Environmental Scanning

A marketing-oriented firm looks outwards to the environment in which it operates, adapting to take advantage of emerging opportunities and to minimise potential threats. In this section we shall examine the marketing environment, and how to monitor it. In particular, we shall look at some of the major forces acting on companies, such as the economic, social, legal, physical and technological issues which affect corporate activities.

The marketing environment consists of the actors and forces that affect a company’s capability to operate effectively in providing products and services to its customers. It is useful to classify these forces into the micro-environment and the macro-environment. The micro-environment consists of the actors in the firm’s immediate environment that affect its capabilities to operate effectively in its chosen markets. The key actors are suppliers, distributors, customers and competitors.

The macro-environment consists of a number of broader forces that affect not only the company but also the other actors in the micro-environment. These can be grouped under economic, social, legal, physical and technological forces. These shape the character of the opportunities and threats facing a company, and yet are largely uncontrollable.

The process of monitoring and analysing the marketing environment of a company is called environmental scanning. Two key decisions that management need to make are what to scan and how to organise the activity. Clearly, in theory every event in the word has the potential to affect a company’s operations but to establish a scanning system which covers every conceivable force would be unmanageable. The first task, then, is to define a feasible range of forces that require monitoring. These are the potentially relevant environmental forces that have the most likelihood of affecting future business prospects. The second prerequisite for an effective scanning system is to design a system which provides a fast response to events that are only partially predictable and emerge as surprises and grow very rapidly. This is essential because of the increasing turbulence of the marketing environment. Ansoff proposes that environmental scanning monitors the company’s environment for signals of the development of strategic issues which can have an influence on company performance.

1 Line management functional managers (e.g. sales, marketing, purchasing) can be required to conduct environmental scanning in addition to their existing duties. This approach can falter because of line management resistance to the imposition of additional duties, and the lack of specialist research and analytical skills required of scanners.

2 Strategic planner environment scanning is made part of the strategic planner’s job. The drawback of this approach is that a head-office planner may not have the depth of understanding of a business unit’s operations to be able to do the job effectively.

3 Separate organisational unit regular and ad hoc scanning is conducted by a separate organisational unit and is responsible for disseminating relevant information to managers. General Electrics use such a system with the unit’s operations funded by the information recipients. The advantage is that there is a dedicated team concentrating their efforts on this important task. The disadvantage is that it is very costly and unlikely to be feasible except for large, profitable companies.
Joint line/general management teams a temporary planning team consisting of line and general (corporate) management may be set up to identify trends and issues that may have an impact on the business. Alternatively, an environment trend or issue may have emerged which requires closer scrutiny. A joint team may be set up to study its implications.

The most appropriate organisational arrangement for scanning will depend on the unique circumstances facing a firm. A judgement needs to be made regarding the costs and benefits of each alternative. The size and profitability of the company and the perceived degree of environment turbulence will be factors which impinge on this decision:

Brownlie (1987) suggests that a complete environment scanning system would perform the following:

1. Monitor trends, issues and events and study their implications.
2. Develop forecasts, scenarios and issues analysis as input to strategic decision-making.
3. Provide a focal point for the interpretation and analysis of environmental information identified by other people in the company.
4. Establish a library or database for environmental information.
5. Provide a group of internal experts on environmental affairs.
6. Disseminate information on the business environment through newsletters, reports and lectures.
7. Evaluate and revise the scanning system itself by applying new tools and procedures.

The benefits of formal environmental scanning were researched by Diffenbach (1983), who found that practitioners believed that it provided the following:

1. Better general awareness of and responsiveness to environment changes.
2. Better strategic planning and decision-making.
4. Improved industry and market analysis.
5. Better foreign investment and international marketing.
6. Improved resource allocation and diversification decisions.
7. Superior energy planning.

Environmental scanning provides the essential informational input to strategic fit between strategy, organisation and the environment. Marketing strategy should reflect the environment even if it means a fundamental organisation of operations.

(I) Problem 1.1 Environmental scanning procedure

Introductory comments

Like any other new programme, the scanning activity in a corporation evolves over time. There is no way to introduce a foolproof system from the beginning. If conditions are favourable, that is if there is an established system of strategic planning in place and the CEO is interested in a structured effort at scanning, the evolutionary period shortens, of course, but the state of the art may not permit the introduction of a fully developed system at the outset. Besides, behavioural and organisational constraints require that things be done over a period of time.

The level and type of scanning activity that a corporation undertakes should be custom designed, and a customised system takes time to emerge into a viable system.
Figure 1.1 Linking environmental scanning to corporate strategy.
Figure 1.1 shows the process by which environmental scanning is linked to marketing strategy. Listed below are the procedural steps which explain this relationship.

1. Keep a tab on broad trends appearing in the environment. Once the scope of environmental scanning is determined, broad trends in the chosen areas may be reviewed from time to time. For example, in the area of technology, trends in mastery of energy, material science, transportation capability, mechanisation and automation, communications and information processing, and control over natural life may be studied.

2. Determine the relevance of an environmental trend. Not everything happening in the environment may be relevant for a company. Therefore attempts must be made to select those trends in the environment which have significance for the company. There cannot be any hard-and-fast rules for making a distinction between ‘relevant’ and ‘irrelevant’. Consider, for example, the demise of the steam locomotive industry. Perhaps its constituents would have been more receptive to changes had these come from within the industry itself.

   I would hypothesise that if the new threat is very similar to a firm’s traditional way of meeting consumer needs, such as the turbine-powered automobile being similar to the internal combustion-powered automobile, then management often would perceive the new development as threatening. However, if it meets consumer needs in very different ways, it is less likely to be recognised at an early point. For instance, I suspect that one of the major threats to the future growth of commercial airlines is originating not with transportation companies, but rather with communication firms. I am thinking in particular of the US Telephone and Telegraph’s development of the ‘television phone’. As that product is perfected and as the costs of using it are lowered, it may eliminate completely the need for many business flights, and consequently substantially impact upon the future growth of airlines.

   Management’s creativity and farsightedness would play an important role in a company’s ability to pinpoint the relevant areas of concern. Described below is one way (for a large corporation) of identifying relevant trends in the environment:

   - Place a senior person in charge of scanning.
   - Identify a core list of about 100 relevant publications worldwide.
   - Assign these publications to volunteers within the company, one per person. Selected publications considered extremely important should be scanned by the scanning manager.
   - Each scanner reviews stories/articles/news items in the assigned publication that meet predetermined criteria, based on the company’s aims. Scanners might also review books, conference proceedings, lectures and presentations.
   - The scanned information is given a predetermined code. For example, a worldwide consumer goods company used the following codes: subject (e.g. politics); geography (e.g. Middle East); function (e.g. marketing); application (e.g. promotion, distribution); and ‘uniterm’ or keyword for organising the information. An abstract is prepared on the story, and so forth, in a few lines.
   - The abstract, along with the codes, is submitted to a scanning committee consisting of several managers, to determine the relevance in terms of effect on corporate/SBU/product market strategy. An additional relevance code is added at this time.
   - The codes and the abstract are computerised.
   - A newsletter is prepared to disseminate the information company-wide. Managers whose areas are directly affected by the information are encouraged to contact the scanning department for further analysis.

3. Study the impact of an environmental trend on a product/market. An environmental trend can pose either a threat or an opportunity for a company’s product/market; which one it will turn out to be must be studied. The task of determining the impact of a change is the responsibility of the SBU manager. Alternatively, it may be assigned to another executive who is supposedly familiar with the product/market. If the whole subject appears
controversial, it may be safer to have an ad hoc committee look into it, or even consultants, either internal or external, may be approached. There is a good chance that a manager who has been involved with a product or service for a good many years would look at any change as a threat. He or she may therefore avoid the issue by declaring the impact to be irrelevant at the outset. If such sabotage is feared, perhaps it would be better to rely on the committee or a consultant.

4 Forecast the direction of an environmental trend into the future. If an environmental trend does appear to have significance for a product/market, it is desirable to determine the course that the trend is likely to adopt in the future. In other words, attempts must be made at environmental forecasting.

5 Analyse the momentum of the product/market business with the environmental trend. Assuming the company takes no action, what will be the shape of the product/market performance in the midst of the environmental trend and its direction into the future? The impact of an environmental trend is usually gradual. While it is helpful to be ‘first’ to recognise freedom of action, a serious effort would have to be undertaken to ‘open up’ line managers to new ideas and to encourage innovation in their plans.

CONDUCTING ENVIRONMENTAL SCANNING

Following the steps in Table 1.1 an attempt is made here to illustrate how specific trends in the environment may be systematically scanned.

