Chapter 12

Marketing information systems and research

LEARNING OBJECTIVES

After reading this chapter you will:

- understand the importance of information in effective marketing planning
- appreciate the nature and meaning of the marketing information system and its role in providing information for decision making
- become acquainted with the principal problems in designing a marketing information system
- recognize the contribution of contemporary marketing information system technology to information provision and processing
- be aware of key sources of information and inputs to the marketing information system, including the marketing research process, and with contemporary developments in this area
- be familiar with marketing research techniques in terms of their application and importance in the marketing information system

INTRODUCTION

Marketing orientation places customers at the forefront of planning activities. It is a philosophy of total business thinking that is not merely confined to the realms of the marketing department. Organizations face changes and challenges from outside as well as inside their boundaries. The role of marketing is to anticipate and identify such changes and advise the organization on how to respond to challenges in the context of a competitive marketplace.

Marketing needs information to carry out this task. Marketing research collects information and a **marketing information system** (MkIS) analyses and acts on such information. According to Kotler and Keller[1] a marketing information system consists of: 'People, equipment, and procedures to gather, sort, analyze, evaluate and distribute needed, timely and accurate information to marketing decision makers.' This definition highlights that the marketing information system is more than just marketing research. Information provided by marketing research is one input to the marketing information system, albeit a crucial one. The whole purpose of the marketing information system is to enhance the marketing manager's decision-making capabilities.

In practice, an MkIS provides a store of historical customer data. This produces better efficiency internally due to better organized data, thus ultimately leading to more effective strategic improvements; better identification of opportunities that might lead to the development of new products and services, and the development of better long-term relationships with customers arising from increased customer loyalty. Chapter 11 was concerned with forecasting, and the forecast is the starting point when constructing a business plan. It is, therefore, critical that forecasting information is lodged on the MkIS. To achieve this requires a study of an organization's current information base and its ability to monitor existing marketing activities. It also needs the ability to use information to match the dynamics of a changing market and to report such changes to marketing management in order that appropriate planning action can be taken.

INFORMATION REQUIREMENTS

An organization's strategy, planning and operational control is dependent on information that is available to the decision maker. A **situation analysis** is a method of considering this information, and then relating it to the operations of the organization. Environmental scanning should then be undertaken, as well as studying the internal marketing system, and this should then be made available to key decision makers. This forms the basis for strategic marketing decisions which are monitored to ensure that objectives are achieved. The MkIS provides the medium through which information is collected, channelled, focused and communicated.

Information requirements depend on:

- the type of industry or environment;
- the size of the organization;
- the marketing decisions to be taken;
- the dynamics of the industry or environment.

It is difficult to generalize about the individual needs of an organization. However, information is collected from internal and external sources that include customer, market and competitor information. Quite often this information exists, but is not in a form suitable for use by marketing. Much is collected for invoicing purposes, where its strategic value is not recognized. Customer inquiries and customer complaints need to be channelled into the MkIS to ensure that they are valued and used for planning and controlling marketing operations.

Information on existing customers will form the core of the database, e.g. invoices record information that can be used by marketing as can be seen in Table 12.1.

As the volume and sophistication of the information collected increases, an organization will build up its database of existing and potential customers, which will allow the application of more sophisticated targeting and segmentation strategies through a more thorough understanding of buying behaviour in the marketplace. Gounaris *et al.*[2] show how far we have come with building and evaluating marketing information systems in today's organizations. They demonstrate that an effective marketing information system in modern organizations improves not only internal performance, including functional performance and organizational climate, but also external performance such as better adaptability to market conditions and customer responsiveness.

The nature of the marketing information function has changed over recent years, and so too has computing technology such as laser scanning of bar coded grocery products. This has resulted in revolutionary changes to business as information is more accurate and more quickly obtained. This is a key reason for the expansion of the large retail groups like Walmart, Lidl, Aldo, Tesco, Asda, Morrisons and Sainsbury's.

TABLE 12.1 MkIS utilization of accounting invoice information

Information	*Marketing use*
Customer name	Identification
Customer address	Geodemographic profiling and census data
Date of sale	Tracking of purchase rates; repurchase intervals
Items ordered	Benefit/need analysis; product clusters
Quantities ordered	Heavy/light user; crude segmentation
Price	Value calculation of profitability
Discount (if any)	Price sensitivity
Terms and conditions	Customer service needs; special requirements

Decisions support systems (DSS) were developed in the late 1970s and these are designed from the viewpoint of an individual decision maker. They are computer-based systems that are interactive and flexible, so results can be generated on the spot and then sorted and regrouped and manipulated as required. Managers can probe for trends and isolate problems.

The MkIS is an invaluable aid to decision making and is a specialized subset of the corporate **management information system (MIS)**. The term 'management information system', along with that of MkIS, is synonymous with data processing and forms a framework for managing information that is gathered from both outside and inside the organization. The MIS consists of five separate planning subsystems, namely: Production or Operations; Human Resource Development; Finance; Logistics and of course Marketing's MkIS that itself consists of four subsystems as shown in Figure 12.1.

1 The **internal accounting system** is a system that reports orders, sales, dispatches, inventory levels and cheques receivable and payable.
2 The **market intelligence system** is a set of procedures and sources used to obtain everyday information about pertinent developments in the marketing environment, largely built up from data like reports from sales representative.
3 The **marketing research system** is the systematic design, collection, analysis and reporting of data findings relevant to a specific marketing situation facing the company.
4 The **analytical marketing system** analyses marketing data using statistical procedures and models. This analysis feeds into strategic marketing plans.

