CHAPTER 9
Creative approaches to analysis

Learning outcomes

The key learning outcomes from this chapter are to:

■ recognise the importance of a *creative approach* by the consultant;

■ understand the basis of different *analysis strategies*;

■ appreciate how information may be *visualised*;

■ understand the different *cognitive styles* managers use to make sense of the world and the cognitive strategies they bring to bear on problems;

■ be able to use a variety of *creativity-enhancing techniques*.

9.1 The importance of creativity and innovation

One of the most fundamental changes in the way managers approach their tasks has been the growth in the information available to them. At the touch of a button a manager can now call up an amount of information it would have taken a manager just one generation ago weeks, if not months, to collect. This information can take a variety of forms: it may be numerical information, facts, commentary, opinions or items in a list. Despite the growth in the availability of information, managers' jobs do not seem any easier. If anything they are harder. Managers must learn not only to make decisions but also to collect, manipulate and store ever more data upon which effective decision-making must be based.

Ultimately, most managers have access to the same information about the competitive world they work in. 'Secrets' are less important in business than many think. Information technology makes data on the business and its environment readily available. Numerous commercial and government organisations offer information and analysis on business sectors. Modern market research techniques can quickly identify new potential business opportunities. The Internet provides a stream of information on customers, suppliers and competitors.

Competitiveness is built not so much on *access* to data but on ability to *use it effectively*. Underpinning this is the ability to identify and adopt an appropriate analysis strategy so that data become information and information becomes the

knowledge that leads to effective decision-making. Analysis may call upon straightforward and familiar techniques. The simplest may be so trivial that they may not be recognised as analysis at all – the addition of sales from different product lines to produce an overall sales figure, for example. At the other end of the scale there are techniques that are extremely sophisticated and demand an intimate knowledge of their manipulation if they are to be used properly. Many statistical methodologies used in market research fall into this category.

Whatever the analysis technique adopted, analysis is an area where the consultant can add value. The consultant creates value by identifying the client's decision-making requirements, directing the client towards the right technique, assisting him or her in using it and helping to identify the insights it offers.

9.2   Analysis strategies

Fundamentally, analysis is about identifying the patterns and relationships that exist in data. An analysis strategy is a specific way of manipulating data so that such patterns and relationships can be revealed. Data in their raw form are not very informative. Our minds are the product of evolutionary pressure. Humans, like all the great apes, are primarily visual animals. Our evolution has not equipped us to make sense of rows and tables of figures. What it has done is make us good at making decisions when faced with clear verbal or visual codes. A good analysis strategy orders and organises data so that they are converted into verbal or visual codes that can inform decision-making. Most of the analysis strategies used by management consultants make use of one or a combination of the following basic approaches.

Categorisation

Categorisation is a process whereby data, facts or items are sorted into different groups by virtue of their features. This allows the significance of the information to be identified. Categorisation is different to classification. Categorisation uses internal criteria. Classification uses externally imposed criteria. Categorisation makes no demands on theoretical insights, whereas classification does. Important examples of categorisation used in management include the strengths-weaknesses-opportunities-threats ('SWOT') model and the political-economic-sociological-technological ('PEST') model used to analyse a business and its situation (as discussed in Section 6.1). Here factors that make an impact on the business are sorted on the basis of their type, making their implications clearer.

Classification

Classification is also a process whereby items are sorted into different groups. This time, however, the groups are defined by external criteria rather than by arbitrary features. An example of the use of classification is Porter's generic strategy model (1980). Here, a business's strategy is defined as cost leadership, differentiation or focus. These criteria are theoretically a priori. They are derived from theoretical insights as to how businesses compete. These strategies do not have simply an arbitrary relationship to each other (as do the categorisation examples). Rather, they are defined by the external criteria of competitive approach and business scope.

Porter's generic strategies are a specific example of *strategic group analysis*. This is a powerful technique, which can provide an insight into the structure of an industry and the competitive environment of an individual firm. The method involves identifying the factors that characterise players in an industry and determine how they compete. These factors are then used to classify the players into different strategic groups. This technique has been used extensively to help managers understand their competitive environments and position their firms within them. Peteraf and Shanley (1997) offer a good review of the technique. Strategic groups are explored from a cognitive perspective by Reger and Huff (1993).

Numerical analysis

Numerical analysis is any technique where numbers are combined in order to understand how they relate to each other. An *equation* or *function* is a 'recipe', which describes in definite terms how the numbers should be combined. Generalised instances of data are represented by symbols – called *variables* – in these equations. Another way of thinking about a function is that it is a *map* that relates one set of data to another.

The simplest form of equation is the *ratio*. In a ratio one number is divided by another so that the relative magnitudes of the numbers, rather than their absolute magnitudes, are revealed. Financial analysis uses a variety of profitability and liquidity ratios to assess the performance and stability of a firm. This is discussed further in Section 6.3. Statistical analysis uses more complex numerical relationships. It is used in a wide variety of business situations, including market research. Management science is a technical discipline that offers a highly sophisticated mathematical approach to support managerial decision-making. It is concerned with using mathematical techniques to model managerial decision-making situations and to calculate optimal solutions and strategies for management problems. It is not normally called upon by managers, but does have important applications in a number of areas, for example determining production capacity requirements and modelling the effect of advertising on sales. Given its mathematical nature, such consulting is usually undertaken by specialist consultants. For the student who would like to explore this avenue of decision-making support, a good introductory text on management science is the 1994 book by Donald Plane.