A literature search in the area of politics shows the following laws:

1 Eliminating inside directors.
2 Requiring companies to meet the cost of ‘unfriendly’ proxy contests.
3 Barring nominee ownership of stock.
4 Reducing a company’s right to fire workers at will.
5 Guarding worker privacy.
6 Mandating due-process procedures for grievances.
7 Disclosing lobbying efforts in detail.
8 Requiring that all ad claims be substantiated.
9 Publishing corporate actions that endanger workers or the environment.

Table 1.1 Systematic approach to environmental scanning

1 Pick up events in different environments (via literature search)
2 Delineate events of interest to the SBU in one or more of the following areas: production, labour, markets (household, business, government, foreign), finance, R&D. This could be achieved via trend-impact analysis of the events
3 Undertake cross-impact analysis of the events of interest
4 Relate the trends of the noted events to current SBU strategies in different areas
5 Select the trends which appear either to provide new opportunities or to pose threats
6 Undertake trends’ forecasts
   Wild card prediction
   Most probable occurrence
   Conservative estimate
7 Develop three scenarios for each trend based on three types of forecast
8 Pass on the information to strategists
9 Strategists may repeat steps 4–7 and develop more specific scenarios vis-à-vis different products/markets. These scenarios will then be incorporated in SBU strategy
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SCANNING TECHNIQUES

Environmental scanning has been implemented mainly with the use of conventional methodologies such as marketing research, economic indicators, demand forecasting and industry studies. But the use of such conventional techniques for environmental scanning has not been without pitfalls, for two major reasons. One, these techniques have failed to provide reliable insights into the future. As Ewing has said, ‘the most careful and sophisticated forecasts of market demand have gone awry, and there is no technical improvement in sight that promises to change matters’. Two, these techniques, in any event, provide a narrow view of the environment:

Direct competition . . . is only one of the basic dimensions of the company’s total strategic environment. The competitive audit must be augmented by assessment of the broader governmental, social, economic, ideological and other forces which all influence the company’s character, purpose and strategies over the longer term. (J. Thomas Cannon (1972), Auditing the competition environment, in John W. Bonge and Bruce P. Coleman (eds), Concepts of Corporate Strategy, New York: Macmillan Co., pp. 263–4.)

Discussed below are a variety of techniques which have been adapted for use in environmental scanning.

Extrapolation procedures. These procedures require the use of information from the past to explore the future. Obviously their use assumes that the future is some function of the past. There are a variety of extrapolation procedures which range from a simple estimate of the future (based on past information) to regression analysis.

Historical analogy. Where past data cannot be used to scan an environmental phenomenon, the phenomenon may be studied by establishing historical parallels with other phenomena. Assumed here is the availability of sufficient information on the other phenomena. The turning points in the progression of these phenomena become the guideposts for predicting the behaviour of the phenomenon under study.

Missing-link approach. The missing-link approach combines morphological analysis and the network method. Many developments and innovations that appear promising and marketable may be held back because something is missing. Under such circumstances this technique may be used to scan new trends to see if they provide answers to the missing links.

Model building. This technique emphasises construction of models following deductive or inductive procedures. Two types of models may be constructed: phenomenological models and analytic models. Phenomenological models identify trends as a basis for prediction but make no attempt to explain the underlying causes. Analytic models seek to identify the underlying causes of change so that future developments may be forecast on the basis of a knowledge of their causes.

Delphi technique. The Delphi technique is the systematic solicitation of expert opinion. Based on reiteration and feedback, this technique gathers opinions of a panel of experts on happenings in the environment.

Intuitive reasoning. This technique bases the future on the ‘rational feel’ of the scanner. Intuitive reasoning requires free thinking unconstrained by past experience and personal biases. This technique, therefore, may provide better results when used by freelance think tanks than when used by managers on the job.
Scenario building. This technique calls for developing a time-ordered sequence of events bearing a logical cause–effect relationship to one another. The ultimate forecast is based on multiple contingencies, each with its respective probability of occurrence.

Cross-impact matrices. When two different trends in the environment point towards conflicting futures, this technique may be used to study these trends simultaneously for their effect. As the name implies, this technique uses a two-dimensional matrix, arraying one trend along the rows and the other along the columns. Some of the features of cross-impact analyses that make them attractive for strategic planning are that (1) they can accommodate all types of eventuality (social or technological, quantitative or qualitative, and binary events or continuous functions); (2) they rapidly discriminate important from unimportant sequences of developments; and (3) the underlying rationale is fully retraceable from the analysis.

Morphological analysis. This technique requires identification of all possible ways to achieve an objective. For example, the technique can be employed to anticipate innovations and to develop the optimum configurations for a particular mission or task.

Network methods. There are two types of network method: contingency trees and relevance trees. A contingency tree is simply a graphical display of logical relationships among environmental trends that focuses on branch-points where several alternative outcomes are possible. A relevance tree is a logical network similar to a contingency tree, but drawn in a way that assigns degrees of importance to various environmental trends with reference to an outcome.

Problem – example

The marketing strategist of a consumer goods company may want to determine if these trends have any relevance for the company. To do so the marketing strategist will undertake trend-impact analysis. This will require the formation of a Delphi panel to determine the desirability (0–1) technical feasibility (0–1), probability of occurrence (0–1) and probable time of occurrence of each event listed above. The panel may also be asked to suggest the area(s) which may be affected by each event that is production, labour, markets (household, business, government, foreign), finance, or R&D.

The above information about an event may be studied by managers in areas which, according to the Delphi panel, are likely to be affected by the event. If their consensus is that the event is indeed important, the scanning may continue (see Table 1.2).

Next, cross-impact analysis may be undertaken. This type of analysis is planned to study the impact of an event on other events. Where events are mutually exclusive, such analysis may not be necessary. But where an event seems to reinforce or inhibit other events, the cross-impact analysis is highly desirable for uncovering the true strength of an event.

The cross-impact analysis amounts to studying the impact of an event (given its probability of occurrence) upon other events. The impact may be delineated either in qualitative terms (such as critical, major, significant, slight or none) or in quantitative terms in the form of probabilities.

Table 1.3 shows how cross-impact analysis may be undertaken. The cross-impact ratings or probabilities can best be determined with the help of another Delphi panel. To sharpen the analysis further, it may also be determined whether the impact of an event on other events will be felt immediately or after a certain number of years.
Table 1.2 Trend-impact analysis: an example

<table>
<thead>
<tr>
<th>Event</th>
<th>Requiring that all ad claims be substantiated</th>
<th>Reducing a company's right to fire workers at will</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirability</td>
<td>.8</td>
<td>.5</td>
</tr>
<tr>
<td>Feasibility</td>
<td>.6</td>
<td>.3</td>
</tr>
<tr>
<td>Probability of occurrence</td>
<td>.5</td>
<td>.1</td>
</tr>
<tr>
<td>Probable time of occurrence</td>
<td>2003</td>
<td>2010</td>
</tr>
<tr>
<td>Area(s) impacted</td>
<td>Household markets</td>
<td>Labour</td>
</tr>
<tr>
<td></td>
<td>Business markets</td>
<td>Finance</td>
</tr>
<tr>
<td></td>
<td>Government markets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research and Development (R&amp;D)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Production</td>
<td></td>
</tr>
<tr>
<td>Decision</td>
<td>Carry on scanning</td>
<td>Drop from further consideration</td>
</tr>
</tbody>
</table>

Note: Two to three rounds of Delphi would be needed to arrive at the above probabilities.

Table 1.3 Cross-impact analysis: an example

<table>
<thead>
<tr>
<th>Event</th>
<th>Probability of occurrence</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Eliminating inside directors</td>
<td>.6</td>
<td>a</td>
</tr>
<tr>
<td>(b) Requiring companies to meet the cost of 'unfriendly' proxy contests</td>
<td>.3</td>
<td>.3*</td>
</tr>
<tr>
<td>(c) Barring nominee ownership of stock</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>(d) Reducing a company's right to fire workers at will</td>
<td>.1</td>
<td></td>
</tr>
<tr>
<td>(e) Guarding worker privacy</td>
<td>.4</td>
<td></td>
</tr>
<tr>
<td>(f) Mandating due-process procedures for grievances</td>
<td>.3</td>
<td></td>
</tr>
<tr>
<td>(g) Disclosing lobbying efforts in detail</td>
<td>.4</td>
<td></td>
</tr>
<tr>
<td>(h) Requiring that all ad claims be substantiated</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>(i) Publishing corporate actions that endanger workers or the environment</td>
<td>.4</td>
<td>.7**</td>
</tr>
</tbody>
</table>

Notes
* This means that elimination of inside directors has no effect on the probability of event (b).
** This means that if publishing corporate actions that endanger workers or the environment occurs (probability .4), the probability of requiring that all ad claims be substantiated increases from .5 to .7.
Environmental Scanning

The cross-impact analysis provides the ‘time’ probability of occurrence of an event and indicates other key events which may be monitored to keep track of the first event. Cross-impact analysis is more useful for project-level scanning than for general scanning.