Subsystems 1, 2 and 3 are data collection methods, whereas subsystem 4 is an analytical method. Together they provide a framework for marketing managers to marshal their thoughts into tactics, and to assist management in seeing the important elements of a particular situation and examining

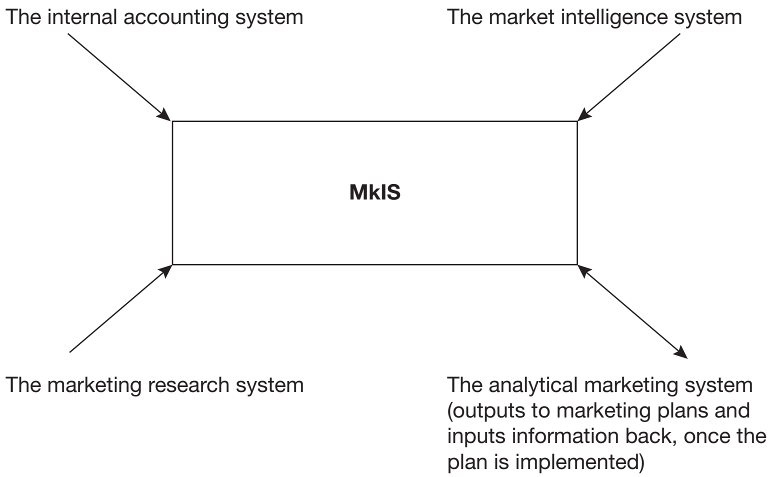

FIGURE 12.1 Marketing information system

the relationships between these elements. A successful MkIS provides a structure for analysis, planning and control of a given set of activities. Creating an MIS and MkIS for any business is a complex, individualized process.

Lancaster and Massingham[3] distinguish between an MkIS and marketing research. Marketing research is concerned with the task of generating information, whereas the MkIS is focused on managing the flow of information to marketing decision makers. This distinction is important because information is worthless unless it is relevant and effectively communicated.

INPUTS TO THE MKIS

The three inputs to the MkIS as shown in Figure 12.1 are now examined individually:

The internal accounting system

Internal company data can be a fruitful source of information, but it is often not fully utilized. Administrative and documentary procedures vary between companies, but most start with the customer's enquiry and end with the customer's invoice. In B2B environments it is possible to build a picture of the overall system from individual employees to the total departmental system and ultimately to the firm as a whole.

Data from marketing/sales departments

These are the main points of commercial interaction between an organization and its customers. Consequently, a great deal of information should be available, including:

- *Total sales*: every company keeps a record of its total sales over specific periods e.g. daily, weekly, monthly.
- *Sales by products*: few companies sell only one product; most sell a range and keep records of each kind of product or product group.
- *Territorial sales*: statistics are kept partly to measure the progress and competence of the salesperson (sometimes to influence earnings because commission may be paid on sales) and to measure the degree of market penetration.
- *Sales by trade classification* e.g. textiles, engineering or chemicals. This will give an indication of market penetration for each class when compared to the official census of distribution which analyses sales by trade classifications.
- *Sales volume by market segment* may be geographical or by type of industry. This gives an indication of segment trends in terms of whether they are static, declining or expanding.
- *Sales volume by type of channel of distribution*: where a company has a multi-channel distribution policy it is possible to calculate the effectiveness and profitability of each type of channel. This allows for trends to be identified in patterns of distribution that can then be taken into account in planning future channel requirements. Such information allows marketing to identify and develop promising channel opportunities resulting in more effective channel management.

- *Sales volume over time* covers actual sales and units sold. Such information enables seasonal variations to be identified, and inflation cost adjustments can be taken into consideration.
- *Pricing information*: historical information relating to price adjustments by product allows the organization to establish the effect on demand of price increases or decreases and to judge the likely effects of any future price changes.
- *Communication mix information* includes past data on the effects of advertising campaigns, sponsorship, direct mail programmes or exhibitions, levels of expenditure on marketing communications and the effect on sales of increases or decreases in such expenditure. Such information can act as a guide to the likely effectiveness of future communication expenditure plans.
- *Sales representatives' records and reports* A visit card or file on every 'live' customer should be maintained. Sales representatives frequently send reports to the sales office on such matters as orders lost to competitors and possible reasons why, as well as on firms that are holding future purchasing decisions in abeyance. Such information could help in determining future levels of demand or point to possible necessary improvements in marketing strategy.
- *Inquiries received and quotations sent*: buyers send inquiries to potential suppliers who then send quotations. Such information is useful in terms of establishing a pattern of inquiries that mature into purchase orders. Such a pattern will expose levels of economic activity in the marketplace.

Other records

As well as sales records other departments also have records that may be of direct value:

- *Material purchased* comprises raw material and components used in the manufacturing process. Profitability measures can be established from such analyses.
- *Wages records*: knowing the proportion of direct labour that goes into prime cost (prime cost being made up of direct labour, direct materials and direct expenses) can give a guide to manufacturing productivity.
- *Despatch records* are kept that include details of goods despatched and methods of transport which then allows the company to build up a picture of logistical effectiveness.
- *Accounts department* provides cost data, as well as documents like past management reports. In addition, past budgets, with variance analyses, show budgeted figures against actual figures.
- *Departmental plans*: not only should past and current internal information be available to marketing, but so should short, medium and long-term plans of individual departments. Future planned activity and changes in company policy or methods of operation can be evaluated and taken into account.

Sources of information available from the internal accounting system are multifarious and represent the most obvious data that can be of use within an MkIS. Other departments can input valuable data and such information can be collected from Research and Development, Human Resource and Production in particular where measures of output and productivity can be used. A fully co-ordinated corporate MIS, of which the MkIS is a component part, is an invaluable aid to strategic corporate planners and marketing planners.

THE MARKET INTELLIGENCE SYSTEM

The market intelligence system is concerned with collection and analysis of ongoing developments in the marketing environment. This is normally regarded as a sub-set under marketing research where it is referred to as 'desk research'. However, we are considering this as a component part of the MkIS, so it is logical that it is included here, and marketing research follows later. The main sources are **secondary data sources**, the principal ones of which are now summarized.

Government sources

In most developed countries of the world government-supplied information is probably the most valuable of external sources of secondary data. The more potentially useful types of government information include:

- *Census data*: most governments conduct a regular census of their citizens. Census data is necessary for government planning and policy making but it is also a valuable source of information for the marketer. Census information includes information on numbers in the population, household and individual data such as number in household, age, sex, marital status, socio-economic class, country of birth, education and economic activity.
- *Economic activity*: most governments collect and publish statistics about occupations and the employed population classified into branches of industry. In most developed countries key statistics, covering age, distribution, socio-economic status, housing conditions, housing tenure, car ownership and many others are available. These statistics are used by marketing organizations to evaluate potential markets and often form the basis of segmentation and targeting strategies as discussed in Chapter 3.
- *Income and expenditure statistics* contain information on national income and expenditure; population statistics; labour; social services; production; agriculture and food; energy; chemicals; textiles; construction; retailing and catering; transport; external trade; wages and prices; entertainment and overseas and home finance.
- *Social statistics* usually contain information on aspects of social conditions and services and education.
- *Distribution statistics*: governments also collect and publish information on distribution such as information on numbers, sizes, type and turnover of different types of retail outlets.
- *Production statistics* provide information on employment; wages and salaries; stocks; capital expenditure; purchases of materials and fuel; sales and work done.
- *Economic trends* usually contain information on aspects such as the value of imports and exports; volume of retail sales; index of production; retail prices; gross domestic product; personal disposal of income; saving and borrowing; consumer expenditure; investment; relationship of stocks and output and changes in stocks.
- *Household expenditure*: these types of government surveys collect information on household expenditure on about 100 grouped items and are analysed by factors such as household income, household composition, occupation and age of the head of the household.