Association

Association is the recognition that two things are connected in some way. If two things are associated this suggests that the consideration of one thing might be made easier, or more revealing, if the other thing is considered at the same time. An example of association might be the fact that managers usually notice competitors within their own strategic group more than those in other strategic groups. Here the association is made between an organisation's presence in a strategic group and the cognitive picture of competition held by a manager from that organisation. Another example arises from qualitative market research where buyers associate different products and the degree to which they might be substituted with each other. Association might be noticed as a result of using the analysis techniques described. It may be emphasised and enhanced by the use of the visualisation techniques described in Section 9.3.

Correlation

Correlation is more precise than association. It is the recognition that the *variation* in one variable occurs in step with that of another. A correlation may be identified statistically by the measure of a correlation coefficient. A correlation of +1 indicates that the two variables follow each other perfectly and in the same direction. A correlation coefficient of 0 indicates that the two variables are totally independent. A correlation coefficient of –1 indicates that the two variables follow each other perfectly but in opposite directions. An example of correlation might be the fact that in many industry sectors costs are seen to be positively correlated to market share. This suggests that increasing market share might in turn increase profitability. This suggests that a strategy to increase market share will increase not only sales but also underlying profitability. (*See* the review by Bourantis and Mandes (1987) for discussion of this issue.) Correlation suggests that there *might* be a causal link between the two variables but it does not *prove* it. A good correlation is suggestive, though. It is an invitation to explore further for possible causal relationships.

Causation

Causation *explains* correlation. Causation suggests that two variables are correlated because there is a cause and effect link between them. It provides an important insight for management because, if a causal link exists, control of the cause will automatically lead to control of the effect. Care should be taken in assuming the order of causation, though. Suppose that factor A is found to be correlated to factor B. It is true that A might cause B. But it is also true that B could be causing A. It might also be true that both A and B might be caused by a third factor, C. C may or may not be known. If necessary, another concept may have to be introduced in addition to the two known correlates to provide a full picture of what is going on.

The relationship between 'planning' and 'performance' provides a very good example of the problem of assigning cause and effect in management. This is particularly pertinent to us as so many consultancy exercises advocate and involve planning activity. It is a theme discussed critically by Henry Mintzberg in his book *The Rise and Fall of Strategic Planning* (1994). In some sectors it has been observed that there is a link between planning activity and financial performance. This is an *association*. Further, if planning is quantified as the investment of time and effort in creating, documenting and communicating long-range strategies and plans, and performance is measured as return on capital employed, then planning activity and performance vary together in a positive way. This is a *correlation*. From this it is tempting to assume that *planning* results in *performance.* This would certainly be a justification for engaging in it.

However, this is only one possible interpretation of the correlation (which is of the 'A leads to B' type). It is also possible that good performance leads managers to plan (the 'B leads to A' type) or that planning and performance are the result of a third factor (the 'C leads to both A and B' type). Thus we must postulate further variables to understand the full causal picture. We can develop plausible arguments for all three scenarios.

■ *Causal link A leads to B*. An example is 'planning is an aid to decision-making'. The argument might run as follows. Performance is improved if resource-allocation

decisions are made better. Planning guides decisions about the allocation of scarce and valuable resources. Because these decisions are more effective when planned, the business's performance is enhanced. On this basis planning should be encouraged.

■ *Causal link B leads to A*. An example is 'planning activity is a way of using "spare" resources'. The argument might run as follows. A good performance by the firm brings in resources. Managers want to use those resources. They may see planning as a way of doing so. Planning adds nothing to performance. In fact, it may be positively wasteful; it may, for example, be just a way for managers to show their ability and importance to colleagues. Planning is, in effect, an *agency cost* expended when the firm's managers can afford it. On this basis planning should be discouraged. Reducing planning may even enhance performance further.

■ *Causal link C leads to A and B.* An example is 'planning and performance are both the result of information being available'. The argument might run as follows: if managers have access to a great deal of information, their decision-making will be better, so the firm's performance will be enhanced; they may also feel that, because the information is obviously valuable, they should make maximum use of it. A good way to use it is in planning. Planning not only demands that the information be used; it is a very visible way of using it. Both performance and planning result from the availability of information.

In this case care should be taken about advocating planning activity. Planning itself does not enhance performance (information does). But this is only a 'first order' interpretation of cause and effect. A deeper analysis might reveal that planning activity does in fact influence the type of information managers seek. It might also influence the way information is used to support decision-making. The caveat really shows that simple causal links are difficult to isolate in systems as complex as business organisations. McGuire (1997) considers creativity in relation to hypothesis explanation (broadly, explanations as to why things happen). The context is psychology, but the ideas are widely applicable. He suggests that there are five basis heuristics involved in being creative about hypotheses.

■ **Attention to odd occurrences**

The unusual calls attention to itself. It is easy to dismiss the odd as just that – unrepresentative of the normal. But in being dismissed, the opportunity to build richer hypotheses within which the odd becomes normal might be missed.

■ **Simple conceptual analysis**

Attempts to reclassify and recategorise observations and experiences in new ways so that new patterns and ideas emerge.

■ **Complex conceptual analysis**

Builds on the simple by using more formal deductive, diversifying and meta-theoretic ideas (theories that relate theories together).