To relate the environmental trends to strategy, consider the following assumed environmental trends and strategies of a cigarette manufacturer.

<table>
<thead>
<tr>
<th>Trends</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>T₁</td>
<td>Requiring that all ad claims be substantiated</td>
</tr>
<tr>
<td>T₂</td>
<td>Publishing corporate actions that endanger workers or the environment</td>
</tr>
<tr>
<td>T₃</td>
<td>Disclosing lobbying efforts in detail</td>
</tr>
<tr>
<td>T₄</td>
<td>Reducing a company's right to fire workers at will</td>
</tr>
<tr>
<td>T₅</td>
<td>Eliminating inside directors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategies</th>
<th>S₁ Heavy emphasis on advertising, using emotional appeals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S₂ Seasonal adjustments in labour force for agricultural operations of the company</td>
</tr>
<tr>
<td></td>
<td>S₃ Regular lobbying effort against further legislation imposing restrictions on the cigarette industry</td>
</tr>
<tr>
<td></td>
<td>S₄ Minimum number of outside directors on the board</td>
</tr>
</tbody>
</table>

The analysis in Table 1.4 shows that strategy S₁, heavy emphasis on advertising, is most susceptible and requires immediate management action. Among the trends, trend T₅, eliminating inside directors, will have the most positive overall impact. Trends T₁ and T₂, requiring that all ad claims be substantiated and publishing corporate actions that endanger workers or the environment, will have a devastating impact. This type of analysis indicates where management concern and action should be directed.

Table 1.4 Use of matrix to determine the impact of selected trends on different corporate strategies

<table>
<thead>
<tr>
<th>Trends</th>
<th>Strategies</th>
<th>Impact (I₁)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S₁</td>
<td>S₂</td>
</tr>
<tr>
<td>T₁</td>
<td>-8</td>
<td>0</td>
</tr>
<tr>
<td>T₂</td>
<td>-4</td>
<td>-2</td>
</tr>
<tr>
<td>T₃</td>
<td>0</td>
<td>+4</td>
</tr>
<tr>
<td>T₄</td>
<td>0</td>
<td>-4</td>
</tr>
<tr>
<td>T₅</td>
<td>-2</td>
<td>+6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact(I₂)</th>
<th>+</th>
<th>-</th>
<th>4</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>14</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>

(Table 1.4 continued)
Thus, it will be desirable to undertake forecasts of trends T₁ and T₂. The forecasts may predict when the legislation will be passed, what the major provisions of the legislation will be, and so forth. Three different forecasts may be obtained:

1. Extremely unfavourable legislation.
2. Most probable legislation.
3. Most favourable legislation.

Three different scenarios (using three types of forecast) may be developed, indicating the impact of each trend. This information may then be passed on to product/market managers for action. Product/market managers may repeat steps 4–7 (see Table 1.1) to study the selected trend(s) in depth.

Questions

1. Define both areas and discuss the link between the concepts of environmental scanning and strategic planning.
2. Give and explain some examples of classic market opportunity analyses which have recognised key environmental trends.
3. What are the organisational behaviour implications of environmental scanning, especially when dealing with (1) responsibility; (2) key tasks to be implemented; and (3) staff training and motivation?
4. Describe and comment on the trend impact analysis approach as well as on the Delphi technique.

(I) Problem 1.2 Assessing the social environment

Introductory comments

The ultimate test of a business is its social relevance. This is particularly true in a society where survival needs are already met. It therefore behoves the strategic planner to
be familiar with emerging social trends and concerns. The relevance of the social environment to a particular business will of course vary depending on the nature of the business. For a technologically oriented business, the scanning of the social environment will be limited to aspects of pollution control and environmental safety. For a consumer products company, however, the impact of the social environment will go much further.

An important aspect of the business environment is the values people hold. In recent years changes in these values have stimulated massive regulations, deep criticisms, new demands and challenges of the very foundation on which business rests. For example, a substantial percentage of people in the USA are less and less willing to accept the impartial operation of the market mechanism as the best way to allocate resources. They expect government to intervene on their behalf. Another interesting value shift is what Daniel Bell calls the Revolution of Rising Entitlements, challenging the traditional concept of egalitarianism. Equality had meant that conditions should permit individuals, whatever their origins, to make a life on the basis of ability and character. It was believed that everyone should have an equal place at 'the starting line'. More recently the emphasis has shifted to the finish line, a guarantee of an equal outcome for all. A central tenet of the new egalitarianism argues that because people are born with different natural abilities and are raised under different circumstances, not everyone approaches the starting line equally. In this light, it is argued, fairness and justice necessitate equalisation of results.

Observers have noted many other value shifts that directly or indirectly influence business. For example, people today seek self-gratification now rather than later. They want the good things of life immediately. They want to lead lives that are continuously improving in quality. There is a growing attitude of cynicism towards authority. There seems to be an erosion of that part of the Protestant ethic that motivates people to high standards of work performance. People seem to want a more comfortable and less risky life. People are no longer willing to accept traditional rights of property ownership but want to influence how property is used. Profit is no longer universally accepted as the end purpose of business. Society is coming more and more to expect that societal interests be considered, as well as business self-interest, in pursuing profit objectives. Some observers see in such trends a serious erosion of the fundamental institutional values of the classical free enterprise system.

Information on social trends may be derived from published sources. The impact of social trends on a particular business can be studied in-house or with the help of outside consultants. A number of consulting firms specialise in making this kind of study. Table 1.5 shows 31 social trends which, according to the firm of Yankelovich, Skelley and White, Inc., will have a tremendous effect on business in the coming years. One of these, female careerism (trend 30 in Table 1.5), is of particular interest to the retail industry. This structural social change leads retailers to ask such questions as: Where does the working wife like to do most of her shopping? What type of store does she prefer? How fashion-conscious is she? What sources of information does she use before she makes a purchase? What kinds of service does she expect retailers to provide?

A proprietary study on the subject (conducted for a major department store) with which the author was associated brought out interesting findings. It was found that in general, working wives are better educated, are more experienced metropolitans and have more sophisticated tastes than wives who do not work outside the home. Their shopping behaviour is considerably different from that of the traditional woman shopper.
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Table 1.5 Social trends having marketing significance

Psychology of affluence trends, reflecting the increasing assumption that the essentials of economic survival are assured, leading to a focus on having more or doing more to improve the quality of living.

Trends
1. Personalisation
2. Physical self-enhancement
3. Physical fitness and well-being
4. Social/cultural self-expression
5. Personal creativity
6. Anti-materialism
7. Meaningful work

Anti-functionalism trends, reflecting reaction to the emphasis on the functional and 'scientific', seen as leading to drabness and boredom in everyday life.

Trends
8. Mysticism
9. Sensuousness
10. New romanticism
11. Introspection
12. Novelty and change
13. Beauty in the home

Reaction against complexity trends, reflecting the belief that life has become excessively complicated, that the individual has lost control of his/her destiny, and that there is much to be gained by returning to a more natural and more simple style of life.

Trends
14. Return to nature
15. Simplification
16. Anti-bigness
17. Scientism and technology
18. Ethnic orientation
19. Local community involvement

Trends related to the weakening of the 'Protestant ethic', reflecting a questioning of a value system, termed the 'Protestant ethic' by sociologists, which, put very simply, is based on the belief that ambition, striving, hard work, self-sufficiency, self-denial and other familiar virtues will lead to a successful life.

Trends
20. Living for today
21. Hedonism
22. Away from self-improvement
23. Non-institutional religion
24. Liberal sex attitudes
25. Blurring of the sexes
26. Acceptance of drugs

Trends reflecting permissiveness in child rearing, deriving from the psychological guidelines which have been widely used in the upbringing of our current youth population. These guidelines were based largely on concern about the negative after-effects of a rigid, demanding, punishment-oriented childhood.

Trends
27. Anti-hypocrisy
28. Rejection of authority
29. Tolerance for chaos and disorder
30. Female careerism
31. Familism
The working-wife market cannot be served by a store that is ‘all things to all customers’. It is predicted that a new kind of store is on the horizon which may emerge either within a department store or as a separate institution to cater for this market. The working wife was found to prefer suburban stores to downtown stores even though she may be working downtown. She is likely to be interested in the latest fashions and looks for clothing that is stylish but practical on the job. The above findings bear heavily on retailers’ strategies in such areas as merchandising, the role of the suburban store, store positioning, fashion orientation, promotion and store services.

Let us take two additional trends – physical fitness and well-being (trend 3 in Table 1.5) and meaningful work (trend 7) – and examine their impact on marketing strategy.