- *Overseas trade statistics* involve a summary of imports and exports by commodities and countries.
- *Business monitors*: the object of individual business monitors is to bring together the most up-to-date official statistical information covering production, imports and exports relating to a particular industry. Most countries produce such information, and in the UK, such monitors cover:

  – *The Production Series* detailing such items as food, drink and tobacco; coal and petroleum products; chemicals and allied industries; metal manufacture; engineering; textiles; clothing and footwear; printing and publishing; timber; furniture; pottery; glass and cement.
  – *The Service and Distribution Series* covering food shops; clothing and footwear shops; durable goods shops; catering trades; and finance houses.
  – *The Miscellaneous Series* detaining motor vehicle registrations; cinema; insurance companies; overseas travel and tourism; acquisitions and mergers and company finance.

Government statistics are collected for the purposes of government, and not specifically for marketing firms. Consequently, such data may not always fit a particular marketing purpose and may have to be extensively modified or re-tabulated to be of use. A further point is that many of these statistics have been collected by government for general macro-economic policy making. For such decision making, broad aggregates of data are usually sufficient, and various government agencies will often use a number of assumptions and conventions when compiling statistics which can affect their validity, especially when they are used out of context in situations other than those for which they were originally compiled. Government statistics are generally free of charge and are a useful information source which must be used prudently when making marketing plans. Detail of the range and sources of government-published information in different countries is beyond the scope of this text but can be found in appropriate marketing research texts.

Trade associations and other bodies

There is a wide variety of statistics on particular trades or industries issued by trade associations, chambers of commerce and other bodies. Generally, these statistics are issued only to the members of such associations, depending on what they make or sell. Data available from such sources are more detailed than government statistics and relate to a narrower field, e.g. statistics issued by a trade association for tool manufacturers would include figures for volume and value of the production of various tools. They will also show the destination of manufactured tools exported from rival countries, and this gives valuable leads as to the areas where there is a market for such products.

Other published information

Statistics are only part of desk research. A great deal of information can be obtained from published reports, yearbooks and reference books on relevant subjects. This is a wide field, but researchers know where to look for such information and find the information services of technical and reference libraries and city business libraries useful sources. Such sources, however, are researched and authored by consultants and there are cost implications in using them.

Official handbooks

In most countries or regions, 'official' books give a mass of general background information on that country e.g. *Hong Kong – an Official Handbook*, issued by the Hong Kong government. Similar publications are available for most countries and are normally provided free of charge from information departments of embassies. If one is carrying out research relating to a particular country, such a handbook will supply general background data.

Directories

A wide range of trade and regional directories lists information on businesses in a particular trade or a particular town or area. Even a classified telephone directory can yield a wealth of information in terms of listing contact details of companies providing a variety of products and services under different alphabetical headings e.g. electric motors; electrical appliances – rental and hire; electrical appliances – repairs and parts; electrical components and wiring; electrical engineers; electrical inspecting and testing; electrical supplies, etc.

Economic surveys

As well as government, banks and Chambers of Commerce, stockbrokers often issue reports on a particular industry, mainly in relation to those firms whose shares are quoted. Sometimes findings of research sponsored by a firm or trade association are published and many such reports are provided by national or local newspapers.

International sources

- *The United Nations*: apart from its political role, the UN operates through many agencies. Those which concern the industrial and trade researcher are the United Nations Development Programme (UNDP) and the United Nations Industrial Development Organization (UNIDO) both of which are mainly concerned with helping the progress of developing countries. Each has an international staff and is engaged in a wide variety of international operations. To support these operations, regular research is undertaken and reports are published on industrial and commercial problems throughout the world.
- *International bodies*: apart from organizations sponsored by the UN there are some which are associated with the UN and others which are independent but co-operate. Such sources are generally very reliable and the main ones are:

  – *World Health Organization (WHO)* is mainly concerned with world health problems such as combating disease and giving guidance on hygiene. Its activities are of interest to marketing people who are engaged in the pharmaceutical trade.
  – *International labour Office (ILO)* is principally concerned with trying to find work and create employment in under-developed areas. To a certain extent, its activities run parallel with those of UNDP and UNIDO, but it concentrates mostly upon employment and training labour.

- *World Trade Organization (WTO)* is mainly concerned with international negotiations on trade and tariff reforms, but also issues publications on trade and industry.
- *European through Eurostat Union* is mainly concerned with the development of trade and industry in Europe. It has a range of publications on trade and industrial issues that are mainly concerned with Europe. Since non-European countries have ties with the European Union, some publications also have studies and reports on other countries' activities.
- *Food and Agricultural Organization (FAO)*: associated with food and agriculture is the use of fertilizers and insecticides.
- *Organization for Economic Co-operation and Development (OECD)*: this organization's objective is to achieve in Europe the highest sustainable growth, employment and standard of living, to contribute to economic development and to expand world trade on a multilateral and non-discriminatory basis. As a result, the OECD produces many publications like *Food Marketing and Economic Growth* and *Organizing and Operating a Voluntary Food Agency*.

Companies House

Information about all UK limited companies can be accessed at Companies House or in person or through agencies that conduct searches for a fee, or online. Most developed countries have their equivalent of Companies House whereby information can be found on registered companies in that country. There are many private suppliers of information on registered companies in different parts of the world.