■ **Reinterpreting the past**

Re-examining old experiences. Using single and multiple, cross-sectional and longitudinal case studies.

■ **Collecting new data**

Formal collection of new data and its analysis by quantitative and qualitative techniques.

These approaches range from simply thinking about things in fresh ways to using formal, and perhaps, technical techniques. Different consulting demands, and the approach and skills of different consultants, will lead to different levels. What matters to the client though is the original idea – not how it was generated!

9.3   Visualising information

Given our evolutionary heritage, we respond better to pictures than to numbers. Whereas we may not see the relationships present in a table of figures, we will immediately recognise the patterns in a visual depiction of those data. Visualisation offers an immediate representation of a field of data and the interrelationships within it. Visualisation can be used as a strategy on its own or as a supplement to the methods described above: the data may be 'raw' or they may have been generated by an analysis technique. Some of the more important means of visualisation include the following.

Diagrams

A diagram is a representation that has a one-to-one correspondence with the thing being represented. In a diagram, the individual *elements* of the thing represented are depicted. They also retain a depiction of their *relationship* to each other. An important type of diagram is a *map* depicting a geographic area, or a *plan* of a site. Another type of diagram is a *technical figure*, for example that of a machine such as a car engine.

Flow charts

A flow chart is a symbolic representation of a *process*. The stages in the process are represented by stages in the flow chart. The relationships between different stages can then be illustrated. An example is the flow chart depicted in Figure 2.3 to represent the consulting process.

Graphs

A graph is a visual representation of the relationship between two or more variables. Graphs are very good for demonstrating trends and relationships. There are many types of graph. Most personal computer packages offer bar charts, line graphs, pie charts, scatter graphs and three-dimensional surfaces. The selection of the correct graph demands a consideration of the data, the information that is to be communicated, the demands of the audience and the impact desired.

Matrices

A matrix is a visualisation, which uses a compartmentalised grid to depict relationships. Two axes define the grid. Typically, each axis is divided into two intervals
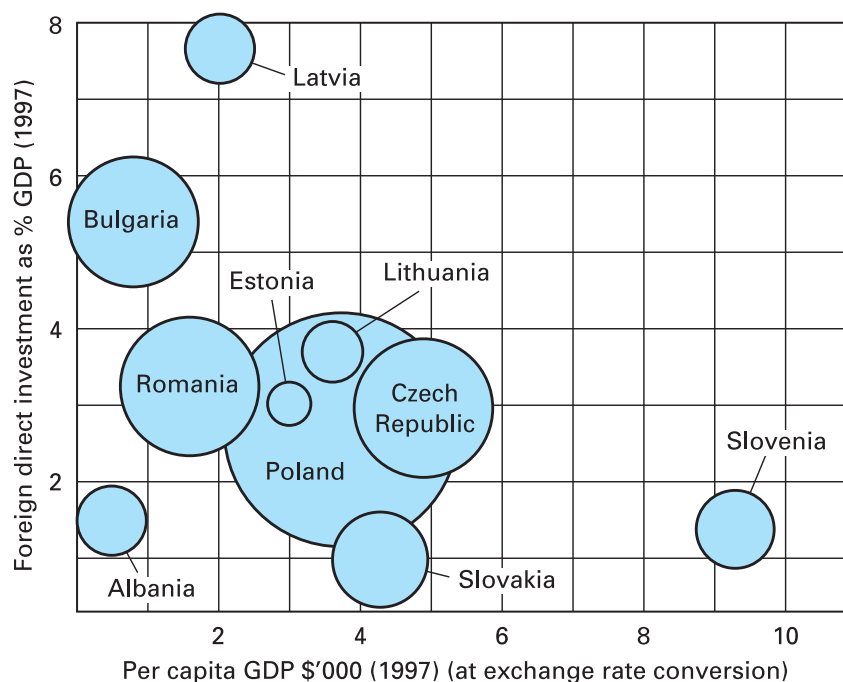
Figure 9.1 An example of information visualisation

Source: Based on data from *The Economist*.

(giving four compartments) or three intervals (giving nine compartments). Such grids are commonplace in management. Important examples include the *generic strategy model* of Michael Porter, the *business expansion matrix* of Igor Ansoff, the Boston Consulting Group's (BCG) *cash-flow matrix* (*see* Hedley, 1977) and the *directional policy matrix* (DPM) developed by Robinson, Hitchens and Wade (1978), three strategic planners with the oil company Shell. A grid is a very efficient means of presenting information in visual form. Up to four dimensions of data can be shown at once. The two axes define the first two dimensions. If a circle is used to depict an item on the matrix then the diameter (or area) of the circle can be used to depict a third. If the circle is replaced by a pie chart, a fourth dimension can be included. Tony McCann (1995) has discussed why matrices are such a powerful means of information display.

Figure 9.1 gives an example of a matrix. Here a matrix is used to present important economic statistics of some central European countries. Three dimensions are shown. The horizontal axis represents 'wealth' (per capita gross domestic product or GDP); the vertical axis represents foreign investment capital inflow; the size of the circle represents the country's population. The relatively large population of Poland, the high level of investment in Latvia and the relatively high wealth of Slovenia become immediately evident.