**Physical fitness and well-being**

Salads and fish are replacing the traditional American dinner of meat and potatoes. Increasing varieties of decaffeinated coffee and tea and substitutes for sugar and salt are crowding supermarket shelves. Shoppers are reading the small print to check for artificial ingredients in foods and beverages they once bought without a thought. Smoking is finally declining. Manufacturers and retailers of natural foods are building a healthy ‘health industry’ in the midst of a slow economy.

The dramatic new awareness of health is prompting these changes. The desire to feel better, look younger and live longer exerts a powerful influence on what people put into their bodies, and this strong force is now moving against a well-entrenched habit that affects millions and dates back to biblical times – the consumption of too much alcohol.

Health substitutes for alcoholic beverages, labelled ‘dealcoholised’, are now being offered to US consumers. For some time, gourmet food shops have stocked champagne-like bottles of carbonated grape juice and cans containing a not-fully brewed mixture of water, malt, corn, yeast and hops. Except for the packaging, these alcohol-free imitations failed to resemble wine and beer, especially in the crucial area of taste. The new dealcoholised beverages, however, are fully fermented or brewed before their alcohol is separated out – either by pressure or heat – to below an unnoticeable 0.5 per cent, which is the federal maximum before classifying a drink as alcoholic. The taste and body of the beverages match that of their former alcoholised selves.

This 0.5 per cent level is so low that a drinker would need to consume 24 glasses of dealcoholised wine or eight cans of dealcoholised beer to obtain the same amount of alcohol as in one 4-ounce glass of regular wine or one 12-ounce can of regular beer. Thus the drinker avoids not only intoxication but also worthless calories, as a regular glass of wine or beer has about 150 calories, while their dealcoholised copies contain about 40–60 calories respectively. And their prices are the same.

Introduced in Europe around 2001, dealcoholised wines are just now entering the USA.

**Meaningful work**

The following changes are producing a new challenge at work. First, people want good jobs, not make-work. Second, workers want their individual rights to be respected. Third, the concept of the professional appears to be under siege. It is increasingly
difficult for professionals to maintain their special status in a society that is becoming more knowledge-oriented, more bureaucratic and more participatory. The growth of the two-income family is also blurring status distinctions, as it has brought a new degree of affluence to the so-called working class. For example, a secretary and her labourer husband can have a family income of £30,000 a year, while a family headed by a sole-earner college professor or attorney can have an income well under that. Fourth, the oncoming generation has doubts about the ideals of efficiency. They are unwilling to pay the crushing price of loss of pride, mind-killing monotony, dehumanisation and stress diseases in return for the highest wages in history. Fifth, today a woman’s place can be wherever she wants it to be, and so a greater number of women are expected to find their place in the labour market.

Problem

LIFESPAN is a new company in the insurance market in Scotland. The company is a niche player pursuing specific types of segment (i.e. work-related insurance services) as well as developing a range of new financial services products, such as the ‘housewife insurance plan’ which takes into account the new life demands (e.g. dual-income families, the difficulties associated with the fulfilment of housework chores and duties, etc.) and work/social pressures which affect many layers of the population. Mike O’Leary, the marketing manager of the company, is considering the implementation of a marketing scanning study to take into account social trends which will impact directly on his strategic marketing plans.

Questions

1. What are the strategic implications derived from the main source trends which will impact on LIFESPAN with regard to the job market and working patterns?
2. What is your assessment of the future developments linked with the women’s job market, their employment situation as well as their specific needs for life insurance?
3. What lessons can LIFESPAN learn from the environmental scanning exercise with regard to equal employment opportunities and group coverage?

(M) Problem 1.3 Scanning and forecasting methods

Introductory comments

Market measurement is an activity of critical importance for a wide range of decisions. Market-potential estimates and industry and company sales forecasts are essential for the development of corporate marketing strategies and produce objectives. Middle-management decisions regarding the size and allocation of marketing expenditures depend heavily on sales forecasts and on the relationship between forecasts and measures of profitability and productivity. By understanding the purpose and assumptions behind a given market measurement, a manager will find it easier to specify the kind of information needed in a given situation and to understand the degree of reliability that should be placed on a given market-measurement estimate.

Additionally, managers should be aware of the available data sources that can be used to develop market-measurement estimates. When environmental changes
can be expected to create a shift in the historical pattern of sales, then time-series models are likely to prove unsatisfactory. In such situations, managers are more likely to use forecasting techniques that link sales to one or more factors thought to cause or influence sales. Descriptive models such as multiple-regression models are used when a number of factors have an impact on sales. Multiple-regression forecasts allow managers to incorporate the expected effects of any controllable marketing variables likely to be significant when one is forecasting company sales. The goal is to assess the relationship between these controllable variables and sales. Can the variation in sales for different time periods be explained by levels of price, promotion, distribution and so on, in those time periods? A multiple-regression model, with sales as the dependent variable and the controllable factors as predictor or independent variables, will address this question.

**JUDGEMENTAL APPROACHES**

Frequently, it is not possible to rely on statistical approaches to forecasting. Time-series methods may be inappropriate because of wide fluctuations in sales or because of anticipated changes in trends. Regression methods may not be feasible because of a lack of historical data or because of management’s inability to determine (or even identify) causal factors. The judgemental approach may be management’s only possible avenue for forecasting in these situations.

Even when statistical estimates are available, managers may want to use judgement to supplement these approaches because even the most sophisticated statistical models cannot anticipate all the potential external factors that can influence sales (such as strikes at customers’ facilities or major competitive innovations). Two prevalent judgemental techniques are jury of executive opinion and Delphi techniques. The jury of executives opinion invites the input from senior-level executives. In some cases the executives are asked to give an optimistic, pessimistic and most probable level of sales for some future period. The forecasting managers first determine a forecast for each executive and then combine the levels of all the executives. The Delphi technique asks members of a team to submit their forecasts and the assumptions behind the forecasts. These are then reviewed by a team leader and given back to the participants, with a summary of the first round, for a second round of forecasts. When an acceptable consensus is reached the process stops.

**INTERPRETING THE FORECAST**

In evaluating the managerial implications of a sales forecast, managers should be fully aware of both the sensitivity of forecast results to slight changes in forecast assumptions or techniques and the costs of forecasting errors.

**SENSITIVITY ANALYSIS**

If several techniques give essentially the same results, the reliability of a forecast should be greater. Accordingly, some firms develop parallel forecasts based on alternative techniques. Knowing how different techniques or assumptions lead to alternative estimates
enables a manager to determine how sensitive the forecast is to a change in these factors. When forecasts are highly sensitive, managers should expect greater imprecision and should closely monitor the environment to find out which model and which assumptions most closely approximate reality.

**THE COSTS OF FORECAST ERRORS**

Companies that make or sell products with long lifetimes and steady sales are less concerned with the costs of forecast errors because the forecasts in these cases are likely to be close to actual sales. However, when the sales forecast given to management has a large standard error, managers need to consider the costs of overestimating and underestimating sales.

As Table 1.6 indicates, different kinds of consequence are associated with overestimating and underestimating company sales. For some firms, the cost of holding excess inventory may be extremely high (perhaps because the product is perishable), whereas the amount of sales lost because of delayed shipments is very low (perhaps because the company has loyal customers). Accordingly, if a firm is in that situation, management will be more willing to risk underestimation than overestimation. This willingness to risk underestimation occurs because the cost of excess inventory resulting from excess production will outweigh the lost revenue from an inadequate level of production. Because the costs of overestimation are greater for that firm, managers will probably want to base decisions on a forecast that is more conservative than the sales forecast.

**Problems**

Consider Table 1.6(a), which presents data on market shares for a leading brand of biscuits. Notice that market share varies from a low of 46.61 per cent in period 14 to a high of 61.08 per cent in period 21. The factors used to explain the variation in sales are relative levels of price, distribution and advertising. The relative levels are the ratio

<table>
<thead>
<tr>
<th>Table 1.6 Possible results of company sales forecast errors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results of overestimation</strong></td>
</tr>
<tr>
<td>Excess capacity leading to layoffs, loss of skilled labour</td>
</tr>
<tr>
<td>Price cuts or additional marketing expenses to move product</td>
</tr>
<tr>
<td>Distributor ill-will because of excess distributor inventories</td>
</tr>
<tr>
<td>Inventory costs</td>
</tr>
<tr>
<td>Cash flow problems and cost of capital tied up in finished goods, components, raw materials</td>
</tr>
<tr>
<td>Technical obsolescence or damage</td>
</tr>
<tr>
<td>Storage or warehousing costs</td>
</tr>
<tr>
<td><strong>Results of underestimation</strong></td>
</tr>
<tr>
<td>Lost sales or customer goodwill</td>
</tr>
<tr>
<td>Overtime costs</td>
</tr>
<tr>
<td>Costs of expediting shipments</td>
</tr>
<tr>
<td>Reduced quality control because of reduced maintenance of machinery at full production capacity</td>
</tr>
<tr>
<td>Production of bottlenecks because of lack of material and parts</td>
</tr>
</tbody>
</table>
of the company's level to the industry average. The multiple-regression model based on the data in Table 1.6(a) is

\[
\text{Market share} = .61 - 1.11 \text{ (relative price)} + .97 \text{ (relative distribution)} + .01 \text{ (relative advertising)}
\]

Although many other factors could explain why market share varies from one period to another, the model explains greater than 60 per cent of the variation in market share, based solely on relative levels of price, distribution and advertising.

