comparison with externally generated data).

Most organisations have a wealth of in-house information even if they are not marketing or customer focused, so some data may be readily available. For example, imagine a timber merchant that sells wood to builders and cabinetmakers. It creates invoices for all its sales. Its accounts department handles this process and maintains the data that it generates. Yet, there exists much consumer behaviour data in these invoices. They could be analysed by:

- What products customers buy
- Which customers buy the most products
- Which customers repeat purchases
- Which customers appear only when there are special offers
- Where these customers are located
- How these customers pay – by cash or credit
- Which customers are the most profitable
- Seasonal patterns of purchasing behaviour by product types and customer types.

There may also be data that relate to promotions activities such as spending on advertising, trade fairs, sponsorship deals or personal selling. The researcher could look for details of spending in these areas and seek correlations with any of the analyses of customer behaviour. The task facing the marketing researcher is to search for such data, conduct analyses and present these to decision-makers to interpret. Such a process may focus the thoughts of decision-makers, by realising the potential that lies in these data. With this focus, other types of **operational data** and their value may be realised, managers in other parts of the organisation may release data that they guarded, and connections to sources of intelligence may be generated. Here lies the basis of generating clearly focused primary data collection, and effective marketing research.

More marketing decision-makers have realised the benefits of analysing customer data. This realisation and technological developments in collecting, analysing and presenting customer data have given birth to a concept known as Customer Relationship Management (CRM). The main challenge of implementing CRM is to integrate customer data from the post, telephone, personal visits and the Internet into a central data pool so that it holds all transactions and contacts with each customer allied with the ability to update the data constantly and to access it immediately whenever necessary.¹ An illustration of the use and effect of CRM is presented in the following example.

Operational data

Data generated about an organisation's customers, through day-to-day transactions.

example

Getting to know clients lifts profits²

The principles of CRM are simple. Businesses gather accurate information about customers and prospects. Having identified the customers or segments that account for the highest profits, they devise marketing strategies that differentiate between different groups. Greater resources are focused on higher value customers. Every opportunity is used to amass additional information about each client to personalise sales messages and build a closer relationship.

When Mercury Asset Management began to experiment with CRM, they were able to demonstrate that 59% of their profits came from 1% of their customers. Over six months they moved from having a standard type of literature for all their customers and prospects to no fewer than 7,700 types of literature. Digital printing made this personalisation relatively simple. The first stage of this personalisation process was the compilation of comprehensive information about customers. ■

Customer database

A database that details characteristics of customers and prospects that can include names and addresses, geographic, demographic and buying behaviour data.

Many companies see the benefits of compiling comprehensive information about their customers and invest great amounts in developing and maintaining a **customer database**. The customer database for many companies is used to drive all marketing strategies. Customer data can be created by companies from past records, promotional devices such as competitions or direct response advertising. The database is used to stimulate marketing activities, and the response from these activities is fed back to improve and update it. Database marketing is a circular activity where every iteration improves the total value of the database.³ So, when consumers 'hook up' to an online company, through their PC, their TV or even their mobile phone, they help to develop the customer database. They supply personal details, their choice of products or services and their means of payment. From the knowledge gained from these transactions, new targeted offerings can be formulated, and the nature of the customers' response can be recorded. As the decision-maker learns more about their customers from transaction data, their awareness of gaps in their knowledge becomes more focused. Where those gaps cannot be filled with transaction data, the marketing researcher plays a vital role in the generation and interpretation of bespoke primary data. In the development of good research design, the customer database can be seen as a resource to the marketing researcher when conducting internal secondary data searches.

There is a whole array of different means to electronically capture customer transaction behaviour and even potential customers through their search for information to buy services and products. It is beyond the scope of this text to describe the array of CRM technologies, Internet trading and online business. We therefore will just concentrate on a concept introduced in the last chapter, concerning scanned data. From a basis of scanned data we illustrate how other data sources, including primary data from marketing research studies, can be integrated. This serves as a link to examine how decision-makers and researchers make sense of the masses of customer data that may be collected.

Scanning devices

Scanning device

Technology that reads the UPC code from merchandise by passing it over a laser scanner.

One of the most fundamental technological breakthroughs that has allowed the monitoring of product sales has been the bar code. With **scanning devices** to read bar codes has come the ability to quickly count and analyse sales. If a new product is launched, scanning data can monitor sales on a daily basis, breaking down the sales by advertising region and the type of outlet. The scanning device is an electronic means of observation. Consumers do not answer any questions, do not identify themselves; they merely enjoy the benefits of supermarket queues moving far more quickly compared with the days of checkout assistants manually entering the prices for individual goods in their baskets.

What product bar codes and scanning devices do not do is classify consumers. Classification is fundamental to marketing research techniques and ultimately marketing segmentation techniques. Is the new brand of yoghurt more popular with younger age groups compared with older groups? Have more Calvin Klein shirts been sold to male or female buyers? The following example illustrates a company that realised this limitation of not being able to classify consumers.

example

Know the clients, meet their needs⁴

Japanese convenience store chain 7-Eleven boosted its sales dramatically by following one very simple rule. Shop assistants were instructed to log two pieces of information at the point of sale: the purchasers' gender and their approximate age. Armed with this information, store managers changed their displays and were able to turn over stock several times a day. ■

In the above example, 7-Eleven developed a crude means of linking patterns of sales to consumer types which improved decision-making and achieved better results. The next technological development develops the link from scanned purchasing data to characteristics of consumers. Compared with the 7-Eleven example, it allows a far more sophisticated means of understanding the characteristics of consumers and of linking their characteristics to their purchasing behaviour.

Relating customer data to scanning systems

example

GlobalCash Project

Loyal customers in the bank

In pan-European banks are many divisions that cover the spectrum from small domestic accounts through to large corporate accounts. In opening any account, banks ask many questions to allow their operations and transactions to work smoothly, to assess the creditworthiness of customers and to assess whether there are other services they could offer them. These questions may be asked on Websites, on the telephone or on a face-to-face basis.

Over time, a bank can build up a series of transaction records against a customer record. From this record, for example, banks can see who are their most profitable customers, who buys a range of connected services and who has been the most loyal over the years, to name but a few analyses.

