

CAFÉ

User's Guide

Version 1.2

Important note:

This manual describes a set of principles for supporting strategic thinking. The manual references an add-in module that only worked with an older version of the Decision Explorer[®] software so the CAFÉ menu of the module, as described here, is no longer available. However, the analysis portion of the software is still available (via the Banxia Software web site), so you can access it via the command line instead of the menu. The web page below describes this in detail should you wish to experiment with the analysis.

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The PDF version of this document is available from
<http://www.banxia.com/dexplore/cafe.html>

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Introduction

Welcome to the Construction Alternative Futures Explorer (CAFE). CAFE has been developed to help you to create models containing information which will support your strategic thinking. The method used in CAFE follows closely the approach which managers naturally adopt to think about possible future business environments, that is, it supports the gathering, structuring and analysis of information from soft data sources, such as newspapers, trade press, oral intelligence, and industry commentaries. By using CAFE it is possible to hold and manipulate a large quantity of data, from diverse sources, and to integrate it into a number of internally consistent scenarios or alternative views of the future.

There are two parts to CAFE, the software and the methodology. The software is based on a causal mapping tool known as Decision Explorer[®] (which has uses beyond those embodied in the CAFE methodology). The CAFE methodology is a specific approach to data extraction, structuring, analysis and presentation which has been developed with the needs of decision makers in mind. This manual explains how to use the software associated with CAFE, how to extract data for use in CAFE models and how to build, analyse and present the models.

CAFE can be used in either a single user/decision maker context or in a group context. In a group context a facilitator is needed. Facilitated use of CAFE requires the involvement of an “independent” facilitator (or facilitators) to guide the process of model exploration and scenario building. The facilitator is independent in the sense that he or she is not directly involved in the decision making process which CAFE is being used to support.

The development of CAFE has been based on work with contracting organisations operating in the construction industry, so the examples given in this user guide are taken from the construction industry.

The purpose of this software

When managers think about opportunities for business development they have to think about the future. Thinking about the future means having to think about uncertainties in the business environment. Dealing with uncertainty is difficult, but a method which helps in this situation is scenario building. CAFE is intended as a “thinking tool”. It does not provide neatly packaged answers to strategic management questions but its purpose is to stimulate thinking around specific issues relating to the future, encouraging users to consider the uncertainties in the business environment, to explore a number of possible outcomes of current events and to build a picture of a number of alternative possible futures (a number of scenarios).

During the development of CAFE, its prototyping and testing, it was obvious that managers dream of having a crystal ball for foretelling the future, so that strategic decisions can be made with a feeling of security and confidence. CAFE is not a crystal

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ball, but used either individually or as a group decision support tool it can help managers to explore their perceptions of the future, to test them against feedback from industry commentators and pundits and in so doing to gain a clearer understanding of what drives change and how current events might play out in the future.

What are the benefits of using CAFE?

CAFE allows you to integrate, manipulate and display a vast quantity of soft information, from diverse sources, in a clear and efficient manner. It allows you to analyse and structure this soft information, building “causal narratives” about the future in a logical manner, for either individual use or for presentation and discussion with a management team.

Using CAFE as part of strategy development workshop, with a group of managers, allows them to question and validate their assumptions about the future and to share information. CAFE facilitates the exploration and widening of managers’ perceptions of their business environment and possible developments in it, while focusing attention on and stimulating thinking about the future in a new and innovative way.

In the group setting CAFE can also help to generate a greater degree of consensus amongst decision makers, disseminating information and thinking throughout a wider circle of management and helping managers in the organisation to act consistently, rather than “pulling in opposite directions”.

Terminology

The software which CAFE uses is based on a package called “Decision Explorer[®]”. The terminology used in this manual is consistent with that used in the Decision Explorer[®] documentation. Sufficient detail has been given in this guide so that it is possible to use CAFE without reference Decision Explorer[®] documentation, although you may wish to work through the tutorial which is provided with Decision Explorer[®] in order to familiarise yourself with the basic method for creating, editing and linking data.

Definitions

Only those definitions required for understanding the operation of CAFE are given here.

Concept (event statement): the Decision Explorer[®] manual refers to the unit of data entry as a “concept”. In CAFE the term “event statement” is used, rather than concept, to reflect the content of the statements in the model. An event statement is a short phrase describing an event or significant occurrence in the organisation’s business environment. The content of these statements is determined by applying one or more of a set of principles which guide data identification, and which have been derived in order to identify information of scenario significance from “soft” data sources. These principles are described in the section entitled “Identification of data for inclusion in a CAFE model, page 14”. The event statements form the nodes in a network linked by arrows, showing the causality of events.

Command line: Decision Explorer[®] and CAFE can be operated using the menu system, but a command line facility also exists. The command line appears when any of the keyboard characters is used. Pressing the *ESC* key hides the command line.

Cotail: a composite tail (cotail) is an event statement which has multiple consequences. The cotail command identifies the composite tails in a model and then displays them in style groupings.

Head: a head is an event statement which is at the conclusion of a chain of events, that is, heads are the outcomes or the result of a chain of events.

Hieset: the hieset command is used to identify hierarchically clustered sets. A set or group of event statements is specified as the “seed set”. The analysis then traces down the model identifying all of the statements which support or explain the statements in the seed set.