9.4	Supporting analysis with ad hoc visuals

Verbal communication can be enhanced by the ability to create visual images on an *ad hoc* – as and when needed – basis. Access to the means to create such images can enliven small group discussions. A formal presentation may be supplemented by visual images, perhaps created in response to later questions or to expand on points

already made. The means for creating ad hoc visuals can be a simple paper and pen, black or white boards, flip charts or blank acetates and an overhead projector.

The visual information generated has a number of functions:

■ to act as a record of what is being discussed;

■ to explain and explore particular points and issues;

■ to provide a focus for and a guide to the group discussion;

■ to summarise ideas and points of agreement.

The information in the visual image can be built up in stages and can take account of feedback from the audience. Therefore, the creation of ad hoc pictures is a powerful means of explaining complex issues. Some guidelines for making ad hoc visual communication effective are as follows:

1 Plan the image before starting.

2 Start small and in the centre of the available area, so that the image can be freely extended.

3 Build it in stages, checking the audience's understanding at each stage.

4 Invite the audience to contribute to the image.

5 If possible, ensure that someone makes copies of the images and information gathered for later distribution.

Examples of the kind of visual devices that are particularly effective when created in this way are flow diagrams, mind maps, spider diagrams and position maps (discussed below).

9.5   Cognitive style and strategy

We all have our own approach to problem-solving. The way in which we see the world and manipulate, process and store data about it is called our cognitive style. A manager's cognitive style will be a critical factor in how that manager works. A cognitive *style* is different from a cognitive *strategy*. Cognitive style is the fixed set of preferences an individual has for organising information about the world. A cognitive strategy is an approach selected at a particular time to deal with a specific problem. Cognitive style and strategy are important in relation to many practical considerations when dealing with and influencing other people.

Studies of cognitive style provide rigorous insights into the commonsense questions we ask when we wish to communicate with another person. For example, is that person a 'big picture' or a 'small picture' person? Would he or she want to stick to the broad view or would he or she be interested in the details? Should only the 'core' facts be presented or are the facts better located in a wider context? Should the facts to be used in an argument be grouped to reinforce one another or should they be left distinct? How might the manager be positively influenced? By a detailed logical argument or by an emotional plea? Can the manager's existing experience be called upon or should a new way of seeing things be advocated? How will he or she perceive risk? As something to be relished or something to be avoided? Will the manager make a decision now or will he or she want to think about things for a while?

John Hayes and Christopher Allinson (1994) of the University of Leeds have written an excellent review of the work into cognitive style and its importance for management practice. These researchers identified 26 dimensions of cognitive style, which have been described in the literature. The following tabulations are indebted to their review. Necessarily, this summary must be limited. The interested student is referred to the suggestions for further reading at the end of this chapter for a full reference to this work. We have organised the cognitive dimensions described in their study into three categories: the way in which the world is perceived, approaches to problem-solving and approaches to tasks. We have done so for reasons of clarity. It must be recognised that, in practice, perception, problem analysis and task approach interrelate so such a distinction is to an extent arbitrary.

The way in which the world is perceived

Table 9.1 summarises the dimensions of perception.

Table 9.1 Perception

Dimension	Description
Cognitive complexity/simplicity	Cognitive complexity refers to the number of dimensions used to categorise the world. A complex cognitive style uses a large number of dimensions to make sense of the world. A simple cognitive style uses few or even just one dimension.
Analytical/non-analytical conceptualising	Conceptualising refers to the approach taken to distinguish items from each other. An analytical style uses distinct attributes as the basis for differentiating items. A non-analytical style uses broader relationships as the basis for differentiating them.
Levelling/sharpening	This dimension relates to the way new facts are incorporated into the cognitive scheme. A leveller tends to use existing cognitive categories to make sense of and store new experiences. A sharpener tends to set up new categories.
Incongruence tolerance/intolerance	Incongruence tolerance is a willingness to accept unusual events. Intolerance means incongruent events are not accepted. More data and confirmation may be sought in order to make sense of the incongruous.
Verbaliser/visualiser	The use of linear 'verbal' strategies for processing information as opposed to open 'visual' strategies.
Perceptive/receptive	A perceptive approach represents the tendency to process new data by adding to previously held concept categories. A receptive approach indicates a readiness to store the data in an unprocessed form.
Sensing/intuition	This dimension represents the priority given to 'actual' experience rather than feelings or intuition about it.
Thinking/feeling	This dimension has resonance with the one above. It reflects the priority given to the formal evaluation of data over emotional insights into it.
Active/reflective	This dimension reflects the preference for direct engagement in an experience rather than detached observation of it.
Splitters/lumpers	Splitters break down their experience of reality into its component parts. Lumpers group different aspects of their experience into an integrated picture.

Table 9.1 Continued

Dimension	Description
Concrete/abstract	This is the preference for tangible objects over abstract concepts when thinking about the world.
Field dependent/ independent	This categorisation deals with the way in which background information is taken in with pertinent information. Field dependent thinkers tend to take background information into account. Field independent people focus on the essential stimuli and do not take account of background information.

Source: Adapted from Hayes, J. and Allinson, C.W. (1994) 'Cognitive style and its relevance for management practice', *British Journal of Management*, 5, 53–71. © Blackwell Publishing, reproduced with permission.

Approaches to solving problems

Table 9.2 summarises the dimensions of approaches to problem-solving.