They may find that certain customers have been banking with them for years, loyally saving a tiny sum paid over the counter each week. Such customers may cost a bank more to service than they can make on interest in the sum invested. A bank may look to means of making the transaction costs cheaper, offer other services that may increase profits, or even charge customers a fee to pay in savings over the counter! ■

The essence of the GlobalCash example is that the operational data used to open and service accounts links customer identification to product usage. Any promotional offers, competitive activity, new product offerings, telephone banking services or discounts, to name but a few marketing activities, can be analysed and related to classifications of customer. Banks and financial institutions are in the fortunate position of being able to ask many questions of potential customers before doing business with them. Such questions are primarily posed for security reasons but they also reveal much about customer characteristics. Every transaction or even enquiry can be linked to an individual customer. This allows banks and financial institutions the ability to analyse in great depth the relationships between types of customer and the patterns of their behaviour. Other types of business see this potential but do not have the power to identify the characteristics of each customer related to each transaction. The answer for many businesses has been to use loyalty card schemes.

The **loyalty card** is the device that supermarkets, pharmacists, department stores, petrol stations and even whole shopping centres and towns have developed in order to link customer characteristics to actual product purchases.

The loyalty card may be offered to customers as they make a purchase in a store. They normally complete an application form which may include their name and address, demographic details, household details, media usage, and even some lifestyle characteristics. Once the customer uses their loyalty card, the products they have purchased are scanned and a link can be made through the 'swiped' card to their characteristics that can then be related to the scanned data of their product purchases. In return, the customer earns 'points' for their total spend and may earn additional points for buying particular products. The points gained may be redeemed for cash, additional purchases or even goods and services in other retailers or restaurants.

Loyalty card

At face value, a sales promotion device used by supermarkets, pharmacists, department stores, petrol stations and even whole shopping centres and towns to encourage repeat purchases. For the marketing researcher, the loyalty card is a device that can link customer characteristics to actual product purchases.

From the marketing decision-makers' perspective, many benefits accrue from a loyalty card and product scanning system. The following list summarises the benefits to the marketer.

- 1 *Profiles of customers can be built up.* The types of individual that are being attracted to a store can be monitored. The returns and contributions made by particular types of customer can be measured. Profiles of the 'ideal' customer type can be built up, and plans developed to attract that type of customer.
- 2 *Products used and not used.* The types of product that are being bought or not bought can be monitored. From the customer profile, other types of product can be added to the range offered. Cross-selling of related products can be undertaken. Linked to the customer profile, actual customer behaviour can be understood more fully.
- 3 *Communications that have worked and not worked.* Merchandising displays, money-off coupons, three for the price of two, or a clip-out coupon from a local newspaper, for example, can be linked to individuals and products. The effectiveness of particular types of communication for particular types of consumer can be developed. Reassurance that the customer has made the right decision can be given where the size of purchase warrants it.
- 4 *Distribution methods can be tailored.* Certain customer types may prefer the convenience of a small store that they visit more than once a week for small purchases of 'staple' goods. Other customer types may shop once a month for the total household. Retailers can have different shop formats for different customers, may develop home delivery programmes or even develop Internet shopping systems.

The above four factors interact to allow marketing decision-makers to redefine their market(s) and the offerings they make to those markets. The iteration of target market definition and marketing mix tailored to those markets is at the heart of strategic marketing.

From the marketing researchers' perspective, many benefits also accrue from a loyalty card and product scanning system. The following list summarises the benefits to the marketing researcher:

- 1 *One big laboratory.* Experimental methods will be described in Chapter 11 but, in essence, the monitoring of customers, markets and interrelated marketing mix activities allows for many causal inferences to be established. For example, what is the effect, and upon whom, of raising the price of Häagen Dazs ice cream by 10%? What is the effect of inserting a cut-out coupon to give a discount on after-sun lotion, placed in *Cosmopolitan* magazine?
- 2 *Refining the marketing process.* With time series of responses to planned marketing activities, statistical models of consumer response can be built with associated probabilities of a particular outcome. Likewise, models of the consumer over their lifetime can be built. Again, statistical models can be built with associated probabilities of particular types of product being bought at different stages of a consumer's life.
- 3 *Developing a clear understanding of 'gaps' in the knowledge of consumers.* The scanner and loyalty card electronically observes behaviour but does not encapsulate attitudinal data. The nature and levels of satisfaction, what is perceived as good quality service, or what brand image is associated with a particular brand of vodka, are examples of attitudinal data. The use of the database helps to identify target populations to measure and the attitudinal data that need to be collected. In all there can be a much greater clarity in the nature of primary marketing research that tackles attitudinal issues.
- 4 *Linking behavioural and attitudinal data.* If attitudinal data are elicited from consumers, the data gathered can be analysed in its own right. It is possible, however,

to link the gathered data back to the behavioural data in the database. The term of ‘fusing’ the data from different sources is used. The key to the fusing lies in identifying individual respondents so that one large dataset is built up. The notion of fusing together databases and survey data from different sources is at the heart of building a strong understanding of consumers.

The above benefits show why many marketers and marketing researchers welcome the power of building an iterative customer database, through scanned product purchases and knowledge of customers who make those purchases. There are drawbacks, however, that focus on the nature of the ‘loyalty card’. Loyalty card schemes may be viewed more as a sales promotion technique in much the same manner as giving trading stamps, a dividend or coupons to be redeemed after a period of saving rather than as a means to capture customer data. Compared with other sales promotion techniques, the loyalty card incurs huge operating costs.

There are few questions about the huge costs involved in developing and administering loyalty card schemes. For many retailers, however, the investment allows many marketing and marketing research benefits to be realised. It is only when viewed in the light of offering strategic decision-making power and a complement to an integrated marketing information system that such an investment makes sense. One means of integrating scanned data, with knowledge of customers, and of presenting the relationships and analyses in a spatial manner is through the use of geodemographic information systems.

Geodemographic data

One of the main elements of database power illustrated in the preceding section is the linking of different data sources from both scanner data and customer databases. The ability to create those links and to graphically display analyses has been achieved with the development of **geodemographic information systems** (GIS). At a base level, a GIS matches geographic information with demographic information, allowing analyses to be presented on **thematic maps**. This base can be built upon with data from customer databases, databases from other sources, and surveys. The combined data again can be presented on maps and in conventional statistical tables.