Miscellaneous

Examples here include company annual reports, promotion and publicity literature and competitors' price lists. Visits to trade exhibitions are a useful way of gathering this material as well as giving the opportunity to study competitors' products and promotional material at first hand. A further source of information is published market research reports. These can be purchased when required, examples being Economic Intelligence Unit reports, Euromonitor (which produces reports on European markets), Henley Centre for Forecasting and MINTEL publications surveys whose reports cover a number of different markets, usually four or five in each publication, although periodically a whole issue is devoted to one market. They give many useful comments, statistics and predictions and the work of compilation is carried out by market researchers employed by MINTEL or commissioned from other professional market research firms.

'Off–the-peg' research data

In addition to the variety of published secondary research data, a company may decide to make use of syndicated research data usually purchased from a marketing research company which itself has carried out certain surveys. This type of data is a 'hybrid', falling somewhere between true secondary data and primary data. The difference between this type of data and **primary data** that is collected by the company itself through primary research, is that data are normally not collected for an individual client, but rather are sold to whoever will buy. For this reason, such data is often referred to as **'off-the-peg' research data**. The following are examples of such data.

Consumer panels serve the purpose of providing marketers with a continuous check on the market and a record of the behaviour of consumers and their reactions to changes in household products, methods of marketing or advertising. They comprise a reasonably permanent set of consumers, consisting of a sample of consumers selected on a statistical basis to represent accurately a cross-section of the target market. In the UK, the Attwood Consumer Panel consists of 5,000 consumers in Great Britain and 500 women in Northern Ireland. Members of the panel are defined by age, ACORN group, social class and income group. Each member of the panel is given a diary in which he/she records information on all household product purchases such as products and brands bought, prices paid, from which retailer, day and time of purchase, promotional offers, etc. This information is then fed back to the market research company, usually via a computer link, for detailed analysis, thus providing manufacturers and advertisers with a continuous check on the market and a record of the behaviour of consumers and their reactions to changes in products, methods of marketing or advertising.

Panellists return the diary to the market research organization who then sells reports of this activity to individual manufacturers. Diaries are intended to reveal:

- the performance of brands;
- the total number of people buying specific products;
- sales volume by type of shop and geographical area;
- the effect of promotions, price changes or competition;
- consumer purchasing patterns concerning brand switching.

Brand barometers are a service offered by market research firms to subscribers on a quarterly basis. Each covers a particular market, e.g. the private motorist's market or the household products market. In each market barometer, a range of products is covered; in the household products market, areas such as pet foods, bread, cereals and cleaning materials are included. Respondents are questioned regarding purchases or otherwise of each product category. Where respondents indicate they have purchased within a commodity class they will be questioned as to when, what brand and from which retail outlet. Data in brand barometers is analysed by geographical area, age, social class and Acorn categories.

Retail audit research is a well tried method of research that was first started by A.C. Nielsen Company in the USA, but is now applied in most countries. The principle is that an inventory is made at regular intervals of the stock and purchases of certain products at selected retail outlets in such fields as food, confectionery and cigarettes. This detailed inventory is carried out by field researchers with the co-operation of retailers, who are remunerated for their help. The audits are accurate and provide a picture of what the trade buys and sells and the quantities it carries in stock. Once the manufacturer's products leave the company, there is a time lag before they are bought and consumed. The longer this gap becomes, the more difficult it is for the producer to exercise control over supply to meet changes in demand and modify production. By the process of adding purchase invoices to opening stocks and then deducting closing stocks, sales of each item can then be determined.

Reports issued to subscribers are along these lines:

- retail purchases by brand and by product;
- retail stocks by brand and by product;
- consumer sales by brand and by product;
- percentage of shops handling the product;
- percentage of shops out of stock of various brands;
- retail and wholesale prices of various products;
- average size of retail order from average retailers;
- proportion of retailers buying direct from manufacturers and from wholesalers;
- display material, promotion and advertising carried out for various brands.

Nielsen claim this gives a better understanding of consumer behaviour and preferences; increases **up-selling** (i.e. satisfying the customer with a better and more expensive product than had been initially envisaged) and **cross-selling** opportunities (i.e. selling other products in addition to the ones that have been purchased); gains a comprehensive analysis covering consumers, brands, retailers and promotion and pricing practices; integrates sales, consumer profiles and attitudinal data; compares online and off-line performance and gains visibility into distribution gaps, competitive strongholds and pricing disparities to uncover tactical opportunities.

This is now a competitive market and several companies as well as Nielsen provide retail audit type services and data, increasingly providing information online. Websites enable the marketer to access a wide range of information sources quickly.

THE MARKETING RESEARCH SYSTEM

This is the final input to the MkIS and the method used can be one, or a combination of observation, **experimentation** and **survey research**.

Observation

The generation of primary data is based on watching and sometimes recording market-related behaviour. Techniques using **observation** are more suited to investigating what people do rather than why they do it. An example might be the posting of a researcher in a retail outlet to observe patterns of shopping behaviour. Another is the use of meter-recording devices in television audience research. Observational research varies from simple non-recorded personal approaches to complex, non-personal, permanently recorded ones, including the use of eye cameras and video cameras. A major advantage of observational techniques is that they may be used without the observed respondent's knowledge. This is particularly useful when such knowledge would influence or bias the results, or where perhaps respondents would not be willing to participate at all. Understandably, use of observation without the knowledge of the respondents raises a number of ethical and legal issues.

Several commercial research companies have introduced an observational marketing research service whereby a researcher actually moves in and lives with a selected family for a few days. During this time, the observer will note details of product and brand usage by the family followed up by a detailed analysis and report for the client. This relatively new approach to marketing research is often referred to as 'sleeping with the customer' (not literally we would add); the researcher actually lives with the subject family for several days including overnight stays. The idea is that this provides very rich data on how customers actually use products and brands in their everyday lives. After a time it is argued that the family will begin to forget they are being observed and simply proceed as normal.

Observational research is now well established in marketing. Lee and Broderick[4] argue that the potential for this marketing research approach is heightened by developments in technology which for example enable much more effective recording and interpretation of the behaviour of customers.

Experimentation

This is a more formal approach to primary data collection. As in any experimental design, the essence of this approach is to determine causal relationships between factors and to support or refute hypotheses about these relationships. The most usual marketing research application is that of test marketing. This is a technique in which the product under study is placed on sale in one or more selected localities or areas and its reception by consumers and the trade is observed, recorded and analysed. Performance in test markets gives some indication of performance to be expected when the product goes into general distribution and it includes likely sales and profitability of the product when marketed on a national scale, and feasibility of the marketing operation, meaning the soundness and integration of all elements that enter into it.