Links: in a CAFE model events are linked on a cause and effect basis. The links are represented on the screen display by arrows. Two types of links are used, simple *causal* links and *taxonomic* links. Causal links are used for the situation where “event A leads to event B” and are represented by a unidirectional arrow. Taxonomic links are used in the situation where event A is not the direct cause of event B, but event A is a subset of or a part of event B. For example, the public sector activity is linked to (includes) local authority housing activity, which links to (includes) housing maintenance activity. This is a typical taxonomic hierarchical structure, and both directions in each link have meaning, since maintenance work contributes to (is part-cause of) overall local authority housing work, which in turn contributes to (is part-cause of) public sector activity. Taxonomic links are represented by double headed arrows, illustrating the two way connection between the event statements.

Memo cards: in CAFE memo(ry) cards are used as the means of storing data about the source references for event statements and also to store any supporting or explanatory text which may be wanted. The memo cards “sit behind” the event statements. The existence of memo cards is indicated by a small paper clip symbol, which is overlaid by a red “T”, if there is text present in the body of the memo card.

Model, map and cause map: the terms model, map and cause map are interchangeable when they are used to describe the data set as a whole, that is all of the event statements which are contained in a particular CAFE model file. The term “map” is also used in the context of a “map view”, which may show only part of a whole map or model, if the data set is too large to be displayed legibly on a single screen view.

Model builder and model user: in a single user setting the terms “model user” and “model builder” are synonymous. When CAFE is used in a group setting it is assumed that the model builder can be either a researcher or strategist based within the organisation that will be using the model or an external strategy consultant, and that the model builder is not the model user.

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Opposite poles and "rather than": the opposite pole of an event is an alternative outcome, not necessarily a good as opposed to a bad alternative, but simply an alternative, event A rather than event B. In the software opposite poles are shown like this:

"pause for breath ... plunge into recession"

The ellipses (three dots) are a shorthand for "rather than". Opposite poles are used to express the uncertainty of events. The aim, when considering whether or not an opposite pole exists is to decide if, realistically, there is or are alternative outcomes for the event being considered. This is NOT a matter of manufacturing alternatives for every event in the model, but is intended to get the model builder or, in a group setting, the model users, to consider what is driving change and whether or not it is really possible for a particular event to have more than one outcome.

Scenarios: scenarios are narratives about possible future business environments which an organisation might have to face. They illustrate the interaction between the various forces at work in the business environment and constitute a more complex consideration of the future than a consideration of a series of isolated "what if" approaches. In the context of CAFE a scenario is a causal narrative, displayed in a map format. The scenarios produced as a result of using CAFE go beyond a simple "what if" approach in that explicit consideration is given to the underlying forces driving change and the effects of the outcomes of events can be seen in context and their consequences can be explored.

Scenario snippets: scenario snippets are groups of event statements which the model user identifies and extracts from the model in order to build up customised scenarios, addressing his or her particular needs. If a scenario is seen as a whole story then the scenario snippets are small pieces of the story. Additional event statements may have to be added to the model to connect the scenario snippets together, but this is all part of the scenario building process.

Set: a set is a group of event statements which share some common characteristic(s).

Style: styles are the colour and font characteristics which are attributed to a particular group of event statements within a model. Each style is given a name, such as "past_event", "commentary", etc. , which reflects the character of the data being presented using that particular style.

Tail: a tail is an event statement which is at the start of a chain of events.

View: a view is a window which can be used to show either a text or a map display. The *view* menu, *text display* and *map display* items toggle between the text and map displays in each view. With a large model it is not possible to view the whole model on a single screen view and still be able to read the event statements. There are, therefore, a number of map views (effectively separate windows) each of which can be used to display and manipulate groups of event statements.

Commands

The Decision Explorer[®] commands which are required for the operation of CAFE are given in this manual. The appropriate commands appear in the sections to which they apply, for example the commands for creating and editing event statements appear in the section on model building, while the commands for set creation and manipulation appear in the section about the use of sets. A fuller description of the commands available in Decision Explorer[®] is given in the Decision Explorer[®] manual and user guide.