The geographic dimension is vital as a base to the system. Growing up and living in different geographical locations has an effect upon what we buy and the nature of our lifestyle. Look at the huge diversity of consumers around Europe! It is easy to see differences in consumers and their spending habits, between countries and regions within countries, between cities and towns and areas within a town, and even between different sides of a street. These differences emerge from a variety of factors. The following list summarises the main factors, using extreme examples in places. With closer analysis, more subtle differences can be seen which will be illustrated later in this chapter.

- 1 *Physical geography and climate.* Consumers living in hot Mediterranean climates in villages close to the sea may have many different needs and wants compared with consumers in Scandinavian inner cities.
- 2 *Economic history, working opportunities.* Consumers who are primarily semi-skilled, working in a declining manufacturing sector, may have many different needs, wants and spending priorities compared with those in a region that attracts recent graduates to work in a burgeoning financial services sector.
- 3 *Political and legal differences.* Locations with a history of political and legal domination can affect the types of property and subsequently the types of people who

Geodemographic information system (GIS)

At a base level, a GIS matches geographic information with demographic information. This match allows subsequent data analyses to be presented on maps.

Thematic maps

Maps that solve marketing problems. They combine geography with demographic information and a company's sales data or other proprietary information and are generated by a computer.

live there. The differences may be national, e.g. with policies that encourage state ownership of property, or tax breaks and discounts so that a rented property may be bought by its tenant. The differences may be regional, e.g. a local council may have structural plans to allow the building of new housing estates for families, on green-field sites on the outskirts of cities.

- 4 *Demographic make-up.* Regions made up of consumers living in predominantly retirement areas, such as seaside towns, will have many different requirements from regions that are heavily populated with single young people.
- 5 *Infrastructure links.* Infrastructure can include the means of travelling around an area as well as the nature and quality of leisure, sports and shopping facilities. Areas with different levels and quality of infrastructure attract different types of consumer. Families with two cars who can comfortably drive to facilities have different needs and wants when compared with individuals living alone who own a bicycle but not a car.
- 6 *Property types.* In different locations particular styles of property may dominate: flats rather than houses, multi-storey rather than low-rise, detached rather than terraced, bungalow rather than house. The type, size, quality and costs of property within an area attract different types of consumer.

Thus, differences can be seen between geographic locations that affect the lifestyle of residents, the array of products and services they buy, their ability to buy different types of products and services, and their hopes, fears and aspirations. The founding premise of a geodemographic information system is that the type of property a consumer lives in says much about their lifestyle and consumption patterns. Property type also encapsulates the other five factors that discriminate between consumers living in different geographic regions. For example, consumers living in small one-bedroom flats over shops in a city centre will tend to have very different lifestyles and consumption patterns from those of consumers living in large detached rural properties. Consumers in different property types have different propensities or probabilities of buying particular goods and services and of undertaking activities that make up their lifestyle. They also have different propensities to use and be exposed to different types of media.

From a marketing decision-making perspective, geography also plays a vital role. Knowing where one's consumers are located affects the means and costs of distribution. For example, should a retail outlet be built to gain the most returns? Which customers will have to pass our competitors in order to get to us? What features and facilities should the outlet have? The location of consumers also affects the means to communicate with them. Are consumers dispersed over a wide area or tightly clustered together? Do they read the same type of newspaper or magazine? Do they watch the same television programmes or films at the cinema?

A map therefore forms the foundation of a geodemographic information system – a map that can identify all properties in a country, all roads, shopping centres and major facilities in towns and cities. On top of a base map can be laid a range of statistical measures. They typically originate from a number of sources and have the common feature of being able to relate to a specific postcode or zip code. An example of such a system is one produced by Experian. They have developed systems for Australia, Belgium, Germany, Great Britain, Hong Kong, Ireland, Japan, New Zealand, Norway, South Africa, Spain, Sweden and the USA (see www.experian.com). Obviously the sources and details of data available in each of the above countries differ, as does the legislation that determines what can be stored and analysed on databases. Typically for each country, statistics can be gathered and used to develop individual geodemographic information systems based upon census data, postal address files, electoral registers, consumer credit data, directories of company directors, mail order purchase records, car registrations and data on access to retail outlets.

Geodemographic classification

This groups consumers together based on the types of neighbourhood in which they live. If a set of neighbourhoods are similar across a wide range of demographic measures, they may also offer similar potential across most products, brands, services and media.

From the data collected, the purpose is to classify consumers on a geodemographic basis. Experian define a **geodemographic classification** as follows:

Geodemographic classification groups consumers together based on the types of neighbourhood in which they live. If a set of neighbourhoods are similar across a wide range of demographic measures, they will also offer similar potential across most products, brands, services and media.

With the variables chosen for a particular country, i.e. the types of data that are available to build a geodemographic information system, cluster analyses are performed (Chapter 23 details the nature and purpose of cluster analysis). These analyses help to create consumer classifications, based upon the types of property they live in and the propensity of consumers to have certain lifestyles and behave in particular manners. The analyses ensure that each of the descriptions used is reasonably homogeneous in terms of demographic measurements and consumer behaviour. As well as being able to discriminate and describe distinctive groups of consumers, the analyses have to produce ‘pictures’ of consumers that are meaningful to marketing decision-makers. For Sweden, the resulting analyses have produced a classification of 10 main consumer types. Table 5.1 lists these types and the percentages of each type in the population. Each individual type can be further classified, Sweden having a total of 30 groups. For example, *Elite families* at 7% of the population can be further broken down into *Careerists in terraced houses* at 2.1% of the population, *Elite professionals* at 2.2% and *White collar metropolitan* at 2.6%.