Table 9.2 Problem-solving

Dimension	Description
Scanning/focusing	This is the way in which information is selected as relevant to a particular problem. Scanners bring in a wide range of information. Focusers tend to concentrate on only the most immediately pertinent facts.
Converging/diverging	This refers to the approach to a problem. Converging thinking seeks a single, correct solution using formal search criteria. Diverging thinking is broad, open and comfortable in using several solution strategies at once.
Systematic/intuitive	A systematic approach represents the tendency to work through each part of the data in turn in a sequential way. An intuitive approach 'stands back' to get the whole picture from the data.
Serialist/holist	Similar to the above. A serialist approaches problems in a sequential way, working through them one stage at a time. A holist ignores the details and tries to get a global 'fix' on the problem.
Adaptors/innovators	When faced with a problem an adaptor utilises a conventional solution, modifying it if necessary. An innovator attempts to come up with a new type of solution.
Literal-analytic/ poetic-synthetic	This is a cognitive style that relates to the use of analogies in problem-solving. The literal-analytic prefer 'hard' analogies based on one-to-one correspondence. The poetic-synthetic are more comfortable with 'soft' analogies which draw on deeper and more metaphorical correspondences.
Logical/reference point reasoning	Logical reasoning demands a good survey of all available cases before conclusions are drawn. Reference point reasoning draws wider conclusions from limited experience or test cases.
Reasoning/intuitive	The preference for developing conclusions based on logical reasoning versus the preference for developing conclusions using insight and intuition.

Source: Adapted from Hayes, J. and Allinson, C.W. (1994) 'Cognitive style and its relevance for management practice', *British Journal of Management*, 5, 53–71. © Blackwell Publishing, reproduced with permission.

Approaches to tasks

Table 9.3 summarises the dimensions of approaches to tasks.

Table 9.3 Approaches to tasks

Dimension	Description
Automatisation/ restructuring	This dimension refers to task preference. Automatisation implies a preference for repetitive tasks, restructuring a preference for new and different tasks.
Constricted/ flexible control	This refers to the ease with which a manager can be distracted from dealing with a particular problem. Constricted control represents a susceptibility to distraction, flexible control a resistance.
Impulsiveness/ reflectiveness	Impulsive decision-makers make quick responses. Reflective decision-makers take longer to come to a decision. In general, the impulsive are quicker, but the reflective tend to make fewer errors.
Active/ contemplative	This refers to the preference for gaining insight into a problem by active involvement rather than detached contemplation and mental imaging.
Risk taking/ cautious	Risk takers favour options that offer a good reward, even when they have a low chance of success. The cautious avoid any options except those with a good chance of success.

Source: Adapted from Hayes, J. and Allinson, C.W. (1994) 'Cognitive style and its relevance for management practice', *British Journal of Management*, 5, 53–71. © Blackwell Publishing, reproduced with permission.

Cognitive style and strategy are important. They determine the way in which particular issues will come in and out of focus in the manager's attention and surface in the list of priorities. They underlie the way in which the manager might be convinced about a particular course of action. Effective communicators, negotiators and influencers develop an instinct for the cognitive styles used by others. They take them into account when developing relationships. Recognising another's cognitive style and resonating with it is inherent in building rapport (an idea developed in Chapter 7). Although this might look challenging, it is like any management skill, an ability that can readily be developed with practice.

9.6 Mind mapping

The first and most important person the consultant must communicate with is himself/herself. The idea of communicating with oneself may seem a rather strange one. After all, we might argue, we know what's inside our own heads. In fact, the contents of our minds are not transparently available. We do not have instant access to our subconscious. In order to access our thoughts, memories and ideas we must constantly communicate with ourselves. We mentally (or even actually) talk to ourselves. We are engaged in a constant personal dialogue. Recognising this personal dialogue and making use of it can improve analysis. We become more effective when we learn to actively bring up ideas from our subconscious and communicate with ourselves about them. One of the most powerful techniques for doing this is *mind mapping*.

If we write down ideas in an essay form we are constrained to a linear format. Because of the nature of writing (like speaking), one idea must follow another.

Ideas are, at best, connected to two others: the one in front and the one behind. At a fundamental level, our minds do not work like this. Mentally, one idea is connected to a host of others in the form of a *semantic network*. Mind mapping is a technique that explores this network. It does not constrain concepts to be arranged linearly. Tony Buzan in his book *Use Your Head* describes mind mapping very well, along with other creative techniques.