CAFE Overview

Display format

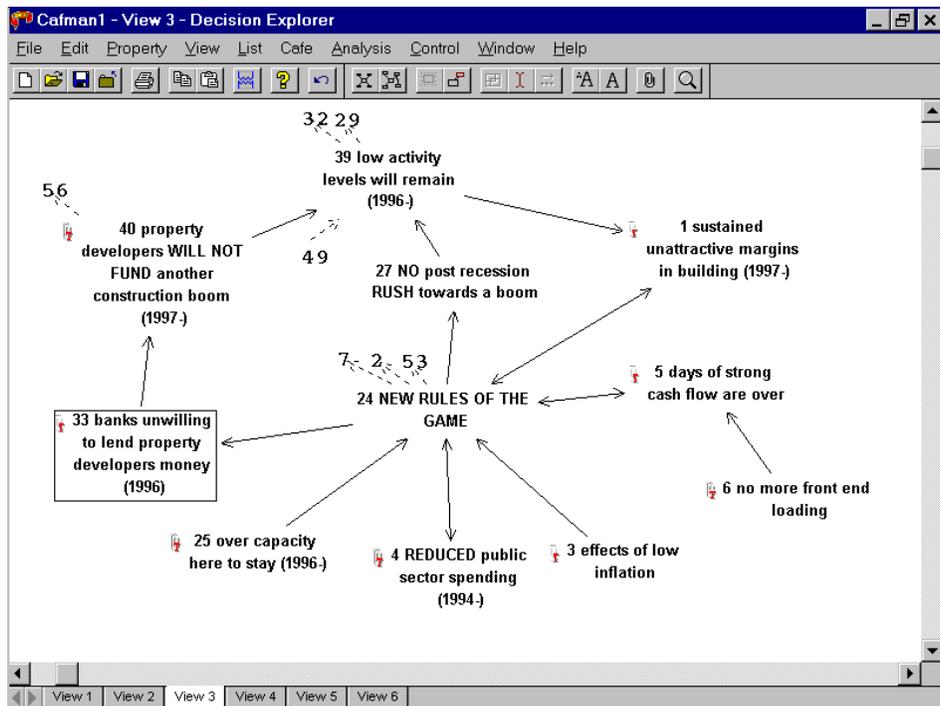


Figure 1.

Figure 1 above illustrates the contents of a CAFE model and shows a map view which would serve as a starting point for model exploration.

The short phrases are event statements, which are identified by applying a set of guiding principles for the identification of CAFE data (see Model building - data identification, page 11). Each event statement is attributed to a particular style category (see Model building - data structuring, page 37) which is distinguished by a defined combination of text colour and font. The styles used for data structuring and presentation are “past_event”, “commentary”, “activity”, “capability” and “so_what”. The event statements are linked using either a single headed arrow, which represents a “leads to” logic, or a double headed arrow, which is a taxonomic link. The single headed arrow is read as “leads to”, “causes” or “contributes to”. The taxonomic link denotes a two way “category” type relationship, where one event statement is a higher level representation of the other. Causal links can be either positive (“leads to”) or negative (“does not lead

CAFE Overview

to”). Negative links are indicated by the presence of a small negative symbol adjacent to the arrow in the map display.

The number at the start of each statement is a unique identifier which is automatically generated and attached to each piece of data. The display of these reference numbers can be turned off if desired.

The small dotted arrows, which are shown here with an associated reference number, indicate the existence of data linked to but not shown on the current display. These dotted arrows are referred to as hidden links.

The box which appears around the statement numbered 33 is the “select box”. This means that this piece of data has been selected and various operations, such as editing the statement text, changing the position of the statement in the display, and so on, can be performed on that piece of data.

This map view forms part of a larger model. It should be noted that there is no right or wrong size for a CAFE model, the number of pieces of data in the model is determined by the needs of the users.

Model building

A CAFE model is built by extracting strategically significant information from published data sources and coding it into a form which can be presented using a map format. In a group setting the data sources which are used should be a combination of those which the end users of a particular model acknowledge as being useful in informing their strategic thinking and sources which, in the model builder’s opinion, are relevant to the situation being examined. The model builder will have to justify the choice of data sources to the end users of the CAFE model, so understanding the end users perspective at the outset is important. Examples of some of the data sources which were used during the prototyping and testing of CAFE are the Financial Times, the Economist, the Construction Forecasts, Contracts Journal, Building Magazine, New Civil Engineer, the Scottish Economic Bulletin, and Management Today.

The data which is incorporated into CAFE models is identified by applying one or more of a set of principles, which have been derived by inviting experienced scenario builders to characterise the type of information which is useful when building scenarios about possible future business environments.

A set of rules has been defined for determining the phraseology of the event statements and for the data structuring. The phraseology of the event statements is important for two reasons. Firstly, because the data should be presented in terms of events. What this means is that a statement such as “Labour say that they will introduce a minimum wage”, would be recast as “Labour introduce minimum wage”, the consequences of this, using the “leads to” logic of the linking arrow, would then be added. If the data is not phrased in terms of events it becomes difficult to make links between the event statements, to read the model and to build scenarios. And secondly, the phraseology is important because it should be clear what the important point is in an event statement, so that the crux of the matter (which may be the active verb in the statement) can be capitalised for

emphasis, for example “survival through REDEFINITION OF SERVICE rather than business as usual”.

The event statements are attributed to one of the five display styles (activity, capability, so_what, commentary and past_event). These styles are distinguished by variations in text colour and font, so that the more important “activity” and “capability” statements stand out in the display. For model building purposes a number of sets can be used which help when checking that related data is linked. Any number of user defined sets can be used during model building. A further group of sets, the “FUT~” sets, are used during the analysis of CAFE models.

Model Analysis

“Step” events are attributed to the FUTSTEP set by the model user(s). Step events are characterised by being occurrences which are sudden, producing a step change in the business environment, rather than just being the continuation of a trend. There should either be a marked and definite change in a situation, or a trend should have reached a significant outcome. For step events there is likely to be an opposite pole contained within the statement. That is, a converse or “rather than” part of the statement exists, for example “environmental considerations prevail, rather than national and economic considerations”.

Analysis of CAFE models is carried out using the *scenario* item from the CAFE menu or by typing *scenario* on the command line. This analysis identifies event statements in the model which are both cotails (composite tails) and members of the FUTSTEP set. A cotail is an event statement which has multiple consequences. The analysis looks for FUTSTEP/cotails which are at or near to the start of a chain of events. These event statements are seen as being an important starting point because, in scenario terms, it is events with multiple consequences which are of interest.