Additionally, as in any statistical forecast, the company was able to determine the standard error of the forecast – in this case .025; that is, there is always some imprecision in terms of past sales and past forecasts. Two-thirds of the time the forecast estimate of sales will be within one standard error (in this case .025) of actual market share; 95 per cent of the time, forecasted share will be within two standard errors (in this case .05) of the actual market share.

Multiple-regression models allow managers to predict values of the dependent variable (e.g. market share) for different levels of the predictor variables (e.g. price, distribution and advertising). If we set the relative price at .95, relative distribution at 1.06, and relative advertising at 1.0, the estimated level of market share, based on the multiple-regression model described above, is:

\[
\text{Market share} = .61 - 1.11 (.95) + .97 (1.06) + .01 (1.0)
\]

\[
= .5937
\]
When constructing and interpreting multiple-regression models, managers need to address a number of important questions in order to assess the reliability of the regression forecasts. Two of the more important questions regarding multiple-regression models are:

- Have any important factors been left out of the model?
- Are the independent or predictor variables correlated among themselves?

The first question deals with the specification of the model. If any factors that have a significant impact on sales have been left out of the model, the impact will not be included in the forecast and, therefore, the forecast can be seriously biased.

The second question deals with the manager’s ability to isolate the effects of predictor variables on the dependent variable. Consider the multiple-regression model for estimating the market shares for the biscuit manufacturer. The coefficients for price, distribution and advertising are 1.11, .97 and .01 respectively. There is a temptation to conclude that distribution is highly related to changes in market share and advertising is not. However, if the two variables, distribution and advertising, are themselves highly correlated, one cannot make this conclusion.

Assume that a manager has been given a company sales forecast of 200,000 units with a standard error of 10,000 units. Statistical theory tells us that there is a 95 per cent chance that the actual level sales will be within two standard errors. Thus, there is a 95 per cent chance that sales will be within the range of 180,000–220,000 units. If the manager sets production at the lower end – 180,000 units – and demand is higher, the underestimation will lead to stockouts or shortages of the product. If the manager sets production at the high end – 220,000 units – and demand is less, the overestimation will lead to excess inventory. Either of these consequences adds to the cost of the products. In some industries characterised by highly volatile demand, like the fashion industry, the costs of stockouts for underestimation and markdowns for overestimation can actually exceed the original cost of manufacturing.

**Questions**

1. What are some of the key issues that you need to address in order to evaluate the reliability of regression forecasts?
2. Comment of the methodology behind these two judgemental forecasting methods: jury of executive opinion and Delphi technique.
3. Discuss the different kinds of consequences associated with overestimating and underestimating company sales.

**Introductory comments**

Analysing large databases has become known as *data mining*, and businesses hope it will allow them to boost sales and profits by better understanding their customers. The analysis of databases is not new – what is new and challenging is the extraordinary size of these databases.

The availability of huge databases began with scanner purchase data. Estimates suggest that marketing managers in packaged goods companies are inundated with 100 to 1,000 times more bits of data than even a few years ago because of the adoption
of scanner technology in their channels of distribution. Some data mining techniques also arose in response to ‘database marketing’ or ‘direct marketing’ (e.g. by catalogue vendors or coupon distribution providers) in which a company is trying to form relationships with its individual customers, as marketing attempts to proceed from ‘mass’ (one media message for all potential buyers) to ‘segments’ (some targeting and positioning differences) to ‘one-to-one’ marketing. In order to achieve such tailored market offerings, a company has to know a lot about its customers, hence the data contain many pieces of information on each of the company’s many customers.

Traditionally, a company’s database would have contained only current business information, but many now contain historical information as well. These ‘data warehouses’ literally dwarf those available even a few years ago. For example, Wal-Mart has contracted with NCR Corporation to build a data warehouse with 24 terabytes (1 terabyte = 1,000 gigabytes) of data storage, which will make it the world’s largest data warehouse. The system will provide information about each of Wal-Mart’s 3,000 plus stores in multiple countries. Wal-Mart plans to use the information to select products that need replenishment, analyse seasonal buying patterns, examine customer buying trends, select markdowns, and react to merchandise volume and movement.

In response to the increasingly massive data sets, firms have been working to create increasingly sophisticated data mining technologies (hardware and software) to analyse the data. Data mining uses massively parallel processing (MPP) and symmetric multi-processing (SMP) supercomputer technologies (during which multiple data points and sub-routines may be processing simultaneously, compared with old-fashioned ‘serial’ processing, in which one datum is processed after another). These huge machines support ‘relational’ database programs that can slice massive amounts of data into dozens of smaller, more manageable pools of information.

Sometimes these intensive approaches are applied to databases that are being analysed with fairly traditional statistical techniques. For example, regression is still a premier analytical tool, because many predictors can be used to capture complex consumer decision-making and market behaviour – forecasting sales as a function of season, price, promotions, sales force, competitor factors and delivery delays. Other popular techniques of data mining include cluster analysis for segmentation and neural networks. Businesses regularly use data mining analytical tools to mathematically model customers who respond to their promotional campaigns versus those who do not. The effects of direct mailing efforts, for example, are easily measured and compared as a function of customer information (demographics such as age, household size, income) and purchase behaviour (past buying history, cross-sales). Data mining can also be used to measure incremental business (additional traffic, sales, profits) that may be directly attributed to a recent promotion by deliberately withholding the promotional mailing from a ‘control’ group ‘experimental’ techniques.

In addition to standard techniques being applied to these huge data sets, marketing research methodologists are creating techniques and software especially for data mining analyses of large data sets. Sales of such customer management software are currently growing at five times the rate of the overall software market, as managers struggle to track every encounter with each customer, to facilitate call-centre interactions between customers and customer service representatives, and to manage internal customers, for example, one’s sales force. Some of these relational database systems include NCR’s Teradata system or Unix or Windows NT machines, IBM’s Intelligent
Problems in Marketing

Miner and SAS’s Enterprise Miner. Other software companies offer ‘content aggregator’ services that synthesise multiple databases – company financial information, histories, executive profiles and the like.

As an illustration of a data mining exercise, Farmers Insurance used IBM’s DecisionEdge software to look at the 200 pieces of information the company maintained on its database of 10 million automobile insurance policy owners. Think of a sports car owner and ‘you probably imagine a twenty-something single guy flaming down the highway in his hot rod’. This profile fit many of its customers, but the data mining exercise identified another segment of sports car owner – married baby boomers with kids and more than one car. These customers produced fewer claims, yet had been paying the same sports-car surcharge. With this information in hand, Farmers could charge them less, providing greater value and customer satisfaction.

There is no question that the explosion in databases, computer hardware and software for accessing those databases, and the World Wide Web are all changing the way marketing intelligence is obtained. Not only are more companies building DSSs, but those that have them are becoming more sophisticated in using them for general business and competitive intelligence. This, in turn, has produced some changes in the organisation of the marketing intelligence function. One change has been the emergence of the position of chief information officer, or CIO.

The CIO’s major role is to run the company’s information and computer systems like a business. The CIO serves as the liaison between the firm’s top management and its information systems department. He or she has the responsibility for planning, coordinating and controlling the use of the firm’s information resources, and is much more concerned with the firm’s outlook than with the daily activities of the department. CIOs typically know more about the business in general than do the managers of the information systems department, who are often more technically knowledgeable. In many cases, the managers of the information systems department will report directly to the CIO. Information systems are not intended to be simply data warehouses – the management of information is ideally designed as an electronic library that allows all employees access to the ‘firm’s collective wisdom’.

FROM ACCOUNTS TO CUSTOMERS

The data extracted from the customer information system had one row per account. This reflects the usual product-centric organisation of a bank where managers are responsible for the profitability of particular products rather than the profitability of customers or households. The best next offer project required pivoting the data to build customer-centric models.