It is often an economic necessity to reduce new product risk by using one or more small and relatively self-contained marketing areas, wherein the marketer can apply a full-plan marketing strategy in order to gain at least a reasonably reliable indication that the product can be sold profitably in the eventual total marketplace.

The problem with the experimental approach to marketing is the difficulty of designing and administering the experiment in a scientific way. It is difficult controlling extraneous factors that might affect test results. The marketer may want to use experimentation to assess the impact on sales of different prices. It would seem relatively simple to do this by running several test markets using different prices while holding the other elements of the marketing mix constant. In these circumstances, any differences in sales between the test markets would be purely down to differences in prices. However, extraneous factors may serve to interfere with results and hence confound the marketer's assessment of the effect of different prices. For example, a competitor may introduce a special promotional offer in the test market region, or perhaps a local major employer in the test market area may suddenly lay off many workers thereby depressing the local economy. Such uncontrollable factors can affect experimentation results in marketing.

Mystery/secret shopping

Marketing research companies contract with retailers, banks, restaurants, beauty salons, motor dealerships, hotels, etc. to provide mystery or secret shopping evaluations. A shopper poses as a 'real' customer and goes to a particular outlet and evaluates the service received according to some pre-determined criteria. The mystery shopper is normally an independent contractor from an agency. Discretion and a good eye for detail are requirements of a good mystery shopper.

Companies might want to monitor staff product knowledge, availability of goods and services, response to promotional campaigns, compliance to standards of service and procedures, cleanliness of the premises, attitudes of staff to customers or the time it takes to obtain service.

Many customers have their first dealings with business over the telephone. Telephone call surveys provide a report and digital recording of each call. Online mystery shopping evaluates matters like access response time and the quality of response to e-mails and the efficiency of the website. Similarly, postal mystery shopping can reveal the speed and quality of a request for information. Secret video surveyors can film staff in everyday situations and then report this back to the sponsoring company.

The results of a mystery shopping programme can give an opportunity to gauge employee effectiveness in terms of performance and indicate areas where training might benefit employees or where there might be a need for action on the part of management.

Neuromarketing

Recently, marketers, and in particular, market researchers, have begun to explore the potential for using technologies which get inside the mind of customers in order to understand their buying behaviour. Senior *et al.*[5] refer to this approach as *mapping the mind*. Many of these technologies are used by members of the medical profession and in particular neuroscience. Fugate[6] designed a system to explore how the brain works in relation to marketing. Other technologies include functional magnetic resonance imaging (fMRI) which measures activity in parts of the brain; electroencephalography (EEG), another technique for measuring brain activity; and techniques for measuring heart rate, respiratory rate and galvanic skin responses. According to Kenning *et al.*,[7] fMRI in particular looks promising for the market researcher. Using these techniques the neuromarketer is hoping to be able to assess the effects of aspects such as different colours or packaging, different advertising copy platforms, different tastes etc., on customers' most deep-seated physical and cognitive processes. In fact, the idea of **neuromarketing** research is not new. Marketers were using the psychogalvanometer (lie detector) in their research as long ago as the 1950s. Although in its early days, neuromarketing research techniques are appealing and innovative.

Survey research

Survey research, based on sampling and questioning respondents, represents, both in volume and value terms perhaps the most important method of collecting data and covers: customer attitudes, customer buying habits, market trends and potential market size. Unlike experimental research, survey research is aimed at generating descriptive rather than causal data; unlike observational research, survey research usually involves consumers actively engaging with the researcher. Because of the importance and diversity of survey research in marketing, it is on this particular aspect that we now concentrate.

Sampling: contact with consumers and users is fundamental to marketing research. It is impractical and expensive to interview more than a proportion of the total who might purchase. This total number is known statistically as the 'universe' or the 'population'. In marketing terms, it comprises the total number of actual and potential users of a particular product or service. The total number of consumers who could be interviewed is known as the 'sample frame', while the number of people who are actually interviewed is referred to as the 'sample'. Scientific sampling techniques aim to achieve samples that are reflections, in miniature, of the universe from which they are drawn i.e. a microcosm of the universe.

If we can define clearly the universe or population to which the study relates, we have then to see if there is a suitable frame. If random or systematic sampling is to be used in a market survey, the availability of a suitable sampling frame is of prime importance. National lists, such as the Register of Electors, fall out of date, while commercial directories and professional registers are only reflections of subscribers or members who may not represent the entire population.

For example sampling companies from a local business directory would only encompass those businesses that have felt it necessary or useful to be listed in the directory, thereby leaving out perhaps smaller businesses who cannot afford to subscribe, or better established businesses who feel they do not need to. In this way the sampling frame is not representative.

Five criteria are important when evaluating sampling frames:

1 Size: is it big enough?
2 Completeness: *all* units of a population under survey should be included.
3 Accuracy: totally up-to-date sampling frames are rarely available. The frame may contain units which no longer exist.
4 Duplication: bias will result where names of sampling units occur more than once, e.g. some firms may have multiple listings in telephone directories.
5 Convenience: sampling lists should be accessible and suitable for sampling purposes.

Basic statistics texts explain random sampling, systematic sampling, multi-stage sampling, cluster sampling, stratified sampling and quota sampling along with an understanding of how deviation or bias can enter into a sample and its potential effects upon the results of a survey.

Contact methods Contact methods are a balance between time, the degree of accuracy required and costs.

- *Personal interviews* can be formal '**on-street**' or '**mall intercept**' surveys using structured questionnaires and a less structured 'depth' or 'focus' interview format that is done at the interviewee's home or in a group setting.
- *Postal surveys* demand a straightforward formalized questionnaire as personal intervention is not possible to explain questioning areas which might be unclear.
- *Telephone interviews* are popular owing to relatively low costs, especially for consumer research, but increasingly for B2B industrial research as respondents might be geographically spread, so travel costs are eliminated.

Contact medium: the questionnaire This cannot be designed until precise information requirements are known. It is the vehicle whereby research objectives are translated into specific questions.

The type of information sought and the type of respondents to be researched will have a bearing on the contact method to be used. This will influence whether the questionnaire is an unstructured schedule of discussion points for depth interviewing or a structured closed-ended type questionnaire for 'on-street' interviews.