CAFE has the facility for working with a series of separate views, each of which can contain both a text and a map display. The results of the model analysis are presented in a series of separate model focus areas, usually one area per map view. The focus areas should contain no more than about 15 to 20 event statements, so that they are easily legible and their content can be assimilated quickly. These focus area views provide a starting point from which model exploration “fans out”.

Model use

Following the guidance given in the sections on model exploration and scenario building, event statements and their linkages are edited and put together to form scenarios. This is done by identifying groups of statements (“scenario snippets”) which will form the building blocks of the scenarios, looking for links between these groups and providing additional event statements as required. The events contained in the scenarios should be ones which, if they come to pass, will have a big impact on the company and the way that it operates.

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At the end of the scenario building process the question which the manager/decision maker should ask is: “how prepared are we for the possible futures which we have just identified?” Going through the scenario building process, exploring possible future events and understanding what drives change, should help managers to the answer the questions: “what do I need to look out for in the business environment? What are the signals of change?”

CAFE help file and model overview

A “front end” help file exists within CAFE which contains model building help and takes the model builder step-by-step through the model building process. However, this help file contains only a summary of the principles which guide the identification of data for inclusion in CAFE models. It acts as an aide mémoire for that part of the process, rather than a complete, on-line guide. Reference should be made to this manual for a full explanation of these principles.

The facility to add a customised help file also exists. This is the “model overview” facility and is accessed via the *help* menu, *model overview* item. This facility allows the model builder to provide an overview of the contents of the model and an indication of the topic covered in each model focus area.

Model building - data identification

This section details the stages which are involved in identifying data for a CAFE model. It discusses the general model building considerations (time horizons, the “level” of the model and numbering series) and more detailed model building considerations such as the choice of data sources and the guiding principles which should be applied when identifying data for inclusion in a model.

General model building considerations

Setting the time horizon

When building a model some sort of time horizon will have to be set. This will have a bearing on what is included and what is not included in a model. Models are usually built in response to a particular strategic issue, with a particular time frame attached. The time frame need not be so specific as “in 10 years time”, but it may be couched in terms of “within the next 10 to 15 years”.

Dates, a year or a time period, are attached to events when they are recorded in the model. If possible all event statements which have implications for the levels of construction activity should be dated. Some, but not all, of the event statements which provide supporting commentary and historical detail (*past_events*) will require dates, for example, where the event statement details the introduction of a piece of legislation. Statements which detail the capabilities which an organisation might have to acquire, develop or maintain need not necessarily have a timescale attached to them, unless they detail a date by which compliance must be achieved, for example, with a new set of safety regulations.

The attribution of dates and timescales to events to give a chronology and to help with the ordering of events. It is NOT intended as a prediction of the exact time at which an event will occur. This is NOT a forecast!

The time frame attached to occurrence of some events will be subjective, so there may be some dispute as to which events fall outside the time frame of the model and which do not. Apply a test. Consider the historical rate of change of the phenomena under consideration. Ask yourself whether or not these events are likely to occur during the life time of one generation (i.e. approximately 20 years) or in the life time of a government (i.e. about 4 or 5 years).

Building the model at the right level

Models can be built at different levels. “High level” models address broad national and international issues (political, economic, societal and technological issues) which will have an impact on the company. “Lower level” models address more detailed market

Model building - data identification

specific issues, dealing at, say, a regional or sectoral level. For a construction organisation an example of this might be a model for a specific study of the activities in the retail sector. There will, invariably, be an overlap between some of the information contained in a higher (national level) and a lower (sectoral level) model.

It is important when building a model, at any level of detail, to understand what is driving change. What are the underlying forces which will cause an event to play out in one particular way as opposed to another? What drives change? Building a model with too much “nitty-gritty” detail is as unhelpful as building a model which is too broad-brush and “macro”. Understanding the driving forces behind events helps the model builder to pitch the model at the right level.

From the point of view of an external consultant, using CAFE as part of strategic planning exercise, it should be noted that although the approach used in CAFE is applicable for building scenarios at any level (macro-economic to sectoral), models are best built with a particular company’s specific strategic issues in mind. Developing a set of general, industry scenarios is usually not helpful for clients.

Data numbering series

It is sometimes useful when building a model to maintain distinct sets of numbering series for different types or sources of information. This is an important discipline when building up information in a number of separate models which will be merged into a single model at some future date. The use of distinct numbering series may be required because you want to distinguish between information added by different users, or between information relating to different regional sources. The distinction between sources, provided by numbering series, is in addition to that provided by the use of memo cards, and is not intended to replace them. The memo cards are the primary means of attaching a source reference and text in support of the brief statements which appear in the models.

An example for the use of numbering series in a CAFE model, to distinguish between event statement groupings, is given below:

Series 1-99:

Used in a “general” model. Only used for statements which have been derived from referenced texts. All of the event statements in this series are supported by memos which give the source reference and, in most cases, supporting text.

Series 100-199:

Used in the regional model, for example a London focused model, containing statements which make reference to events which are only likely to be of interest to London based contractors. All of these statements are supported by memo cards giving the source reference and, in some cases, supporting text.

Series 200-299:

This series is used for statements which have been generated by the user. They can be of two types:

Model building - data identification

- i) generated to provide an outcome to a chain of events (a so_what statement)
- ii) providing a starting point for a chain of events, detailing a historical event which is “known”, but which is not referenced in the model source data.