To be useful for cross-selling, the 1.2 million account-level records extracted from the customer information system had to be transformed into around a quarter of a million household-level records. This was accomplished using SAS to group all the accounts for a given tax identification number and then transpose them into a single customer record with a set of columns for each account type. In cases where the bank was aware that multiple members of a household had accounts, one of them was chosen as the primary ID (identifiers) for the household and used to identify all household members. This allowed each newly created customer record to represent all accounts belonging to an entire household. The new customer record contains a count
Environmental Scanning

for each product, indicating how many accounts of that type the household has (zero in most cases) along with the associated balances. The resulting table had many more fields than the original extract of account data. The abbreviated Table 1.7 gives a feel for the kinds of variables that were available as inputs to the model.

**Table 1.7** Illustrative sample of variables used as input to models

<table>
<thead>
<tr>
<th>Household-level field descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account county</td>
</tr>
<tr>
<td>Address state</td>
</tr>
<tr>
<td>Age of latest asset management product</td>
</tr>
<tr>
<td>Age of latest business brokerage product</td>
</tr>
<tr>
<td>Age of latest business credit card</td>
</tr>
<tr>
<td>Age of latest business time deposit</td>
</tr>
<tr>
<td>Age of latest business interest checking</td>
</tr>
<tr>
<td>Age of latest business instalment direct loan</td>
</tr>
<tr>
<td>Age of latest business loan</td>
</tr>
<tr>
<td>Age of latest business credit line</td>
</tr>
</tbody>
</table>

The variables whose names start with age say how many months the customer has had an account of this type.

This information is derived from the account open date.

America Online user flag

Acquired from

Time with bank

Credit card declined flag

Express check card #1 flag

Express check card #2 flag

Bank territory

Bank county

Months since express check card was used

Bank employee household

**Household-level field descriptions**

Number of people in household

Microvision household description code

Premier (high value) household

Time between becoming bank customer and going online (months)

True if delay greater than 30 days

Number of credits

Number of debits

Months online

Number of products held

Pseudo tax ID (real tax IDs not used to protect customer privacy)

Count of asset management products

Count of business brokerage products

Count of business credit cards

Count of business time deposit accounts

Count of business interest checking accounts

Banking products fall into families such as ‘credit cards’ or ‘demand deposit accounts’. The variables starting with the word ‘counts’ are derived variables that say how many the customer has in each account family.

Uses Quicken

Number of balance inquiries last 60 days – card one

(Table 1.7 continued)
Note that many of the variables used as inputs to the model-building process are derived variables that were not part of the original extract. Some values, such as length of tenure, have been binned into ranges. Others, such as total balance, are values calculated from the original fields. A few are flags added to reflect groups of people that the bank considered interesting, such as people who tried online banking within 30 days of becoming a bank customer and people whose total deposits with the bank were over $50,000.

**DEFINING THE PRODUCTS TO BE OFFERED**

The customer information system recognised several hundred different products, many of which are simply small variations on a theme. This level of product differentiation is too detailed for the kind of marketing campaign we were supporting. For example, the bank might make someone an offer of a savings account without trying to determine which of several variants would be most likely to appeal. These variants offer
different interest rates based on total balances at the bank, other types of account, and so on. In fact, there are business rules for determining which savings account is most appropriate for a given customer – data mining can figure out that a savings account is appropriate and then business rules take over to determine which one in particular.

Often the number of product codes is often dauntingly large. And, when there are too many codes (more than a few dozen) it is difficult to develop good cross-sell models – there are simply too few instances for each one. Often, many of the codes refer to the same type of thing, such as a current account or a home mortgage, with just minor (from the point of view of marketing) differences between them. Look for a hierarchy that describes the products at the right level.

There is a budgeting application that rolls up account types into a hierarchy of product category, account type and subtype. The four major categories are deposit account, loan, service and investment. The marketing people decided that, with a few modifications, the account-type level of this pre-existing hierarchy would serve well. From a marketing perspective, some of the account types are essentially the same, such as certificates of deposit (CDs) and time deposits (TDs). These account types were combined into a single category.

The product categories were used as the target variables for modelling. That is, a model predicted who would have CD/TD, or home mortgages, or whatever. The individual product types were retained as input variables. Table 1.8 shows the 45 product types used for the best next offer model. Of these, 25 products are ones that may be offered to a customer as part of this campaign. Information on the remaining (business-oriented) account types are used only as input variables when building the models.

**Problem – example**

*Pillsbury*’s internal network allows its employees in over 70 countries access to data of several kinds, including consumer feedback that has been logged into a massive database (based on 3,500 calls a day to the 800 number printed on every Pillsbury product), manufacturing (testing equipment at new plants, statistics on production quality and packaging) and so on. Any employee, at a plant or at a sales call pitching new products to a grocer, can access the company’s data.

*Hallmarks Cards* assists its 15,000 store managers in ‘stock-keeping unit (SKU) optimisation’, the allocation of store square footage to its 40,000 products. It can determine which cards and gifts are selling on any given day at any given retail outlet.

**CONSUMER INSIGHTS GAINED FROM DATA MINING**

Loyalty cards, such as those offered at supermarket retailers, offer consumers discounted prices and coupon incentives. In the past ten years, more than 100 million loyalty cards and key tags have been issued: 30 per cent of supermarket customers have them and, of those, 70 per cent use them. Companies know that all customers are not equal, and loyalty cards enable one-to-one marketing, customising the shopping
Table 1.8: Product types used in the best next offer model

<table>
<thead>
<tr>
<th>Product code</th>
<th>Product description</th>
<th>To be modelled</th>
<th>Account holders</th>
<th>Combine with</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM</td>
<td>Asset management</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBK</td>
<td>Business brokerage</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCC</td>
<td>Business credit card</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCD</td>
<td>Business certificate of deposit</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIC</td>
<td>Business interest bearing checking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIL</td>
<td>Bill pay</td>
<td>Yes</td>
<td>106,949</td>
<td></td>
</tr>
<tr>
<td>BLD</td>
<td>Business loan division</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLN</td>
<td>Business line of credit</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMM</td>
<td>Business money market</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMR</td>
<td>Business market rate</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMS</td>
<td>Business money market savings</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BNC</td>
<td>Business non-interest checking</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSV</td>
<td>Business savings</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>Credit card</td>
<td>Yes</td>
<td>154,738</td>
<td></td>
</tr>
<tr>
<td>CD</td>
<td>Certificate of deposit</td>
<td>Yes</td>
<td>10,646</td>
<td></td>
</tr>
<tr>
<td>CUS</td>
<td>Custody</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DLR</td>
<td>Instalment dealer loans</td>
<td>Yes</td>
<td>2,693</td>
<td></td>
</tr>
<tr>
<td>ELC</td>
<td>Equity line of credit</td>
<td>Yes</td>
<td>10,952</td>
<td></td>
</tr>
<tr>
<td>EXL</td>
<td>Express lease</td>
<td>Yes</td>
<td>2,792</td>
<td></td>
</tr>
<tr>
<td>GRP</td>
<td>Group retirement programmes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUR</td>
<td>Wholesale loan guarantors</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IBC</td>
<td>Interest bearing checking</td>
<td>Yes</td>
<td>40,233</td>
<td></td>
</tr>
<tr>
<td>IL</td>
<td>Instalment direct loans</td>
<td>Yes</td>
<td>12,545</td>
<td></td>
</tr>
<tr>
<td>IRA</td>
<td>Individual retirement account</td>
<td>Yes</td>
<td>13,074</td>
<td></td>
</tr>
<tr>
<td>IRB</td>
<td>Individual retirement account</td>
<td>Yes</td>
<td>2,045</td>
<td></td>
</tr>
<tr>
<td>IRF</td>
<td>Individual retirement account</td>
<td>Yes</td>
<td>5,339</td>
<td></td>
</tr>
<tr>
<td>LOC</td>
<td>Line of credit</td>
<td>Yes</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>ML2</td>
<td>Second mortgage</td>
<td>Yes</td>
<td>519</td>
<td></td>
</tr>
<tr>
<td>MMA</td>
<td>Money market access</td>
<td>Yes</td>
<td>1,823</td>
<td></td>
</tr>
<tr>
<td>MMS</td>
<td>Money market savings</td>
<td>Yes</td>
<td>35,841</td>
<td></td>
</tr>
<tr>
<td>MRA</td>
<td>Market rate account</td>
<td>Yes</td>
<td>19,467</td>
<td></td>
</tr>
<tr>
<td>MTG</td>
<td>Mortgage</td>
<td>Yes</td>
<td>2,444</td>
<td></td>
</tr>
<tr>
<td>NIC</td>
<td>Non-interest bearing checking</td>
<td>Yes</td>
<td>370,420</td>
<td></td>
</tr>
<tr>
<td>PAN</td>
<td>Platform annuities</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMR</td>
<td>Premier</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RBR</td>
<td>Retail brokerage</td>
<td>Yes</td>
<td>5,297</td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>Retirement programmes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPS</td>
<td>Retirement programmes securities</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
experience for households with different purchasing profiles (e.g. sensitivities to price, value, brand and quality). Loyalty cards and grocery purchases have yielded consumer insights and marketing actions such as these:

1. Of Diet Coke drinkers, 13 per cent consume 83 per cent of its volume. Taster’s Choice is even more extreme – it generates 73 per cent of its sales from only 4 per cent of its customers.
2. Gillette used a direct marketing mailing campaign to send its razors and coupons to men and women who purchased competitors’ razors.
3. Coca-Cola strengthened its relationship and power with retailers when it demonstrated that customers who purchased Coke as one of the items in their shopping trolleys were more profitable to the retailer (for the entire basket of purchases) than consumers who did not purchase Coke.