Table 5.1 Experian classification of the Swedish population

Classification descriptor	% in Swedish population
Elite families	7.0
Middle income industrial	8.9
Low-middle income in flats	13.2
Well educated in metropolitan areas	13.7
Younger low income	5.5
Pensioners	8.7
Families with high incomes	3.8
High income in villas	4.9
Middle-aged families	10.7
Countryside	23.6

With a geodemographic information system, it is possible to pinpoint where the *Careerists in terraced houses* are located throughout Sweden, whether they are clustered in particular regions or cities, or whether they are dispersed. From such classifications and the data that can be added from other databases, models of consumer behaviour can be developed. The following example illustrates how Experian have developed a model to calculate the potential for retail outlets.

example

Site quality indicators⁵

Experian Goad has launched a system which shows the sort of power that geodemographic information systems can give to client companies, especially in the retail sector. Called Site Quality Indicators, it uses the accuracy of retail location maps to demonstrate the potential an outlet could have. This can be analysed by proximity to anchor stores, such as Marks & Spencer, how many minutes it is away from a car park, or by a variety of other variables. The model can be used to identify existing stores which are performing well or badly and then locations with a similar profile, or to identify why particular profiles are the way they are. The

system pulls in a lot of datasets, from the geographical to the customer specific. From this, models can be built for the particular retailer, which reflect the baselines within their own business. But that means users have to have data on their customers already, and they must be able to manipulate it in order to build their own Site Quality Indicators. ■

The above example also illustrates that the main power of the system comes from being able to add a customer database to the Experian database; this makes the 'picture' of consumers even clearer. Customers can be mapped out to see how far they live from a retail outlet or to see whether they pass a competitor's store to reach a retail outlet. The profile of customers that a company has can be compared with national, regional or city profiles. Data that are captured on customer databases can be mapped out. For example, the ABN AMRO bank can map out which customers have responded to an offer to take out a personal loan at a discounted rate, as well as building up a profile of those who respond. The following example illustrates how Experian's data are merged with customer databases.

example

Micromarketer goes Dutch

The Dutch Air Miles franchise LMN, whose shareholders include Shell and ABN AMRO bank, use Experian's Micromarketer product to segment existing customers. It has built a database of 2.3 million customers and segments them geodemographically in order to facilitate targeted mailings. LMN's customer data are supplemented by Experian's data before segmentation. Gerard Zandbergen, Mosaic Micromarketer manager of Experian Netherlands, says 'Data comes from several sources. One is the postal service. We also use market research bureaus and lists of private car owners.' Customers are segmented and the data fed into the GIS to provide a geographical element. Offers for visits to local theme parks and vouchers for local stores therefore go to people in specific regions. ■

In addition to customer behaviour being added to the geodemographic system, survey data can also be added. The key that would link the survey to the customer database may be either a named customer or a postcode. An example of the use of survey data may be in car retailing. A car retailer can map out who bought a new car from them. They may be able to profile and map out the types of individual who bought different types of car. The retailer may then profile and map out the buyers who return for servicing or to buy petrol or accessories. The manufacturer of the car sold and the retailer may conduct a satisfaction survey related to characteristics of the car and the service they received. The results of the survey can be analysed by the different Experian types and characteristics, and levels of customer satisfaction can be mapped out. Additional purchases of cars related to satisfaction or customer loyalty can be captured. It can be seen from the above that through the use of a geodemographic information system, profiles of target markets, measures of the success of marketing decisions and the means to model consumer behaviour can all be achieved.

Graphical representations can be made of customer behaviour, their attitudes and their levels of satisfaction. Using these data, the car retailer additionally has the potential to measure the propensity of potential customers in new locations to buy particular types of cars, petrol, accessories and so on.

Linking different types of data

The previous example illustrated how different types of data can be merged and mapped out to represent customer characteristics. One of the main applications of collecting customer data from different sources and linking it together would be to perform segmentation analyses. Examining the means by which target markets can be

segmented, it is clear to see that the five methods as illustrated in Figure 5.1 can be individually utilised or combined to build clearer ‘pictures’ or profiles of target consumers.

Figure 5.1 gives examples of where data may be obtained from, to help build up profiles of customers and markets. In the example of ‘psychographics’ or lifestyle measurements, data may be generated from electronic point of sale (EPOS) systems or surveys. In the case of the EPOS collection, the purchasing of particular types of products can indicate characteristics of a lifestyle. In a more direct manner, questions in a survey can help to build a profile of lifestyle behaviour. In its own right, ‘lifestyle’ can be a valid means of segmenting a market, perhaps positioning products and services to consumers who aspire to a particular lifestyle. However, being able to combine demographic measurements, broader behavioural characteristics and a knowledge of where these consumers live helps to build a ‘picture’ of consumers that facilitates strong marketing decision-making support.

Figure 5.1 indicates that as one moves from the demographic through to psychological characteristics the measurement process becomes more difficult. Putting aside the differences in techniques to capture ‘demography’, ‘behaviour’ or ‘psychology’, *what* is being captured becomes more difficult as one moves towards psychological variables. If one considers psychological variables that are vital to marketing which could be captured, examples such as satisfaction, loyalty, trust and quality are not as easy to capture as questions such as gender, age or where one lives. Chapter 12 will explore the concept of measurement in more depth, but at this stage consider what ‘satisfaction’ actually means, and then the problems of measuring that concept in a valid and consistent manner.

Conversely, as the measurements become more difficult to conduct, they add more to the ‘picture’ of consumer and market profiles. To say that a market is primarily female, aged between 25 and 40 and lives in a detached property with a mortgage, starts to build a ‘picture’ of target consumers. To add details of their media behaviour, the array of products and services they buy, characteristics of their lifestyle and their expectations helps to build up a rich and, for decision-makers, very useful ‘picture’ of target consumers.

Examining the variety of data sources that can be used in the interrelated variables that build market profiles, it is clear to see a role for traditional survey work, scanned data, customer data, externally generated secondary data and the use of loyalty cards. There is a clear interdependence among the different data sources with the increased sophistication of decision support systems that allow the ‘fusing’ of the data to be conducted.⁶

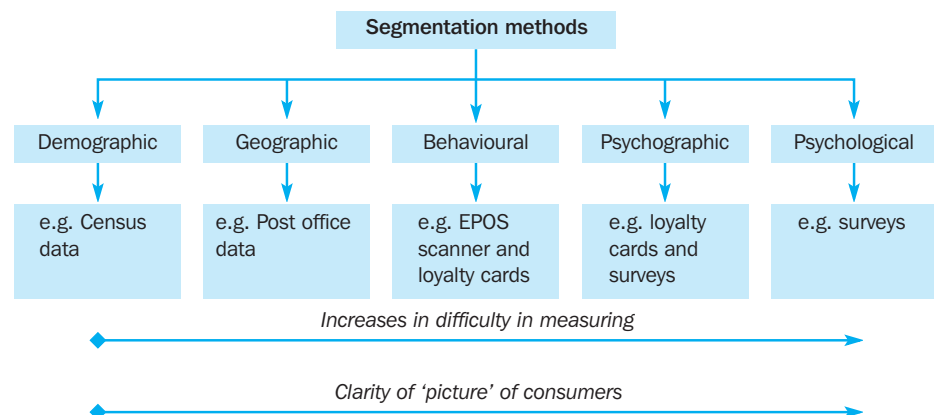


Figure 5.1
Methods of segmenting markets

Stages of development in using databases and survey data to build profiles of consumers and model marketing decisions