These statements do not have memos providing a source reference and are not necessarily attributable to one of the guiding principles directing data selection, they are intended to make the maps more readable.

Series 300-399:

This series is used for "client specific" event statements. If the model builder and the model user are different people or are from different organisations, then this numbering series is used for those statements added by the model users and which are informed by the users knowledge and experience. The users of CAFE models should be and are encouraged to customise the data in the model and to add their own data.

This is just one example of the use of different numbering series in a CAFE model. It is possible to have a total of 32,000 separate data entries in a model, so a reference number between 1 and 32,000 is valid. The model builder is at liberty to use any numbering sequence which is considered to be appropriate to the model use.

Commands:

Creating a new model.

When Decision Explorer[®] starts it will automatically load the last model that was opened, unless this option is disabled. To create a new model either click on the ***new model*** button or select the ***file*** menu, ***new model*** item.

Opening an existing model.

To open an existing model either click on the ***open*** button or select the ***file*** menu, ***open model*** item. Select the chosen model in the dialog box which appears and then click the ***OK*** button.

Creating and editing event statements.

There are two ways in which data can be entered into a model. Place the mouse at the chosen position on the screen, double clicking on the screen and then enter the text when the mouse pointer changes to an “I-beam”. When the entry is complete either press ***enter*** or click the mouse on the screen anywhere away from the text which has just been created. To cancel the new entry press ***ESC***. The second way to enter data is to use the command line. Type an “=” character. The command line will appear along the bottom of the screen. Type the required text and then press ***enter***, when the operation is complete. The command line will remain visible until the ***enter*** key is pressed.

(cont.)

Model building - data identification

Positioning data on the screen

To change the position of an event statement on the map place the mouse pointer over the text area of the event statement to be moved and click and hold first the left mouse button and then the right, so that both mouse buttons are held depressed. The mouse pointer will change to a hand. Keeping the mouse buttons depressed drag the selected text area to its new position on the display. Release both mouse buttons when the event statement is in the desired position.

Renumbering individual event statements.

When data is entered a unique reference number is added automatically to each piece of data. Starting from 1 the next available number in the series will be used each time a new piece of data is added. To change the reference number associated with an event statement type in the desired number when entering the data i.e. 100= sudden change in market conditions. Having entered data entry 100, the next piece of data entered will automatically be numbered 101, unless another number is stated.

Alternatively enter the data, using one of the methods described above, and then select to statement to be edited, click the *right* mouse button and select *edit concept* from the pop-up menu. The reference number can now be edited.

Identification of data for inclusion in a CAFE model

Data sources

Part of the motivation behind the development of CAFE was the desire to acknowledge the importance of “soft”, qualitative data in informing thinking about alternative futures. From the work which was carried out with practising managers in the construction industry it was found that there are three types of data which are generally used for planning: trade data (information about volumes and prices), trade rumours (planning lead type information) and contextual data, about the business environment, which has long term implications. It is the last of these types of information which informs strategic thinking. This data tends to be qualitative rather than quantitative and comes from interpretative sources, digests of information, commentaries and reports of opinions and interviews, in sources such as newspapers and the trade press. This is “soft data”, in contrast to the “hard”, quantitative, data contained in sources such as the housing and construction statistics.

The data sources used when building a CAFE model may be published, public domain sources, private or in-house sources.

Note: The scenarios which are ultimately created using CAFE are bounded by the vision contained in the data sources and any insights which the scenario builder might add. The more diverse the data sources the greater the scope for innovation and new insights into the strategic issues which are being addressed.

Model building - data identification

The sources of information used should be those which both the model builder and the end users of the model consider to be “reliable”. As a model builder, working for a client, it is important to obtain an indication of what the client (the end user(s) of the model) considers to be suitable data sources. Beyond this it is a matter of judgement which data sources to use and whether or not their use could be justified and defended.

Rule: When building a model, daily publications should be scanned last, after monthly, quarterly or annual digests of information. The daily publications used should include both the editions which cover, and those which follow on from, the first part of the review period.

Principles for identifying CAFE data

The principles which are described below are intended to act as a “filtering” mechanism. The model builder reads a data source and identifies information which he or she considers might be of relevance to a scenario building exercise. The selected information is then compared against these principles to establish whether or not it should be included in a model.

Data may be extracted and classified under one or more of the principles given below. Principles 1 and 2 are described as “general principles” because they will always be applied in conjunction with one or more of the “specific principles”. The specific principles are broken down so that finer definition and examples of the principles is given under six “leading principles”.

A note about scenario building

Scenario building as much an art as a science and involves a large degree of subjective judgement. The guiding principles have been derived by characterising the type of data which experienced scenario builders consider to be relevant for inclusion in scenarios. They provide a filtering mechanism through which data can be viewed. When reading a report or an article the model builder should have at the back of his/her mind the question “is what I am reading an example of principle 1, 2, 3 etc.?” Does it provide, for example, an indication of a change in international trading conditions, as noted in principle 5? The report or article itself may not say so explicitly, but the conclusion about a change in trading conditions might be one which could reasonably be drawn from the information provided.

In applying the principles guiding data identification, it is not so much a question of “looking for proof of”, it is more a question of interpreting the information, of trying to get a sense of what underlies it and what the implications of it might be, in other words developing a feel for the importance of the impact of the events which the information represents.