*Federal Express* data mines to obtain customer segments to pinpoint their desires for greater profitability. Customer service representatives are empowered to go to different lengths to satisfy customers who have been segmented as more and less profitable. This customer relationship management effectively creates a profit-and-loss statement per customer and customer segment.

*Rubbermaid* data mines its warehouse to determine promotional effectiveness. It can model the likely sales resulting from a 25 per cent reduction on prices with two-page ads compared with 40 per cent price cuts with smaller ads. They also use their data for merchandise optimisation and claim that this careful category management also enhances their relationships with their retailers, such as Wal-Mart, Pamida and Ames.

*Hotels* regularly collect a great deal of information on their guests. They supplement guest history data with guest preferences, and can thereby provide better quality and customised service. Implementers of such data systems find greater customer satisfaction and loyalty, and increased revenue per customer.

**Questions**

1. Explain some of the reasons behind the advent and availability of large databases to help companies/organisations increase their marketing effectiveness.
2. Discuss the role and managerial implications of some of the key data mining technologies.
3. Comment on the emergence of the position of a chief information officer (CIO) and its appearance on an organisational chart and its main functions.

**(I) Problem 1.5 Elements of a global information system**

**Introductory comments**

Information, or useful data, is the raw material of executive action. The global marketer is faced with a dual problem in acquiring the information needed for decision making. In advanced countries the amount of information available far exceeds the absorptive capacity of an individual or an organisation. The problem is super-abundance, not scarcity. While advanced countries all over the world are enduring an information explosion, there is relatively little information available on the marketing characteristics of less developed countries. Thus the global marketer is faced with the problem of information abundance and information scarcity. The global marketer must know where
Problems in Marketing

to go to obtain information, the subject areas that should be covered, and the different ways that information can be acquired. The process of information acquisition is known as *scanning*. The section that follows presents a scanning model for multinational marketing. The chapter continues with an outline of how to conduct global marketing research.

**ELEMENTS OF A GLOBAL INFORMATION SYSTEM**

**Information subject agenda**

A subject agenda, or list of subjects for which information is desired, is a basic element of a global marketing information system. Because each company’s subject agenda should be developed and tailored to the specific needs and objectives of the company, it is not possible to suggest an ideal or standard agenda. Therefore any framework, such as that proposed in Table 1.9, consists of six broad information areas with 31 information

**Table 1.9 Categories for a global business intelligence system**

<table>
<thead>
<tr>
<th>Category</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I Market information</strong></td>
<td></td>
</tr>
<tr>
<td>1 Market potential</td>
<td>Information indicating potential demand for products, including the status and prospects of existing company products in existing markets</td>
</tr>
<tr>
<td>2 Consumer/customer attitudes and behaviour</td>
<td>Information and attitudes, behaviour, and needs of consumers and customers of existing and potential company products. Also included in this category are attitudes of investors towards a company's investment, merit</td>
</tr>
<tr>
<td>3 Channels of distribution</td>
<td>Availability, effectiveness, attitudes and preferences of channel agents</td>
</tr>
<tr>
<td>4 Communications media</td>
<td>Media availability, effectiveness and cost</td>
</tr>
<tr>
<td>5 Market sources</td>
<td>Availability, quality and cost</td>
</tr>
<tr>
<td>6 New products</td>
<td>Non-technical information concerning new products for a company (this includes products that are already marketed by other companies)</td>
</tr>
<tr>
<td><strong>II Competitive information</strong></td>
<td></td>
</tr>
<tr>
<td>7 Competitive business strategy and plans</td>
<td>Goals, objectives. Definition of business; the 'design' and rationale of the company</td>
</tr>
<tr>
<td>8 Competitive functional strategies, plans and programmes</td>
<td>Marketing: target markets, product, price, place, promotion. Strategy and plan, finance, manufacturing, R&amp;D and human resource strategy, plans, and programmes</td>
</tr>
<tr>
<td>9 Competitive operations</td>
<td>Detailed intelligence on competitor operations. Production, shipments, employee transfers, morale, etc.</td>
</tr>
<tr>
<td><strong>III Foreign exchange</strong></td>
<td></td>
</tr>
<tr>
<td>10 Balance of payments</td>
<td>Government reports</td>
</tr>
<tr>
<td>11 Nominal and real interest rates</td>
<td>Expert estimation</td>
</tr>
<tr>
<td>12 Inflation rate compared with weighted trading partner average</td>
<td>Secondary information report</td>
</tr>
<tr>
<td>13 Estimate of international competitiveness</td>
<td>Expert judgement</td>
</tr>
</tbody>
</table>

(Table 1.9 continued)
categories. The framework satisfies two essential criteria. First, it is exhaustive: it accepts all the subject areas of information encountered by a company with global operations. Second, the categories in the framework are mutually exclusive: any kind of information encompassed by the framework can be correctly placed in one and only one category.

Prescriptive information covers the rules for action in the foreign market. This category incorporates information from guidelines to regulations, rulings and laws by public and private groups and authorities.
Scanning modes: surveillance and search

Once the subject agenda has been determined, the next step in formulating a systematic information-gathering system in the organisation is the actual collection of information. There are two important modes or orientations in information collection or scanning: surveillance and search.

In surveillance the scanner is oriented towards acquiring relevant information that is contained in messages that cross his or her scanning attention field. In search the scanner is deliberately seeking information, either informally or by means of an organised research project. The two orientations and their components are briefly described in Table 1.10.

The significance of determining scanning mode is the measure it offers (1) of the extent that a scanner actively seeks out information, as contrasted to the more passive acquisition of information and (2) of the scanner’s attention state at the time of acquiring information.

Table 1.11 shows that the bulk of information acquired by headquarters’ executives of major US multinational firms is gained through surveillance as opposed to search (73 per cent versus 27 per cent). However, viewing (general exposure), the least oriented of the surveillance modes, generates only 13 per cent of important external information acquired, where monitoring generates 60 per cent.

### Table 1.10 Scanning modes

<table>
<thead>
<tr>
<th>Modes</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surveillance orientation</strong></td>
<td></td>
</tr>
<tr>
<td>Viewing</td>
<td>General exposure to external information where the viewer has no specific purpose in mind other than exploration</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Focused attention, not involving active search, to a clearly defined area or type of external information</td>
</tr>
<tr>
<td><strong>Search orientation</strong></td>
<td></td>
</tr>
<tr>
<td>Investigation</td>
<td>A relatively limited and informal seeking of specific information</td>
</tr>
<tr>
<td>Research</td>
<td>A formally organised effort to acquire specific information usually for a specific purpose</td>
</tr>
</tbody>
</table>

### Table 1.11 Relative importance of scanning modes in acquiring global information

<table>
<thead>
<tr>
<th>Percentage of information acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveillance: 73</td>
</tr>
<tr>
<td>Viewing: 13</td>
</tr>
<tr>
<td>Monitoring: 60</td>
</tr>
<tr>
<td>Search: 27</td>
</tr>
<tr>
<td>Investigation: 23</td>
</tr>
<tr>
<td>Research: 4</td>
</tr>
<tr>
<td>Total: 100</td>
</tr>
</tbody>
</table>
This paucity of information generated by viewing is the result of two factors. One is the extent to which executives are exposed to information that is not included in a clearly defined subject agenda. The other is their receptiveness to information outside this agenda. Both factors operate to limit the relative importance of viewing as a scanning mode. Every executive limits his or her exposure to information that will not have a high probability of being relevant to the job or company. This is a rational and necessary response to the basic human mental limitations. A person can handle only a minute fraction of the data available to him or her. Because exposure absorbs limited mental resources, exposure must be selective.

Nevertheless, receptiveness by the organisation as a whole to information not explicitly recognised as important is vital. The effective scanning system must ensure that the organisation is viewing areas where developments that could be important to the company might occur. This may require the creation of a full-time scanning unit that would have explicit responsibility for acquiring and disseminating information on subjects of importance to the organisation.