Qualitative research

Data such as market size, numbers of competitors and average purchasing prices provide hard data on market facts. Marketers are also interested in **qualitative** data on markets and customers. This data encompasses areas like underpinning customer attitudes, customer perceptions and beliefs, psychological and sociological influences on consumer behaviour, and such techniques are aimed at providing this information.

Marketers have used several techniques for researching these more complex aspects. Many have been adapted from psychology and sociology. In the 1960s for example, marketers began to use what became collectively referred to as **motivation research**. Examples of specific techniques include thematic apperception, Rorschach ink-blot tests and word association tests. During the 1980s and 1990s many of these techniques fell into disrepute and motivation research in general was used less and less by marketers who felt it to be unscientific. Two techniques of qualitative research which remain viable and widely used are focus groups and depth interviews that were discussed in Chapter 7, Marketing Communications.

Marketers have again begun to look at innovative research techniques to gather and analyse qualitative data. Futures research, described earlier, is a good example. In the main, marketers are becoming more amenable to innovative techniques of qualitative market research if they afford insights into the underpinning behavioural processes and attitudes of customers.

Guinness is a good example of a company that has been willing to try out new techniques of qualitative research to try and find out customers' innermost thoughts. Guinness's research company have used techniques such as role playing, psychodramas and psycho-drawing in this process. Some of the findings from this research have found their way into multi-million pound advertising campaigns for the Guinness brand. Using this research, Guinness found that many of their customers drank Guinness because they felt it set them aside from the crowd. Many Guinness drinkers apparently see themselves as individuals. The famous Guinness 'It's not easy being a dolphin' advertisements starring Rutger Hauer were the result of this type of research.

INDUSTRIAL MARKETING RESEARCH (B2B)

Marketing research is traditionally associated with consumer goods. However, industrial goods marketers face similar problems – assessing market size and share; identifying customer needs; ascertaining the most appropriate price structure and determining levels of competitive activity. As we saw in Chapter 2 the principal differences between consumer and organizational buyer behaviour are motives for purchase and the context within which buying takes place. With this background in mind, it is useful to consider some differences in emphasis in relation to marketing problems:

- marketing mix emphasis, where purchasers of consumer products are more affected by appearance, packaging and advertising and often buy on impulse. Industrial goods purchasers are more concerned with quality, performance, specifications, price and delivery;
- different end uses of industrial products, which include finished articles like machine tools or fuel injection systems for cars, and components which need further work in order for them to fit into an end product (e.g. castings which will then require machining and polishing);
- customer requirements which can vary according to how closely they specify e.g. some specify dimensions, materials and tolerances, whereas others may simply purchase standard parts of materials.

It follows that industrial marketing research is more concerned with researching individual buyers and more use is made of depth interviews. These are costly, as more skilled interviewers must be used and respondents tend to be more widely scattered. Such disadvantages are offset against 'richer' data that can be generated.

In industrial marketing research it is less possible to generalize, as too much depends on such factors as numbers of potential customers. For example, a total market may contain six large buyers who make 70 per cent of all purchases, and 50 small buyers who make the other 30 per cent. In such a situation it would be sensible to census survey the six large buyers and sample the 50 smaller buyers.

INTERNATIONAL MARKETING RESEARCH

As we shall see in Chapter 16 there are added complexities when marketing across international frontiers. These include the process of marketing research. Differences in the availability and quality of secondary data are important considerations, so care should be taken to verify the accuracy of such data. Social and marketing practices differ widely between countries, as can political and commercial institutions and of course, language.

In researching export markets, it is important to note that conditions may vary from country to country so each has to be investigated individually. It is important not to assume that because a product or service is a commercial success in one country, it will automatically be so in another. This is true even of countries that share similar customs, lifestyles and languages. There are examples where, because some basic but small difference has been overlooked, a great deal of money and effort on the part of the exporter has been wasted. For example, German male customers usually want their trousers to be fully lined to the knee. In the UK this is unusual. In China the colour for mourning is white; in most other parts of the world it is black. Similarly, in certain parts of Africa the colour red is considered unlucky. Quite simply, it is easy for the marketer to miss subtle differences between cultures when marketing their products.

Even within a country, regional variations may be sufficient to require a different marketing strategy. These variations add to the complexity of research in international markets, and should be considered at a very early stage in research design. As a simple example we can define potential export markets:

- geographically;
- administratively (by divisions imposed by the company);
- by economic zones or trading blocs;
- politically.

These extra dimensions add complexity and more uncertainty to the international marketing research situation.

Before we complete our discussion of the MkIS, we are going to examine the stages in the conduct of a marketing research exercise.

THE RESEARCH BRIEF AND THE RESEARCH PROPOSAL

Before research is commissioned and undertaken it is important to ensure that the objectives, scope, time-scale and costs of the proposed research are fully understood and agreed. This is of particular importance when the marketing research is to be undertaken by an outside market research agency. The document which accompanies this stage of the research procedure is known as the **research brief**. The research brief should specify the nature of the problem to be investigated, the objectives of the research, research methods, analysing the results, time and budget. Most importantly, these aspects of the research must be understood and agreed between the party commissioning the research and those who will undertake it. A good brief must:

- clearly state the objectives of the research;
- mean the same to both the client and the researcher;
- not ask for irrelevant information;
- define the population to be sampled;
- state the accuracy required;
- state the variables to be measured and how these relate to the problem;
- specify analyses.

Once the research brief has been discussed and agreed, the marketing research team can then draft the *research proposal*. The main considerations here are to:

- restate the problem to confirm understanding;
- specify the research methods and reasons for choice;
- specify the sample method/size/construction/frame;
- specify the interviewing method/location/supervision;
- specify the data processing methods;
- specify the length of the survey and costs.

These responsibilities are important, because the conduct of marketing research and the decisions arising from it are the cornerstones upon which subsequent marketing policies are based. It is, therefore, important for an activity that can have an influence on the future prosperity of a company to be organized and controlled effectively.

NEED FOR AN MKIS

Marketers must increasingly consider building long-term relationships with their customers, especially those who operate in lean manufacturing environments as discussed in Chapter 9. Lead times are shorter and emphasis is now placed on quality and supplier reliability and less on price.