The last section discussed how different data could be combined to build strong ‘pictures’ of consumers. Reflecting upon the role of the marketing researcher in supporting the marketing decision-maker as detailed in Chapter 1, it is clear that the combination of survey data and databases plays a major role in fulfilling the following, helping to:

- describe the nature and scope of customer groups;
- understand the nature of forces that shape the needs of customer groups and the marketer’s ability to satisfy those groups;
- test individual and interactive controllable marketing variables;
- monitor and reflect upon past successes and failures in marketing decisions.

The actual implementation of the decision support systems that allow the combination of data sources to be used in supporting decision-makers can take a great deal of time, expense and organisational learning. It is not the intention here to go through the planning, training and organisational issues in making the systems work, but to broadly summarise the stages that an organisation may go through in combining survey and database data. Figure 5.2 summarises the stages of integration; the following descriptions develop the summarised stages in more detail.

- 1 *Analyse existing consumer database.* These data could include the daily operational transactions or enquiries made to a company. As an internal secondary data source it is the cheapest and most readily available data – providing the organisation culture allows access and analysis to marketing researchers.
- 2 *Use supplied geodemographic profiles.* There are a growing number of geodemographic systems vendors who have been in operation for over 20 years (as well as the Experian system on www.experian.com, have a look at www.caci.co.uk). In this time they have been able to refine the data they collect and the analyses they produce to build consumer profiles. Companies can buy a base system ‘off the shelf’ from systems vendors, and add a variety of different databases.
- 3 *Combine existing consumer data with geodemographic profiles.* Using the mapping functions of the geodemographic system, existing customer data can be analysed using the profiles supplied with the system. Maps can be used to illustrate the catchment and types of customer and then to evaluate potential in new locations.
- 4 *Use other surveys (either own or from external sources) that build on geodemographic sources and customer database.* Surveys conducted by a company where either a customer identification or postcode are recorded can be added. Survey data can be analysed using the geographic profiles and analyses represented using maps.
- 5 *Use combined data sources to create own profiles of customers.* Companies gain experience from using the geodemographic profiles and adding their own data. Over a period of time they may see that the generalised definitions of consumers from the geodemographic system do not accurately represent their existing and target customers. With the benefit and use of their own data, they may take the raw data from the geodemographics vendor and produce their own classifications.
- 6 *Use of the datawarehouse.* Essentially, this is using many database sources to build one huge database that may be accessed, allowing data to be fused and analysed. This would be done to suit particular reporting requirements or specific queries from either marketing research or marketing managers. With the growth and significance of this development in decision support, the next section describes the datawarehouse in more detail.

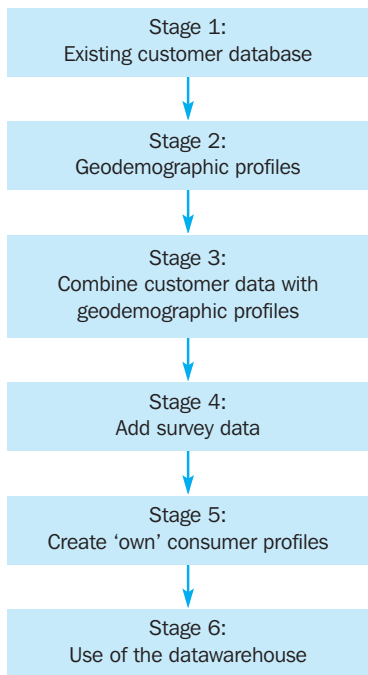


Figure 5.2
Stages of development in using databases and survey data to build profiles of consumers and model marketing decisions

Datawarehouse

This may be seen as a 'super-database', but more specifically it may be defined as a process of gathering disparate data from database and survey sources, and converting it into a consistent format that can aid business decision-making.

The datawarehouse

One of the most prolific users and innovators in **datawarehouses** is the banking industry. The following example illustrates the problems and opportunities for the banking industry of having many different departments with quite distinctive databases.

example

You say 'warehouse', I say 'database' . . .⁷

Three major changes are sweeping through bank marketing: banks are becoming even more customer driven, they are becoming increasingly information rich, and they are now dependent on constantly evolving computer technologies.

Being more customer driven results in a breaking down of the previously hermetically sealed functional areas of banking. Synergistic marketing and sales is now the name of the game. But as these invisible walls come tumbling down, banks are confronting the unintended result of departments with unique informational needs and personal computers: databases of highly valuable information that have no connection with each other. It is as if the tide has gone out, leaving tidal pools teeming with rich data separate from one another along a beach. In this case, the whole of the data really is greater than the sum of its parts. These pools of customer data are not just valuable in and of themselves. The greatest value is in the across-the-board juxtaposition of all the data pools with one another. That's where the confusing conceptual model of a datawarehouse comes in. 'Datawarehousing', then, is simply about the creation of a super-database. ■

The datawarehouse may be seen as a 'super-database', but more specifically it may be defined thus:⁸

A datawarehouse is as much a process of gathering disparate data, converting it into a consistent format that can aid business decision-making, as it is a configuration of software and hardware. Datawarehouses empower users by providing them with access to a whole array of information in an organisation, making it available for use in other applications.

From this definition, the datawarehouse can be described as having the following three qualities:

- 1 It is a collection of integrated databases designed to support managerial decision-making and problem solving.
- 2 It essentially becomes a giant database that can include survey data held in a database format.
- 3 It physically separates an organisation's operational data systems from its decision support systems.

At its most fundamental level, the datawarehouse has three components.