Mind mapping is a straightforward technique. An initial concept is written down in the middle of a blank sheet. This sheet can be as large as is practical. Using lines and/or arrows, the concept is then connected to the next one that comes to mind. The process is repeated. As the map builds, webs and branches of ideas form. Different colours or line styles may be used to relate ideas in different ways. The only rule is that there are no rules! Let your mind run away with itself. Connect ideas even if the connection does not, at first, seem sensible. Innovation comes from creating new relationships. If no new insight is obtained, it does not matter. Don't forget, a mind map is a *personal* communication. There is no need to show it to anyone else if you do not want to. Once a map has been created, further mind maps can be used to rationalise and organise the ideas that develop. By way of an example of the technique, Figure 9.2 illustrates the mind map I used to lay the foundations for this book.
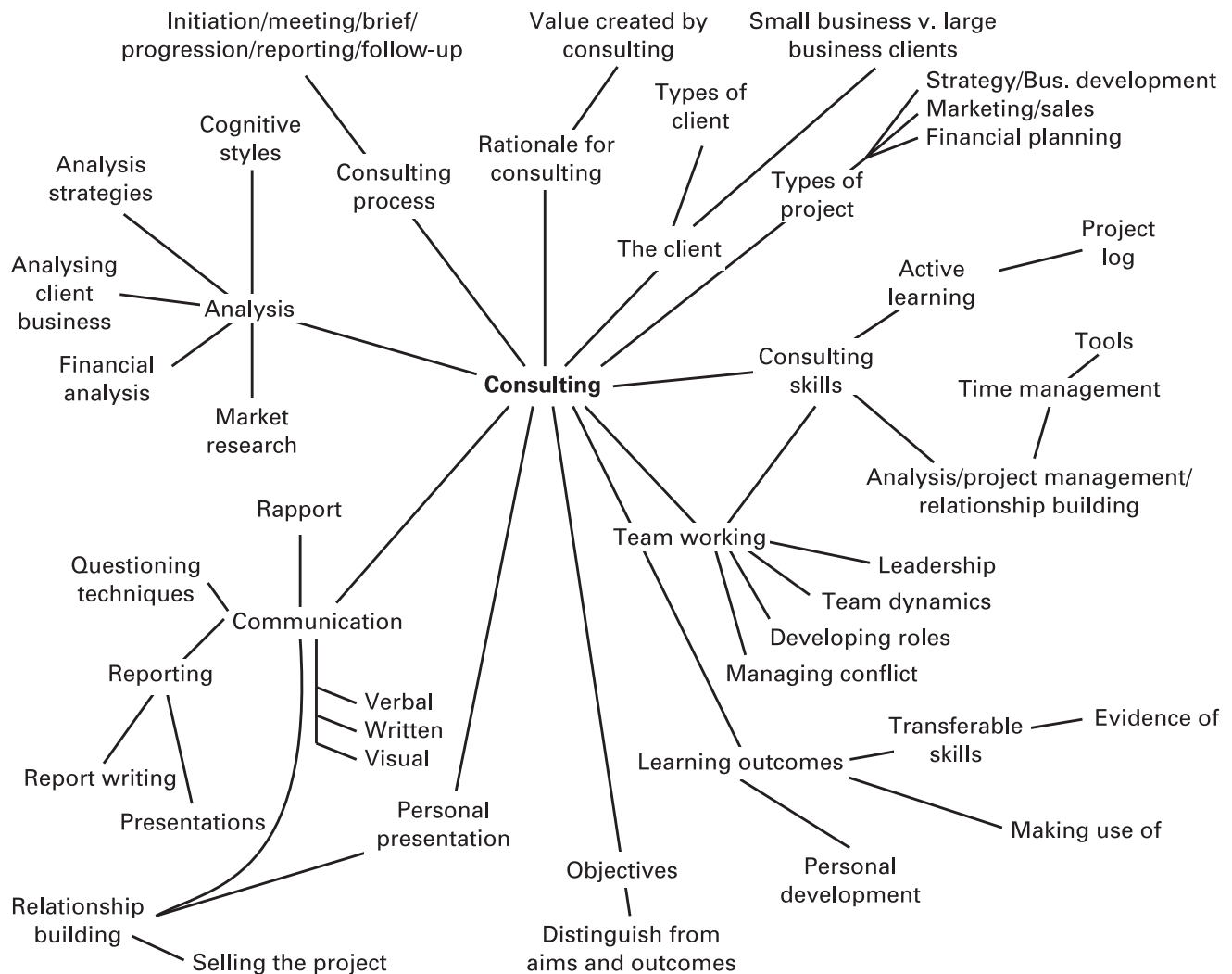

Figure 9.2 An example of a mind map

9.7 Brainstorming

Though it might be undertaken as a group effort, mind mapping is first and foremost a personal creativity technique. Brainstorming is a technique that facilitates group creativity. The creativity of a group is, potentially, more than the sum total of the creativity of the individuals who make it up. By acting in concert to enhance each other's creativity, a group can achieve more than individuals working alone.

To be effective, brainstorming must be organised properly. A facilitator should lead the brainstorming session. (Perhaps, but not essentially, the facilitator will be the group leader. The person in the group who has responsibility for analysis also makes a good facilitator.) Find a room where the session can be held. There should be no disturbances. The room should have presentation facilities such as an overhead projector and acetates or a flip chart. Seating should be comfortable and informal. Everyone should be able to see the overhead or flip chart. Ideally, five to seven people will be involved. Larger groups may be used – more people mean more ideas – but beware! The returns can diminish. The task of the facilitator becomes more difficult as the group becomes larger. If a large number of people can be involved it may be better to split the group into a series of subgroups that can address particular aspects of the issue under study. Ideas may be brought together at the end using a plenary session.

The facilitator should then announce the objective of the session. This might be a statement of the concept, idea or product that is to be explored and what the session aims to achieve. Stimulus material, such as illustrations and examples of products, can be introduced at this stage. The facilitator then invites comments, making it clear that only *positive* comments are allowed. Criticism of others' ideas is not accepted. *All* ideas are transferred to the overhead or flip chart. (The facilitator must resist the temptation to select ideas at this stage.) It is up to the facilitator to control debate, ensure that comments are positive and that the debate is relevant to the objectives. The facilitator should encourage all present to make a contribution.