Lancaster[8] contends that these trends have affected all aspects of marketing. Normally dominated by the idea of the unique selling proposition, corporate marketing is now being forced to practise the small business philosophy of staying close to customers, understanding and meeting their needs and treating them well after the sale. Through having an MkIS it is possible to apply these principles in practice.

Tesco is a company that uses an effective marketing information system to get close to customers and their needs. Using their extensive database on customers, based primarily on their loyalty card scheme, Tesco are able to identify key customer groups to target special promotional offers, send direct mail shots and evaluate in-store campaigns. Often the integration of computer processes with decision making can be complex. Galliers and Sutherland[9] suggest possible reasons for this:

1 Much of the information that is gathered and communicated by individuals and organizations has little decision relevance.
2 Much of the information that is used to justify a decision is collected and interpreted after the decision has been made, or substantially made.
3 Much of the information gathered in response to requests for information is not considered in the making of decisions for which it was requested.
4 Regardless of the information available at the time a decision is first considered, more information is requested.
5 Complaints that an organization does not have enough information to make a decision occur while available information is ignored.
6 The relevance of the information provided in the decision-making process to the decision being made is less conspicuous than is the insistence on information.

In short, organizations and individuals collect more information than they can reasonably expect to use in the making of decisions. At the same time, they seem to be constantly needing or requesting more information, or complaining about inadequate information.

The authors conclude that organizations are systematically inept, or have severe limitations in understanding the nature of information and decision making. A situation exists where turbulent environments are increasing the need for information on the changes taking place. Yet, information technology does not always make the contribution it could to provide this information in a form suitable for decision makers. Technical problems of designing and implementing an MkIS are many, but it is problems faced by the user of the system that are of most importance to marketing management. These problems can be summarized under the headings of misinformation; lack of user orientation; the nature of management decision making; the user–system interface and organizational problems.

A final set of problems relates to difficulties of integrating the system into the organization. Often, systems are designed which fail in their implementation, not due to failures of the system, but because of the designer's ignorance of how it will be used. This can be a problem with systems where marketing decisions affect other parts of the organization. After all, marketing decisions relate to customers, and customers are the starting point of all business planning in a marketing orientated organization. This 'boundary spanning' role is an essential aspect of an integrated marketing approach, but is often resisted by departments who guard their own power in the form of information they control. Clearly, management support at board level is necessary to overcome such problems. Overcoming these problems, especially the problem of too much information from the system, needs careful system design.

A well designed information and decision support system should:

- Be based on a careful appraisal and analysis of the decision making requirements of marketing management. This involves establishing what types of marketing decisions are made, what sorts of information are required for these decisions and how this information is to be supplied. Clearly, this involves consulting end users of the system before it is designed and implemented.
- Be designed to be 'user-friendly'. Information is wasted if it cannot be used. A problem in the provision of information to marketing is that often the system is designed to suit the information specialist rather than the decision maker.
- Be designed to be 'interactive' and allow analysis rather than simply be a system for retrieval of information.
- Be cost effective. Information costs money, so an effective system of marketing information supply should be based on a careful evaluation of how the system will contribute to more cost-effective marketing decisions.

It is by paying attention to these key areas of the design of the marketing information system that potential problems of having information overload or the system being too costly can be minimized.

APPLICATION OF AN MKIS

Tactical applications are in areas like customer loyalty measures, generation of sales leads, testing price levels, promotional effectiveness and customer segmentation. When analysing the most profitable consumer profile for a product or service, the analyst can locate a list of actual and prospective customers with those characteristics. Promotional material can then be targeted to the specific needs of the identified market segments.

Sales force activities can be better co-ordinated by selecting the contact tactics most suitable for different groups of customers. Customer loyalty can be built up through logging all customer contacts which will provide an opportunity for repeat sales and maximizing sales of other company product lines. For example, through an effective marketing information system the marketer can build up a detailed profile of customers for the sales force. This can include details such as: the composition

TABLE 12.2 Strategic application of an MkIS

Competitive opportunity	*Marketing strategy*	*Role of information*
1 Changing the basis of competition	Market development or penetration, Increased margins, Alternative sales channels, Reducing cost structure	Prospect/customer information, Targeted marketing, Better control
2 Strengthen customer relationships	Tailored customer service, Providing value to customer, Product differentiation, Create switching costs	Know customer needs, 'Individual' promotions, Response handling, Identify potential needs, Customers as 'users' of your system
3 Strengthen buyer/supplier relationships	Superior market information, Decreased cost of sales, Providing value to supplier, Pass stockholding to supplier	Internal/external data, Optimization of sales channels, Measure supplier performance, Identify areas of inefficiency
4 Build barriers to new entrants	Unique distribution channels, Unique valued services, Create entry costs	Knowledge of market allows improved service and value, 'Lock in' customers, suppliers and intermediaries, Immediate response to threats
5 Create new or substitute products	Market led product development, Alliance opportunities, New products/services	Market gap analysis, Customer dialogue, User innovation, Information as a product

and operation of the decision-making unit (DMU), company-specific purchasing policies and procedures, average order size and effects of special promotions. Clearly, this type of information puts the salesperson in a much stronger position when approaching and selling to customers.

Strategic applications where information is used to develop strategic plans especially in areas of targeting, new product development and direct marketing. An effective MkIS generates huge amounts of customer and market data. It thus has the potential to input into marketing policy and can be seen to operate strategically when its information is used in the ways illustrated in Table 12.2.

DEVELOPMENTS IN MARKETING INFORMATION SYSTEMS TECHNOLOGY: DATABASES

Technological developments have had a major impact on marketing information systems. These developments are underpinned by relatively cheap yet sophisticated computing power which is facilitating improvements in data collection storage, manipulation and retrieval. A technology that speeds up results from a market research survey uses computer assisted telephone interviewing that provides instant data feedback to the control centre as interviews are conducted and questionnaires completed through a hand-held computer in a wireless Internet location.

Databases Developments in information collection, storage and analysis are making information an important competitive asset. The key to this information revolution is the use of **databases** in marketing. Essentially, a database represents a pool of information on markets and customers which can be interrogated and analysed to facilitate improved marketing decision making. Databases are not new, as even a system of manual sales records kept on customers in a filing cabinet is a database.