The data extracted using these principles forms the basic building blocks for the construction of scenarios. The CAFE analysis gives a starting point for model exploration and the scenario assembly guide provides the guidance for finishing off the scenario building process.

Model building - data identification

The guidance given here, which is intended to give focus to the data gathering process, is as extensive and as clear as it is possible to be, without being too prescriptive and narrowing the view of the data gatherer. Experience may lead you to add more “rules” to this list, to give finer definition and clarity to the principles, as you become more familiar with the CAFE methodology.

General principles guiding data identification

PRINCIPLE 1. Events (or suggested events) which will have repercussions over a number of years

For all of the data which is extracted following the specific principles it must be possible to say that the events identified will have repercussions over a number of years. When building a model a time horizon will have been set (for example the model might consider developments likely to happen during the next 15 to 20 years) and this will have a bearing on what is included in the model and what is not.

Note: Principle 1 applies in all cases

The timescales over which the events will play out will vary but the basis of the “futuraity” of events is that they will have repercussions at some time in the future, even though it may not be possible to say exactly when the impact will occur. Examples of such events might be the introduction of a new technology, a change of client behaviour or a change in the legislative or regulatory conditions which effect an industry.

Example: *an illustration of an article reporting events which exhibit “futuraity”.*

“Weighting of property in the average pension fund investment portfolio has fallen steadily from its 1970s peak. If the trickle of money back into property is to be more than a temporary move, the [construction] industry will have to do more to accommodate these powerful investors. Fund managers and their actuarial advisors have been happy to drift towards equities ... rent collection and management fees tend to discourage fund trustees and eat into returns which are already lower than equities. For all but the largest funds, illiquidity and administrative hassle are powerful reasons to steer clear of property. By linking pension liabilities to gilts for the purposes of solvency testing the Government White paper proposals will favour bonds rather than property as an investment.”

Financial Times 14.09.94. p14

The event statements which result from this report would read:

“fund managers less tolerant of illiquid assets (1994)”; “pension funds are shunning property (1994)”; “White paper on pensions: fund managers move further away from property (1996)”.

Also from this article it was noted that occupational pension funds control approximately £450 billion, with investment potential, and that the ageing of pension schemes is also effecting a move away from property as an investment. Details of the size of the funds available for investment would be placed in to the memo cards, together with those parts of the article which add more detail or explanation as to the

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importance of the events, and which have not been mapped directly into the event statements. Detail such as the fact that the weighting of property in the average pension fund investment portfolio has been steadily falling since the 1970s, that there has been a slight trickle of investment back into property but that further investment requires stimulation or positive action and that factors such as rent collection and management fees make property unattractive may all be placed in the memo cards.

A question arises from this article: is there a means of overcoming the unattractive features of property as an investment? This means that a “so_what” event statement could be added to the model which might read “overcome unattractive features of property as an investment”, or more usefully it might detail a possible solution to this problem, such as developing a new and more flexible financing package for property development. So_what statements are used to conclude chains of events. They are generated by the model builder or model users and so do not have a source reference attached to them.

A map of the event statements arising from this article would look like that shown in figure 2. The initial event statement, “ageing of pension funds”, is not mentioned in this particular article but has been provided from another source reference. It is styled as a “past_event” because the fact that pension funds are ageing can be established from quantitative research data, in other words it is a “historical fact”, a past_event. Further consequences of pension funds shunning property might be added as additional so_what statements, giving more detail about possible outcomes, such as detailing the effects on a particular market area. It may be possible, through further research, to add a degree of quantification to the effects of pension fund investment activity but the details of the quantification would be added to the memo card, rather than to the map. The reason for adding this quantification to the memo cards rather than to the model is to avoid moving the model towards becoming a “forecast”, focusing attention on the numbers and specific outcomes rather than encouraging the exploration of multiple possible futures.

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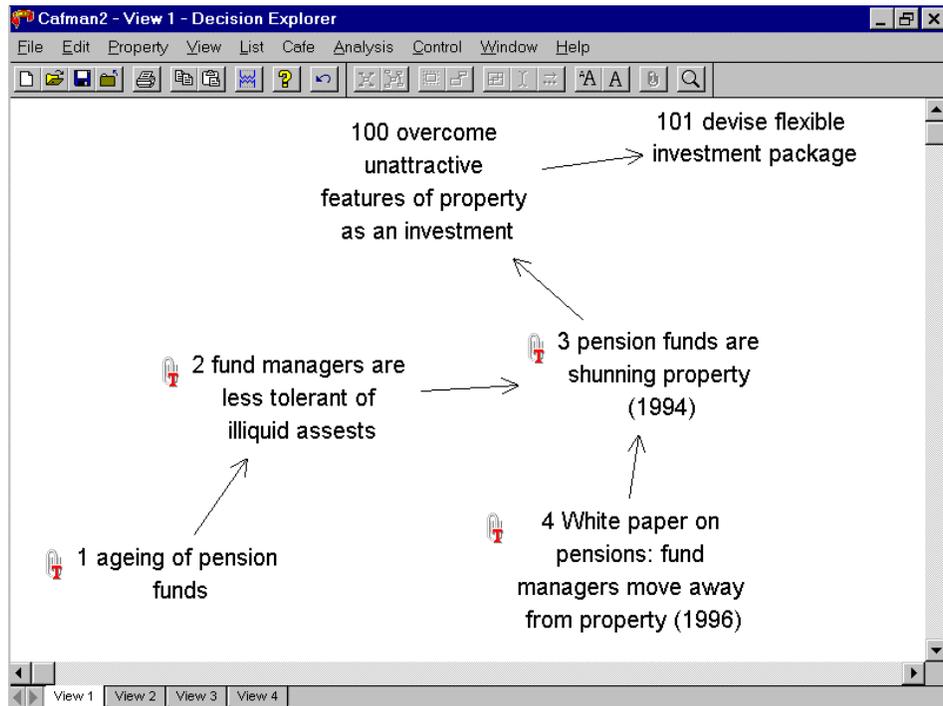