- 1 *Acquisition*. This includes all the programs, applications and various interfaces that extract data from existing databases. It continues with preparing the data and exporting it to the datawarehouse.
- 2 *Storage*. This is synonymous with any database. It simply involves a storage area to hold a vast amount of data from a variety of sources. The storage area is organised to make it easy to find and use the data. It will be updated from a variety of sources which could be through scanner and loyalty card data on customers, or through the use of intranet data as described in Chapter 4 when examining the compilation of competitor data.
- 3 *Access*. This encompasses both set reporting of predetermined events and the means of performing individual analyses, querying 'what-if' scenarios. The process of exploring the databases uses **data mining** techniques. As marketing researchers and decision-makers learn about markets and their effects upon those markets, the development of predictive models is facilitated.

Data mining

The process of discovering meaningful correlations, patterns and trends by sifting through large amounts of data stored in repositories, using pattern recognition as well as statistical and mathematical techniques.

Data mining

Data mining is a process of discovering meaningful correlations, patterns and trends by sifting through large amounts of data stored in repositories. The process uses pattern recognition as well as statistical and mathematical techniques.⁹ Data mining should not be confused with datawarehousing. The datawarehouse could be termed a 'repository' or a place where large amounts of sometimes disparate sources of data are stored; data mining is a process that depends upon access to the data held in that repository.

Examples of what data mining aims to do are as follows.

- Classify customers into specific categories that are meaningful to decision-makers
- Identify potential target markets that possess the characteristics that decision-makers seek
- Forecast sales or the use of services
- Discover which types of products or services are purchased together
- Discover patterns and trends over time, such as 'after graduation, students take a holiday', and be able to show the probabilities associated with different holiday types.

Data mining is a way of exploiting the data held by organisations to help discover and develop specific information or knowledge. As well as using proprietary software to perform pattern recognition, statistical and mathematical techniques, it can also be seen as a mental process undertaken by decision-makers. The decision-makers who interact with large datasets using data mining are generally not specialists in statistics, data analysis, datawarehousing and other data tools; they are information users, seeking support for their decision-making processes. With the aid of data mining

software, the decision-maker is encouraged to think in new ways and ask new questions. The decision-maker discovers more from the data and explores in new areas, integrating other sources of data, going through iterative processes to dig deeper. The exploration process involves the discovery of non-trivial relationships of dependence or associations, non-trivial clusters, factors or trends and an understanding of the managerial significance of these discoveries. A data mining process must be ‘user-oriented’ and that user is typically the decision-maker. The following examples illustrate the processes described above by showing how data mining has been used to explore supermarket shopping and catalogue shopping behaviour.

example

How the data mountain became a mountain of information¹⁰

Data visualisation is a data mining technique. As an example, a large tracking database covering the entire grocery purchasing of over 7,000 households on a daily basis for a year was searched for common links. Links were presented visually in what can be best described as a sort of ‘spirograph’ picture. As the data levels were drilled through, the links became more and more specific.

The process started with a ‘blank sheet of paper’ and quickly identified a strong link between a Sainsbury main shopper and a Tesco shopper. It quickly moved on to discover that these shoppers were strongly linked with grocery purchasing within Tesco and from there cereals were highlighted, then ready-to-eat cereals, then key branded staple lines (Cornflakes, Weetabix, Rice Krispies). The branded staple lines were discovered to be primary drivers for these shoppers.

Used in this way, data visualisation did not answer all their questions but, maybe more importantly, it ensured the right questions could be asked in subsequent studies. What was it about Tesco’s branded cereals offering that attracted Sainsbury shoppers? What else were they buying on these trips? How can these shoppers be targeted to bring them back to Sainsbury? ■

example

Data mining at GUS¹¹

Great Universal Stores (GUS), Britain’s second largest general retailer, mails 14 million fashion catalogues per year and delivers about 395,000 orders daily to customers in the British Isles and Europe. Like other retailers, GUS knows that success depends on ordering the right items in the right quantities at the right time. If customers want items not in stock, they go elsewhere and the company quickly loses money and market share. To gather forecast demand data, GUS mails preview catalogues to 60,000 customers three months before each season begins, with these customers receiving a discount over a two-week period. Analysts use the resulting data to forecast the final demand for each catalogue item. For many years, GUS generated forecasts using multiple regression analyses and mainframe software. These estimates often proved to be too conservative, which resulted in shortages of popular items and unhappy customers.

To overcome this problem, GUS employed Clementine, SPSS’s data mining software, that allowed them to perform more rapid and visual modelling of demand. According to Mathew Biddle, a Senior Project Analyst at GUS, ‘On the mainframe, we had no graphical way of seeing patterns and trends. Clementine enabled us to explore new variables and quickly build new models. In the process, we generated further ideas.’

The analysis performed using Clementine was repeated and developed for several seasons, and comparisons were made to the existing multiple regression analyses on the mainframe. The data mining software produced superior forecasts, achieving a 20% improvement in assigning each forecast to a right risk level. The result of using data mining techniques has meant that popular items are more likely to be in stock, so customers are satisfied with GUS’s service and less vulnerable to appeals from their competitors. ■

Further cases of data mining analytical techniques can be seen on www.spss.com/spssatwork/. (Look out for the Clementine software.)

Databases and marketing research

There has been a phenomenal growth in the use of databases to support marketing decision-making. In larger organisations with many divisions or where mergers and acquisitions have taken place, the datawarehouse has facilitated the ‘fusing’ of data from many sources. Such developments are seen as a threat by many in the marketing research industry. However, many marketing research companies and marketing research departments within companies are embracing database techniques, utilising the synergistic benefits of matching database analyses with traditional survey data through data mining. To illustrate this point, consider the following quote from Greg Ward, Development Director for Taylor Nelson, the largest marketing research company in the UK.

The marketing research industry needs to acknowledge that databases are serious products and that both types of information have benefits. If you take the best of both – what we call information based marketing – you get something that is significantly more powerful. The ‘them and us’ situation does nobody any favours and the idea that the two disciplines bear no resemblance to each other is wrong.

As marketing decision-makers become more willing and able to interrogate databases and to creatively generate their own decision support, this does not mean the end of ‘traditional’ marketing research. As illustrated earlier when examining types of data that are used to build consumer and market profiles, psychological data play a vital role that is fulfilled by qualitative and quantitative marketing research. The marketing researcher needs to develop a greater awareness of both how data captured through traditional methods can be integrated with data held on databases *and* how the combined data creatively support decision-makers.