A database can be built from a variety of sources. Examples include customer orders, loyalty cards, customer enquiries, subscription lists and ad hoc market research studies. There is a wealth of information available to the point of it being overwhelming. Not only do modern database techniques and technologies help to overcome this problem, but we now know much more about the key factors in developing and using successful databases. In developing a database attention needs to be paid to:

- clear and specific objectives for the database, including types of information required and why;
- effective systems and strategies for data capture;
- effective systems for data storage, including database maintenance;
- effective systems of analysis and interpretation of data to provide information for decision making.

Data capture involves systems for providing and collecting data for the database and includes many of the sources mentioned above. Marketers use sophisticated IT-based data collection techniques. In some countries there is legislation relating to the collection and use of data on customers which is designed to cover customers' rights in several respects with regard to such data. Online sales enable the marketer to capture more information than shop-based transactions because the customer provides their address, email, telephone and mobile numbers, etc. as a matter of course, whereas many shops do not do this.

Data warehousing is a term used to describe collecting data on customers and markets from several possible sources in a company and storing it in one central database. This has developed because companies have different departments in the organization, each of which has a unique database that is not always made available to the rest of the organization.

Data mining enables the marketer to use database information in ways to improve the effectiveness of segmentation and targeting, promotion and direct marketing strategies as well as the development of relationship marketing strategies. Marketing managers can now use statistical analysis and modelling techniques to look for important patterns of cause and effect in the database through data mining.

Some companies, because of the nature of their business, have considerable information on their customers which can be used effectively through data mining. Banks and credit card companies are good examples. A company such as the logistics company, Federal Express, has a wealth of information encompassing not only their card holders' personal details, but also what purchases they are making at what price, how often and from where. Imagine how information like this can be used by the marketer: for example, to develop direct marketing programmes, design new products to meet specific customer needs, target specific customer groups and adjust the marketing mix.

It is important to ensure that databases are regularly maintained and updated. Customers and information on them change all the time and if the database contains inaccurate information we run the risk of making wrong or embarrassing decisions. One of the most embarrassing effects of obsolete database information is where direct mail is sent to a deceased person's address perhaps offering the chance of a 'holiday of a life-time'.

SUMMARY

It is becoming increasingly important for marketing management to have up-to-date information to carry out its tasks. Marketing is becoming increasingly proactive, and must seek to identify changes and trends in the macro-environment and then translate these into action plans. In order to carry out this task, the concept of the marketing information system (MkIS) has been developed and this forms an integral part of the corporate management information system (MIS).

Inputs to the MkIS are:

- the internal accounting system;
- the marketing intelligence system;
- the marketing research system;
- the analytical marketing system which is the output.

Internal accounting information is collected as is market intelligence, the latter particularly by the field sales force, and this inputs to the MkIS. Marketing research should be well planned from a good research brief to provide tactical and strategic information, also an input to the MkIS. Developments in marketing information systems technology and databases have helped to develop sophisticated marketing information systems which are useful for marketing planning purposes as will be demonstrated in Chapters 13, 14 and 15.

KEY TERMS

Marketing information system (MkIS)	370
Situation analysis	370
Decision support system (DSS)	372
Management information system (MIS)	372
Internal accounting system	372
Marketing intelligence system	372
Marketing research system	372
Analytical marketing system	372
Secondary data sources	375
Primary data	378
'Off-the-peg' research data	379
Consumer panel	379
Brand barometer	379
Retail audit research	379

. . . *continued*

KEY TERMS ... *continued*

CASE STUDY

Dashdish

John Oldfield is feeling under pressure. His desk is covered with market research reports, data from the accounts department regarding sales and profits figures, sales representatives' records and reports for the last three months, and any number of secondary reports, including government publications, Chamber of Commerce reports and bank reports pertaining to his company's product markets. His problem is that he simply cannot make sense of what it all means. His boss, the marketing director of Dashdish, has asked John to sort through all this information, which was previously on the marketing director's own desk, and to come up with a report that makes sense of it all. The marketing director's view is that there is plenty of information to go on, and that some of it must mean something for the company. John is not even sure what information his marketing director wants, and why, let alone what the format and precise content should be.

Having studied at the local university for a marketing qualification, which helped John secure his job as a marketing assistant, he is convinced that the company needs a properly designed marketing information system. He is aware that the marketing director feels it is simply a question of getting lots of information and then sifting through it. John feels his first priority will be to explain to his director the nature and purpose of a modern marketing information system in a company and the key facets in the design and operation of such a system. He has decided to write a brief report setting out his thoughts on these matters for his marketing director.

CASE STUDY QUESTION

Write the report.

REFERENCES

1 Kotler, P. and Keller, K. (2009), *Marketing Management*, 13th edn, London: Prentice-Hall, p. 107.

2 Gounaris, S.P., Panigayrakis, G.G. and Chatzipanagiotou. K.C. (2007), 'Measuring the effectiveness of marketing information systems: an empirically validated instrument', *Marketing Intelligence and Planning*, 25(6): 612–31.

3 Lancaster, G. and Massingham, L.C. (2002), *Essentials of Marketing*, 4th edn, Maidenhead: McGraw-Hill, pp. 175–6.

4 Lee, N. and Broderick, A.J. (2007), 'The past, present and future of observational research in marketing', *Qualitative Market Research*, 10(2): 121–9.

5 Senior, C., Smyth, H., Cooke, R., Shaw, R.L. and Peel, E. (2007), 'Mapping the mind for the modern market researcher', *Qualitative Market Research: An International Journal*, 10(2): 153–67.

6 Fugate, D.L. (2007), 'Neuromarketing; a layman's look at neuroscience and its potential application to marketing practice', *Journal of Consumer Marketing*, 24(7): 385–94.

7 Kenning, P., Plassman, H. and Ahlert, D. (2007), 'Applications of functional magnetic resonance imaging for marketing research', *Qualitative Market Research: An International Journal*, 10(2): 135–52.

8 Lancaster, G. (1993), 'Marketing and engineering: can there ever be synergy?', *Journal of Marketing Management*, 9: 141–53.

9 Galliers, R.D. and Sutherland, A.R. (2009), 'The evolving information systems strategy', in Galliers, R.D., Leidner, E.D. and Baker, B.S.H. (eds), *Strategic Information Management*, 2nd edn, pp. 31–60.