Figure 2

PRINCIPLE 2. A puzzle for the industry

When the data does not stack up! Part of the purpose of CAFE is to highlight puzzles or conflicts in information or different views of the world, as presented by “reliable sources”. These conflicts may emerge in data from different sources or there may be a puzzle in a single data source, where the puzzle is either acknowledged in, or may be deduced from, the information in the data source. This principle is aimed at identifying *single source puzzles*, which should be extracted and put into the model. Puzzles or conflicts caused by data from multiple sources will emerge naturally.

Example: *an illustration of an article presenting a puzzle.*

“Whereas the economy is expected to grow by 7.5% between 1994 and 1997, the output of the construction industry is forecast to improve by less than 3%. Since it is anticipated that investment will increase by 15% over the period, the gap between the rate of growth of investment and that of construction can only be attributed to a faster rate of investment in plant, machinery and other non-construction assets.” Construction Forecasts. Summer 1995. Vol. 1:3. p1.

In this example the “puzzle” is explained, but that may not always be the case. The puzzle is the difference between the increase in investment, running at 15%, and the increase in the level of construction output, running at only 3%. The event statements which result from this report would read:

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“puzzle: 15% increase in investment compared with less than 3% increase in construction output (1995-1997)”, “faster rate of investment in plant, machinery and non-construction assets”.

These event statements support the addition of a statement which reads “subdued forecast for construction”, which is also supported by data from other sources. However, there is also the implication that companies will soon be investing in new building work, given that they are currently investing in new plant and machinery, and historically investments in plant and machinery precede investment in buildings. Further research could reveal more detail about which market sectors are currently investing in plant and machinery and hence where there is likely to be building work in the future.

A map of the event statements from this article would appear as shown in figure 3, below. Supporting and/or contradictory event statements would then be added as explanation of this puzzle. Event statement number 4, is an example of a “so_what” statement which might be added, if further research revealed that this is an area of current investment where, as a result, future construction activity might follow.

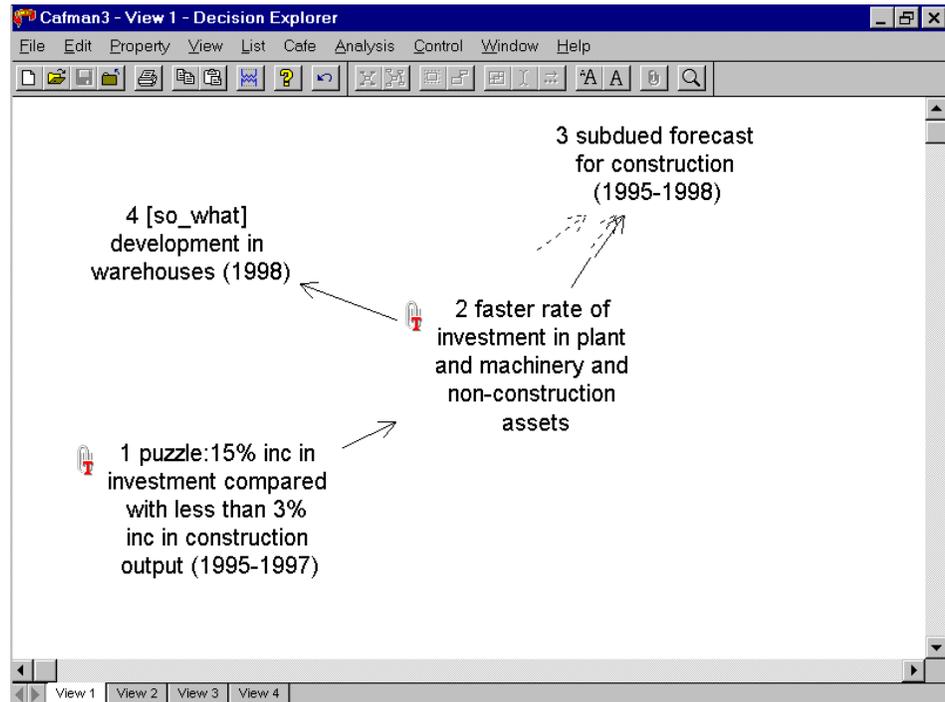


Figure 3

Model building - data identification

Specific principles guiding data identification

The classification is based on six “*leading principles*”, each of which provides a broad heading beneath which finer definition of the principle are given. The presentation of each of the principles goes from the general to the more specific. Examples are used to demonstrate the application of the principles.

Summary of the six “*leading*” principles and their subordinates

PRINCIPLE 3. Political, economic and societal change which will lead to a change in demand characteristics.