Databases, the development of datawarehouses and the use of data mining techniques are allowing a wider and shared use of data. The graphical formats of presenting data, especially using maps, break down many barriers in decision-makers who resist formal statistical analyses. They encourage managers to tailor output to meet their individual needs. The creativity that is the hallmark of marketing decision-making is supported by the creative collection and connections between data. Where there are gaps in decision-makers’ knowledge, they can be more focused and precise in determining what marketing research support they need. Many marketing researchers are rising to meet this challenge.

The next example illustrates how many companies restructure themselves to integrate databases and traditional marketing research, seeing the disciplines as complementary, not competitive.¹²

example

Raiding the data bank¹³

Moves to overlap database marketing and marketing research are stepping up a gear, as companies like Boots, Royal Bank of Scotland and Sun Life of Canada restructure to integrate the disciplines more closely. Restructuring ranges from shifting the furniture so that teams sit together, to full integration of databases and research databases. Many companies are conducting the overlay themselves and redefining the role of marketing research in the process.

In the mid-1990s, Carola Southorn was group marketing services manager at travel and financial services company Sage and foresaw this trend. She spearheaded the development of guidelines for researchers handling databases, a milestone at the time. She says that ‘the ethos on the two being very separate has been overtaken by events’.

It is argued that the urge to merge data is driven from the top. Marketing directors are concerned with the quality and relevance of market data, not its source. At the Royal Bank of Scotland both the head of marketing information and research, Maryan Broadbent, and her

database counterpart, Tim Crick, report to the Bank's Director of Retail Marketing, Ian Henderson. Maryan explains: 'It's no good me telling Ian what customers think, and Tim telling him how they behave. We need to know how attitudes and behaviour are related. Ian asks us not to give him independent views but to go away and give him a consolidated picture.' ■



International marketing research

Linking databases and survey data is transforming international marketing research. Within individual companies, customers may be analysed from operational data within a country, showing different patterns of behaviour between different regions or cities and relating that behaviour to their marketing activities. When a company operates across borders, country differences become just another geographical variable.

In deciding to operate or develop in a particular country, companies may buy a geodemographic information system (should one be developed for that country). A GIS may be used as a foundation to add to their operational data. From this point they may go through the stages of database development as laid out in Figure 5.2. The following example illustrates how a company looking at a particular country may use a GIS to great effect.

example

Making data go further

Expanding overseas may sound like a good idea, but ask any marketer who has attempted it and they will tell you how difficult it can be. Knowing the 'lie of the land' does not mean just a quick reconnaissance of the target market, it means detailed analysis. Geodemographical information systems (GIS) can offer a solution. Tesco, which is increasing its presence in Hungary and the Czech Republic by investing €1,100m in three shopping malls in Prague and Budapest, is one of the many companies using GIS to plan overseas projects. The retailer recently said it plans to build six megastores per year in Eastern and Central Europe. Several established map and data providers are meeting the demand created by large users, such as Tesco. Experian, Claritas and Equifax provide GIS packages and data for European markets and for parts of Asia, Australasia and South Africa. ■

Performing analyses within countries is proving most fruitful, provided a base GIS has been established. Problems start where there is no base GIS. In many countries there are great problems in tracking down and combining data sources that can be relied upon. Further, even if reliable data can be located, legislation may make the use of certain data types illegal. In many developing countries, the data needed to build a GIS are sparse. With the data that are available, much experimentation is needed to enable valid classifications that reflect consumer types which are useful to marketers and marketing researchers.

A further problem exists when making comparisons across countries using separate GIS systems for individual countries. Many GIS vendors have experimented and developed classification systems that allow comparisons between European countries. Building such classifications is difficult because of the inherent property differences between countries and differences in the data available for analysis.

The fusing together of different data sources – including customer data, geodemographic data and survey data – illustrates that the issues involved in understanding international markets are no different from those encountered with domestic markets.



Ethics in marketing research

Marketing researchers are confronted by problems posed by the wording of ESOMAR and individual country marketing research associations' codes of conduct.¹⁴ The codes specify that the compilation of lists, registers or databanks of names and addresses for any non-research purpose shall in no way be associated directly or indirectly with marketing research. However, the examples detailed in this chapter show that supporting marketing decision-makers through databases and marketing research can be seen as part of a total information industry. Evidence of the many leading marketing research agencies involved in data collection and analyses through databases illustrates that databases need not be unethical. With due care it is possible to combine marketing research ethics and databases generated through database marketing. There are a growing number of companies that have used marketing research for many years that now combine the traditional role of marketing research manager with a wider role including database management. An essential part of this combined role lies in the management of customer databases, adding survey details to respondents' individual details, at either an individual or an aggregated level.

Given the phenomenal growth of databases in marketing and the support they offer to marketing decision-makers, they are here to stay. With well-planned 'traditional' marketing research integrated into database analyses, the strategic power of consumer and market analyses is phenomenal. If marketers abuse their knowledge of consumers, they stand to do great harm to their brands and corporate image. For example, in bank databases there are many opportunities for the cross-selling of products. Rather than welcoming the approach from another division of a bank, trying to sell insurance to an investment client, there can be a reaction against the approach, affecting the original business. Consumers are now more aware of how



For insurance companies, would 'practising your flying technique' constitute an unhealthy lifestyle?

valuable knowledge of their behaviour is and how it is used by marketers. They are willing to trade this knowledge for the kind of rewards that are gained from the use of their loyalty cards. Marketers are aware of the dangers of abusing the knowledge that their customers impart to them. However, there are issues of civil liberties that cannot be ignored. These are touched upon in the following example.

example

Loyalty for sale¹⁵

Provided that shoppers like the benefits and do not object to a system which records every bar of chocolate and bottle of gin purchased, no great harm will be done. However, there is a danger that, despite the safeguards of Data Protection Acts, this mass of information on consumers' habits could leak across the networks into unscrupulous hands. Issues of civil liberty would be raised if, for example, insurance companies could use the data to identify people whose purchases indicated an unhealthy lifestyle; or if the police could draw up a list of suspects by monitoring the purchase of specific items or unusual consumption patterns. ■

One of the benefits of the use of geodemographic systems is that in many cases the individual does not have to be identified; the postcode is a sufficient key to make a link between databases. This maintains the marketing research industry's maxim of respondent confidentiality.