When the ideas begin to dry up (usually after 20 to 30 minutes) the facilitator should start to draw the debate together. Key ideas are summarised. At this point criticism can be invited. Even at this stage it should be positive. Simple 'rubbishing' of ideas must be discouraged. When this criticism has been completed (some 15–30 minutes) the facilitator can draw the session to a close with a summary of what has been achieved. It is always good practice to produce a written summary of what has been found at the session. This can be distributed to those present. It is a record of the session and may encourage the submission of further ideas.

9.8 Features analysis

Features analysis is a method for encouraging innovation specifically about products and services. It can be built on both mind mapping and brainstorming methods. The first stage is to identify a product or service or a product or service category. The product or service is then stripped down into a list of features that

define it in the eyes of its users. The next stage is to manipulate this list so that insights can be gained. Some ways of manipulating features include the following.

## Prioritising

Ask the following questions:

- Which features are most important to the user?
- What are users willing to pay for?
- How does this differ between different user groups?
- To what extent are users willing to play off one feature against another?

Modifying

Ask what happens when features are removed, made larger, made smaller, made more obvious or less obvious, are made variable and so on.

Blending

Ask what happens if features of one product are combined with those of another. How attractive would the hybrid product look to a potential buyer? Figure 9.3 provides an example of features analysis in the form of a mind map.
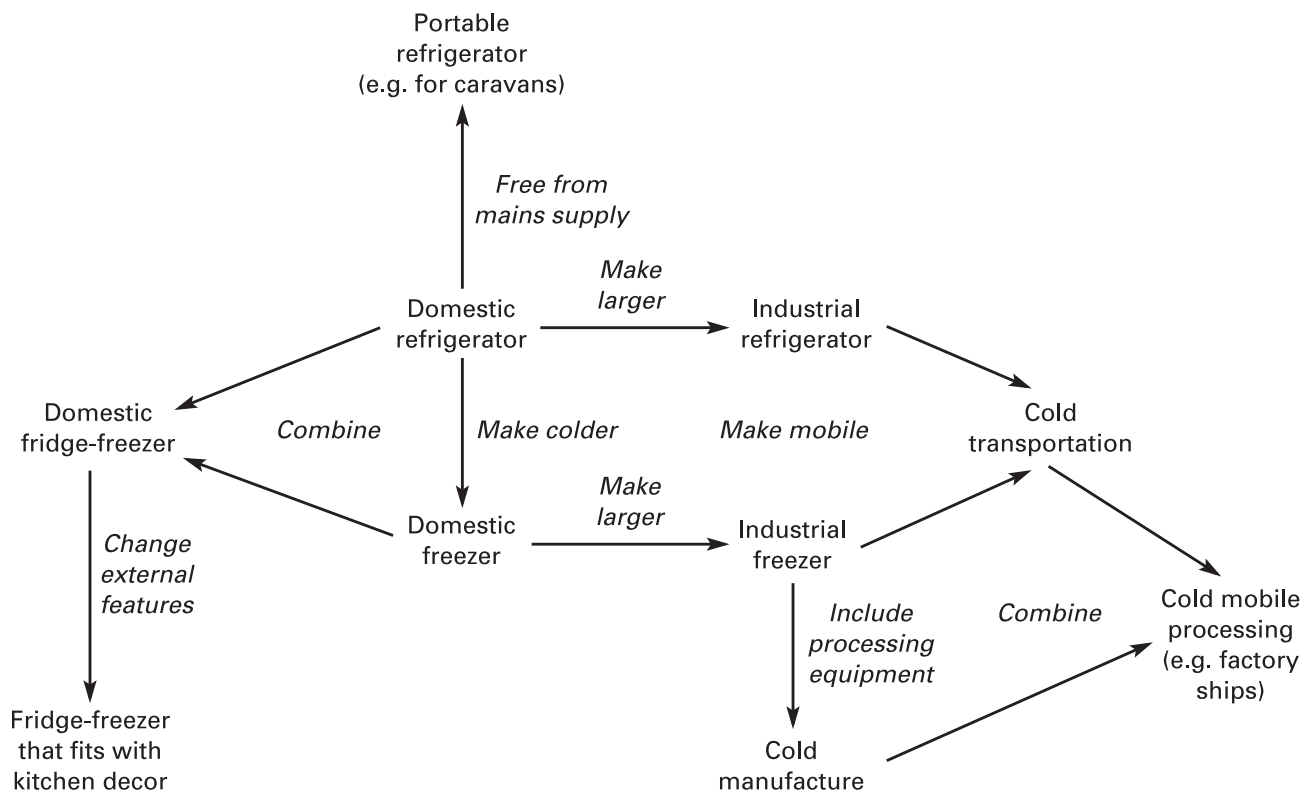
Figure 9.3 A mind map of features analysis on uses for a 'cold box'

9.9   Delphi auditing

Delphi auditing is a technique for gauging the opinion of experts on the development of some issue. It is named after the Oracle of Delphi, a famous classical Greek soothsayer to whom questions about the future could be put. Inspired by this, Oskar Helmer of the Rand Corporation developed the methodology in 1966. Typically the technique is used to explore a development that will have an impact on the way the client business operates but about which there is little consensus. It works well with highly speculative issues. At the time of writing, the development of the Internet as a means of advertising or the impact of a single European currency on business would be good examples.