**SOURCES OF INFORMATION**

**Human sources**

As can be seen in Table 1.12, people are the most important source of information for headquarters executives of global companies. The most important human source of external information is company subsidiaries, affiliates and branches. The importance of executives abroad as a source of information about the world environment is one of the most striking features of the modern global corporation. The general view of headquarters executives is that company executives overseas are the people who know best what is going on in their areas. Typical comments of headquarters executives are:

Our principal sources are internal. We have a very well informed and able overseas establishment. The local people have a double advantage. They know the local scene and they know our business. Therefore, they are an excellent source. They know what we are interested in learning, and because of their local knowledge they are able to effectively cover available information from all sources.

The presence of an information network abroad in the form of company people is a major strength of the global company. It may also be a weakness in the scanning posture of a company that has only partially extended the limits of its geographical operations because inside sources abroad tend to scan only information about their own countries or region. Although there may be more attractive opportunities outside existing areas of operation, the chances of their being noticed by inside sources in a domestic company are very low because the horizons of domestic executives tend to end at national borders.

<table>
<thead>
<tr>
<th>Table 1.12 Sources of information (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location of sources</strong></td>
</tr>
<tr>
<td>Inside organisation</td>
</tr>
<tr>
<td>Outside organisation</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
A man may be perfectly rational, but only within a limited horizon. As a consumer, he will normally restrict his expenditures to those goods offered to him through customary channels. As a producer, he will sell his goods typically in a given ambit. Over his horizon there may be brilliant opportunities to improve his welfare as a consumer or his income as a producer, but unless he is made aware of them, they will avail him nothing.

Distributors, consumers, customers, suppliers and government officials are also important information sources. Information from these sources is largely obtained by country-operating personnel as opposed to headquarters’ staff. Other sources are friends, acquaintances, professional colleagues, ‘freelance’ university consultants, and candidates for employment, particularly if they have worked for competitors. As shown in Table 1.13, personal sources of information far exceed impersonal sources in importance. Eighty-six per cent of the human sources utilised by respondents are personal. Interestingly, when human sources inside and outside the company are compared, 97 per cent of sources inside the company are personal. The comparison suggests that lack of acquaintanceship is a barrier to the flow of information in an organisation, thus underlining the importance of travel and contact.

Significantly, three-quarters of the information acquired from human sources is gained in face-to-face conversation. Why is face-to-face communication so important? There are many factors involved. Some information is too sensitive to transmit in any other way. Political information from government sources, for example, could be damaging to the source if it were known that the source was transmitting certain information. In such cases, word of mouth is the most secure way of transmitting information. Information that includes estimates of future developments or even appraisals of the significance of current happenings is often considered too uncertain to commit to writing. One executive in commenting upon this point said:

People are reluctant to commit themselves in writing to highly ‘iffy’ things. They are not cowards or overly cautious; they simply know that you are bound to be wrong in trying to predict the future, and they prefer to not have their names associated with documents that will someday look foolish.

Other information does not have to be passed on immediately to be of value. For example, a division president said:

Information of relevance to my job [strategic planning] is not the kind of information which must be received immediately. Timeliness is not essential; what is more important is that I eventually get the information.

<table>
<thead>
<tr>
<th>Source relationship</th>
<th>Inside sources</th>
<th>Outside sources</th>
<th>All human sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal sources</td>
<td>97</td>
<td>80</td>
<td>86</td>
</tr>
<tr>
<td>Impersonal sources</td>
<td>3</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of instances</td>
<td>N = 33</td>
<td>N = 60</td>
<td>N = 93</td>
</tr>
</tbody>
</table>

Table 1.13 Comparison of personal and impersonal human sources (percentage)
Environmental Scanning

The great importance of face-to-face communication lies in the dynamics of personal interaction. Personal contact provides an occasion for executives to get together for a long enough time to permit communication in some depth. Face-to-face discussion also exposes highly significant forms of communication, such as the tone of voice, the expression of a person's eyes, movements, and many other forms of communication that cannot be expressed in writing.

**Documentary sources**

Of all the changes in recent years affecting the availability of information, perhaps none is more apparent than the outpouring of documentary information. This outpouring has created a major problem, the so-called 'information explosion'. The problem is particularly acute for international marketers who must be informed about numerous national markets.

Although executives are overwhelmed with documentary information, only a handful of companies employ a formal system for monitoring documentary information. The absence of formal monitoring systems has resulted in a considerable amount of duplication. A typical form of duplication is the common practice of an entire management group reading one publication covering a particular subject area when several excellent publications covering the same area are available.

The best way to identify unnecessary duplication is to carry out an audit of reading activity by asking each person involved to list the publications he or she reads regularly. A consolidation of the lists will reveal the reading attention of the group. In a surprisingly large number of instances, the reading attention of the group will be limited to a handful of publications to the exclusion of other publications of considerable merit. An elaboration of this procedure could involve consultation with experts outside the company regarding the availability and quality of publications in relevant fields.

External documentary sources are a valuable source of information for part of every company's international information requirement, and they are also a particularly valuable source of information for the student who typically does not have the human and written sources that are available to a long-time professional working in the field.

**Perception sources**

Direct perception is the source of a very limited proportion of the information acquired by executives, as measured by message volume. However, it provides a vital background for the information that comes from human and documentary sources. There are three types of direct perception. One type is information easily available from other sources, but it requires sensory perception of the actual phenomena to register the information in the respondent's mind.

Another type of direct perception is information not readily available from alternative sources. An example is the information that a company is erecting a plant in a country capable of producing a competitive product. Local executives in the country drive by the new plant every day on their way to their offices but are unaware of the product X potential of the plant under construction. The company erecting the plant had announced that it was for product Y, and local executives have accepted this announcement. The headquarters executive realises immediately that it is potentially
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capable of producing product X. He possesses technical knowledge that enables him to perceive information in a physical object (the plant) that his local executives are unable to perceive.

The third type of direct perception is perhaps the most important. This is the background information that one gets from observing a situation. Of course, in multinational marketing, direct perception requires travel. Thus the independent variable in the use of this source is travel. Travel should be seen not only as a tool for management control of existing operations, but also as a vital and indispensable tool in information scanning.

Information perception and media

The medium is the channel through which information is transmitted. Any marketing information system is based on three basic media: the human voice for transmitting words and numbers; printed words and numbers; and direct perception through the senses of sight, hearing, smell, taste and touch. Each of these basic information system media has been extended in recent years by important innovations in electronic and travel technologies. Of particular importance to the marketing information system have been the impressive developments in the Internet, e-mail, satellite communication networks for voice and data, and transportation via jet aircraft.

Comparability of international data

International statistics are subject to more than the usual number of caveats and qualifications concerning comparability. An absence of standard data-gathering techniques is the basis for some of the lack of comparability in international statistics. In Germany, for example, consumer expenditures are estimated largely on the basis of turnover tax receipts, whereas in the UK consumer expenditures are estimated on the basis of the data supplied not only by tax receipts but also from household surveys and production sources.

Even with standard data-gathering techniques, definitional differences would still remain internationally. In some cases, these differences are minor; in others, they are quite significant. Germany, for example, classifies the purchase of a television set as an expenditure for ‘recreation and entertainment’, whereas the same expenditure falls into the ‘furniture, furnishings and household equipment’ classification in the USA.

Problem – example

Survey data are subject to perhaps even more comparability problems. When Pepsico International, a typical user of international research, reviewed its data, it found a considerable lack of comparability in a number of major areas. Table 1.14 shows how age categories were developed in seven countries surveyed by Pepsico.

While flexibility may have the advantage of providing groupings for local analysis that are more pertinent (e.g. 14–19 might be a more pertinent ‘youth’ classification in one country, whereas 14–24 might be a more useful definition of the same segment in another country), the marketing research group at Pepsico’s headquarters pointed out that if data were reported to the company’s headquarters in standard five-year
intervals, it would be possible to compare findings in one country with those in another. Without this standardisation, such comparability was not possible. The company’s headquarters marketing research group recommended, therefore, that standard five-year intervals be required in all reporting to headquarters, but that any other intervals that were deemed useful for local purposes were perfectly allowable. Pepsico also found that local market definitions of consumption differed so greatly that it was unable to make inter-market comparisons of brand share figures. Representative definitions of consumption are shown in Table 1.15.

One important qualification about comparability in multi-country survey work is that comparability does not necessarily result from sameness of method. A survey asking the same question and using the same methods will not necessarily yield results that are comparable from country to country. For example, if the data were recorded by household, the definition of household in each of these countries could vary. The point is that comparability of results has to be established directly; it does not simply follow from the sameness of method. Establishing that results will be comparable depends upon either knowing that methods will produce identical measurements or knowing how to correct any biases that may exist.

Questions

1. Define the scanning modes of surveillance and search.
2. Comment on the role of documentary sources.
3. Analyse the relevant issues that can be raised when a marketing manager is addressing the subject of comparability of international data.
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Reference and further readings