Internet and computer applications

At the start of the 1990s, this chapter would not have existed in a marketing research text. The idea of conducting internal secondary data searches and analyses would have merited a paragraph or two as part of the process of developing primary data collection. Since then, the massive technological changes that have made the global use of the Internet commonplace, the increased storage space, speed and analysis capabilities of computers, and the increased sophistication of software collectively have made fundamental changes to the environment in which marketing researchers operate. The collection and analysis of customer data held within businesses have developed enormously and marketing researchers cannot ignore these developments. To see the impact of these developments, read Professional Perspective 8 on the Companion Website, which presents the case of Deutsche Bank by Trevor Merriden, who asks: 'How do you knot together the information of a vast organisation and make hundreds of millions of euros in the process?'



See Professional Perspective 8.

In Chapter 1 we discussed how, for many years, marketing researchers have recognised the competition they face from an array of management consultants, but more recently competition has emerged from raw data providers such as call centres, direct marketing, database marketing and telebusinesses.¹⁶ Much of the new competition has emerged from organisations that have utilised and developed Internet and computer applications and have been able to offer support to decision-makers, in faster, cheaper and more user-friendly formats, though not necessarily more rigorously or ethically. Leading marketing researchers have developed means of integrating many of the new formats for supporting decision-makers with traditional marketing research methods and have maintained their customary rigour and ethical behaviour. In order to get a feel of how decision-makers may be supported by some of the means discussed in this chapter, we recommend that you explore the following Websites. These Websites contain case studies of the applications of decision support.

When working through these cases, consider what ‘gaps’ may still exist in the knowledge of decision-makers that may be filled only by the use of traditional marketing research techniques.

Two major suppliers of software that help with customer relationship management mentioned at the start of this chapter are SAP www.sap.com and AIT www.ait.co.uk. They also show how operational data generated in organisations may be integrated.

The main geodemographic information systems to examine are produced by Experian on www.experian.com, which covers applications in Britain, France, Germany, Italy, the Netherlands, the USA, Asia Pacific countries and others. The Acorn system on www.caci.co.uk is primarily based on British applications, though you can see their international applications and alliances on www.caci.com.

A directory of datawarehouse, data mining and decision support resources, which includes software suppliers as well as consultants, can be found on www.info-goal.com/dmc/dmcdwh.htm. A French datawarehouse supplier with a case based on the Renault Company can be found on www.decisionnel.fr. Further explanation and illustration of the Clementine data mining software referred to in this chapter can be located on www.spss.com. Finally, visit www.decisionscience.co.uk to see a company that utilises data mining techniques with traditional qualitative and quantitative marketing research techniques.

Summary

The overall tone of this chapter has been to demonstrate that internally generated secondary data offer great opportunities not only for decision-makers but also for researchers. As with all good secondary data sources, they have a major impact upon the conduct and direction of primary data collection, analyses and interpretation.

Databases, including customer operational data, geodemographic data and survey data, are radically changing how marketing decision-making is being supported. There is much debate as to whether the use of databases is compatible with traditional techniques of marketing research. With the junk mail connotations of databases and compromises of respondent anonymity, many marketing researchers may seek to keep the marketing database at arm’s length. However, handled with the professional acumen that marketing researchers have displayed for many years, the database presents great opportunities for the marketing researcher. In Europe, many of the leading marketing research agencies and research functions within companies have embraced the marketing database.

For the marketer, databases help to build profiles of consumers, linked to the products, communications and distribution methods those consumers favour. For the marketing researcher, databases can present the opportunity to experiment in ‘one big laboratory’, build models of consumer behaviour, develop an understanding of the gaps in knowledge of consumers and make links between behavioural and attitudinal data.

Much of the data that offers these benefits has been gained using data that capture customer buying behaviour. The use of the ‘loyalty card’ is one example. Different types of data, including scanner data, loyalty card data and survey data, may be combined using geodemographic information systems (GIS). Using base geographic and demographic data, existing customers can be analysed and mapped out.

Disparate database sources are pulled together through the use of datawarehouses. The datawarehouse integrates databases and survey data, allowing creative connec-

tions between data to be explored. Integrated databases and survey data can be explored using data mining techniques. These processes involve the use of proprietary software and inquisitive, creative decision-makers who search for trends and patterns in customer behaviour and attitudes. The development of datawarehouse and data mining expertise especially helps to cope with the problems of disparate databases and survey data from different countries.

The ethics of using databases provokes much debate in the marketing research industry. As many research practitioners grow more accustomed to using databases, marketing research guidelines and codes of practice are being developed to reflect the good practices that exist in many companies.

Questions



- 1 How may 'operational data' held in organisations help to build up an understanding of customer behaviour?
- 2 What is a customer database? Why may a marketing researcher wish to analyse the data held in a customer database?
- 3 What kinds of data can be gathered through electronic scanner devices?
- 4 Call in at a supermarket or store that operates a reward or loyalty card scheme that requires you to apply for membership. Pick up an application form and examine the nature of questions you are expected to answer. What marketing research use can be made of the data collected from this application form?
- 5 Describe the benefits to the *marketing decision-maker* of being able to capture data that identifies characteristics of consumers and their shopping behaviour in a store.
- 6 Describe the benefits to the *marketing researcher* of being able to capture data that identifies characteristics of consumers and their shopping behaviour in a store.
- 7 Why may the characteristics of consumers differ, based upon where they live?
- 8 What is a geodemographic classification of consumers?
- 9 How can the graphical representation of consumer characteristics using maps help marketing decision-making?
- 10 What benefits may be gained from fusing together customer characteristics held as internal secondary data, with a proprietary geodemographic information system held as external secondary data?
- 11 How does the compilation of different types of data help to build a strong 'picture' of consumer characteristics?
- 12 Describe the stages of development in using databases and survey data to build profiles of consumers and model marketing decisions.
- 13 What is a datawarehouse?
- 14 What is the difference between a datawarehouse and data mining?
- 15 What ethical problems exist with the use of databases that many traditional marketing researchers may find difficult to cope with?

Notes

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