The first stage is to identify the issue to be explored. This should be thought through in detail. Ensure that the issue is relevant for the client and that it is well defined. Delphi auditing is a form of market research and has the expenses associated with market research. Recognise resource limitations: avoid being too broad in scope and ambitious in detail. A good small study is usually better than a poor broad one.

The next stage is to identify a list of people who have expertise in the relevant area on a secondary research basis. This can be easily obtained by consulting appropriate articles, papers and books. The experts selected may be academics, consultants or industrialists. The third stage is to produce a questionnaire for the experts. The usual rules of postal questionnaire surveys apply. Make sure the questions are definite and unambiguous and will provide answers to the issues you wish to address. Be careful to distinguish between questions that demand a specific response (which can be quantified later) and those that invite general comment. General comments may need to be coded later as respondents may offer quite expansive suggestions.

For example, look at Exhibit 9.1 that presents two very different approaches to asking a question about the same issue. Don't make the survey too long. Your experts are likely to be busy people. While they will answer a short survey, a long one may put them off. Encourage them with a covering letter explaining the project and its objectives and an offer of a copy of the survey analysis. Include a post-paid reply envelope. Once the first survey is complete and has been analysed, a follow-up survey can be used. This will present the findings of the first survey and ask the experts to comment on it (*see* Exhibit 9.2).

If the issues are still unclear, a third cycle may be included. Don't forget that a Delphi audit does not give definite answers. It is merely the best consensus of the experts selected for their views. Don't assume that the 'average' response is the one that will occur. Look at the range of responses and evaluate the different scenarios that will result.

Exhibit 9.1 General and specific questions compared

General question

Some people have suggested that the Internet will be an important medium for advertising in the future. What are your views? Make your notes in the space provided. Please append a further sheet if necessary.

Specific question

How important do you think the Internet will be as an advertising medium, compared with other advertising media, in the future? Please indicate your views in the table below.

	Not important at all					Extremely important				
	1	2	3	4	5	6	7	8	9	10
Years from now										
1										
5										
10										
20										

Exhibit 9.2 An example of a follow-up survey question

We recently surveyed a number of experts on the impact of the European single currency on small business. It was suggested that three factors would benefit small businesses. These are:

1 reduced transaction costs;

2 predictable interest rates;

3 elimination of exchange rate fluctuations.

How important do you think each of these will be? How do you think their impact on (a) manufacturing and service firms and (b) domestic sales and export sales will differ in importance?

Team discussion points

Discuss whether or not you think these statements are true.

- 'Individuals are born creative; they cannot be taught to be creative.'
- 'Creativity is the responsibility of particular team members with particular roles. It is not the responsibility of the team as a whole.'
- 'Facilitating client creativity is fine. But it can leave the client feeling that the consultant has simply "sold them their own ideas back" and not added any real value.'

◆ **Summary of key ideas**

- Business success is not dependent only on having access to information. It is also based on using it to create new insights and spot new opportunities.

- An analysis strategy is a means of manipulating data so that patterns and relationships can be revealed. Important elements of an analysis strategy include using categorisation, classification and numerical analysis followed by identifying associations, correlations and causal linkages.

- A good way to reveal patterns and relationships in data is to visualise them. Important visualisation techniques include diagrams, flow charts, graphs and matrices (grids).

- All managers have their own cognitive style, which influences the way they see the world, and their own cognitive strategy, which influences the way they identify with information, process it and use it to tackle problems and tasks. An understanding of cognitive style and strategy can help with the development of communication and can influence strategies.

- A number of techniques can facilitate individual and group creativity. Particularly useful to the consultant are mind mapping, brainstorming, features analysis and Delphi auditing. These may be supported by ad hoc visuals.

Key reading

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Further reading

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Case exercise

Businesses in the chemicals sector

Table 9.4 Businesses in the chemicals sector

Firm	Annual sales (£m)	Growth (5 yr. av.) (ROCE %)	Profitability %	Product types	Sales base
Gigachem	5000	5	12	Wide range	International
Foodprod	30	10	10	Food additives	UK
Allchem	3500	6	7	Wide range	International
Bioadd	2	32	15	Specialist	Europe
Pharmchem	50	13	11	Pharmaceuticals	UK
Engomat	35	10	10	Engineering products	Europe
Specmat	5	30	20	High purity	Europe
Vorchem	1025	−4	5	Wide range/low cost	International
Marlube	507	−5	11	Lubricants	Europe
Monolay	54	3	21	Surface coatings	UK
Evero	5	10	16	Biotechnology	Europe
Danay	10	8	18	Biotechnology	UK
Emaprod	1502	6	5	Wide range/low cost	International
Vormadol	42	10	14	Lubricants	Europe
Gusta	15	−2	12	Food products	Europe
Drugserv	25	10	14	Pharmaceuticals	Europe
Coatex	150	7	12	Surface coatings	Europe
Megachem	4502	6	6	Wide range	International

The information in Table 9.4 relates to businesses in the chemicals sector. It has been collected using the Internet. Your team has been called in by a manager from Danay. She has asked how strategy in the sector affects performance.

Q1 Develop a visual representation to make the relationship apparent.

Q2 Consider how the presentation proposed might improve consultant and client understanding of key strategic issues.

Q3 Consider how the representation might be used creatively to generate ideas on strategic options.