- * a shift in client and/or user attitudes
- * an industry body or government planning the introduction of new legislation or a new regulatory system
- * the creation of and action by a powerful lobby group or coalition

PRINCIPLE 4. Technological breakthroughs.

- * the emergence of a new or advanced technology
- * the emergence of a new way of doing things which may lead to a technological breakthrough
- * a previous technology failure comes to light

PRINCIPLE 5. Changes in the volume or structure of a market.

- * a yes/no step function which will have an impact on market size
- * a change in market structure
- * a shift in competitive positioning between organisations
- * a change in international trading conditions

PRINCIPLE 6. A major player showing signs of strategic change.

- * a change in the declared “central strategy” or policy of a major player
- * a major player has introduced a “new recipe” or a new way of working
- * a major player is “shaking themselves about”
- * a shift in the behaviour of construction related industries

PRINCIPLE 7. The resolution or complication of current strategic issues in the industry.

- * a change in industry wide training regimes

PRINCIPLE 8. Analysis of past events or deductions about future events.

- * an explanation of previous events which now shows a “lock-in” situation
- * the expectation of an intervention as a consequence of a future predicted event
- * previously anticipated events are now not going to happen

Detailed description of the specific principles guiding data identification

PRINCIPLE 3. Political, economic and societal change which will lead to a change in demand characteristics.

Organisations are usually interested in environmental changes which could lead to changes in the characteristics of demand in their markets (and potential markets), or environmental changes which could lead to variations in the volume of demand in existing markets. The purpose of this principle is to draw attention to general societal shifts which, when they percolate through to procuring clients, will cause changes in demand characteristics, rather than changes in the volume of demand. For example, a change in societal banking preferences could lead to changes in banks’ requirements for buildings or changes in employment patterns could lead to changes in office requirements.

The focus should be on identifying societal, economic or political changes, which are indicative of shift in client and/or user attitudes, and which will lead to a change in demand characteristics.

Specific manifestations of political, economic and societal change can be through:

- an industry body (not necessarily a construction industry body)
- government planning the introduction of new legislation or a new regulatory system
- the creation of, and action by, a powerful lobby group or coalition.

The reaction to reports of the actions of lobby groups might be to ignore them, assuming that they are going to be ineffective, but they can be an indication of a change in social climate towards a particular issue and they can have an effect. They should be evaluated and should not be discounted immediately. Supporting or contradictory evidence from a variety of sources should be sought. Depending on the model type and purposes it may be appropriate to *track* such events from one model building exercise to another.

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Examples: (i) *a shift in client and/or user attitudes, which will lead to a change in demand characteristics.*

“...an increase in retail space will be needed to respond to the increase in consumer expenditure, the increase in service retailing and the new shop developments by large firms; the increase in space will be provided by the development of a range of shopping centres. Approaching a half of traditional retail sales might well be passing through shopping centres in Scotland by 2005.”

Retailing in Scotland 2005. J.A. Dawson. 1988

This particular report examines some of the developments which might take place in retailing in Scotland at the turn of the century. The event statements which result from this report would read:

“increased demand for retail space (1998)”, “increased service retailing (1995-2000)”, “consumer expenditure increased”, “new developments by large firms”,

More detail about the nature of the developments (for example, that the new shop developments will be more particularly in the non-food superstore area) would be added to the memo cards, together with information such as an outline of the author’s justification for the conclusions which were reached.

(ii) *an industry body or government planning the introduction of new legislation or a new regulatory system.*

“Proceeding in parallel with the Latham reforms and moves to unify the voice of the industry are moves towards a registration system for both operatives and organisations. Although being pushed down this path by EC pressures ...” Contract

Journal 08.09.94 p6

This example is indicative of the spread of more rigorous quality control and quality assurance systems, and demands from customers for some sort of evidence of compliance with recognised standards. The event statements resulting from this report would read:

“EC forcing change on registration generally”, “registration of companies in place (1997)”, “widespread company registration becomes a reality (1998)”.

By the time a regulatory system is introduced the principles behind it may be fairly well entrenched or “widely accepted” amongst the business community. So while the introduction of legislation or regulation is an indication of social and political change, it is not necessarily one of the earliest signs of change. However, the formation of (or action by) powerful lobbying groups is more likely to be an early indication of change.

(iii) *the creation of and action by a powerful lobby group or coalition.*

For example, the action by a powerful group of retail clients, in order to apply pressure for a change in the implementation of planning regulations.

PRINCIPLE 4. Technological breakthroughs.

“But what ... is it good for?” Engineer at the Advanced Computing Systems Division of IBM, 1968, commenting on the microchip.

“There is no reason anyone would want a computer in their home.” Ken Olson, president, chairman and founder of Digital Equipment Corporation, 1977.

Signs that new or advanced technologies are emerging are all around us; the problem is which ones to consider, which of these developments will really affect the business that you are in? There are two areas of interest (which are not mutually exclusive). They are technology within the organisation’s industry and technology in “the outside world”, the environment of your clients and their customers. Within the industry, advances in technology can emerge through new records being set (length, size or speed of construction). A new record being set might lead on to the adaptation of or the more wide spread use of a particular technique. Outside the industry it is important to look for anything which, within a “reasonable number of years”, might change the behaviour of clients or their customers.

What could be called the “sci-fi” view of the future - involving those new technologies which seem so far fetched as to be irrelevant to today’s decisions - might still have something to offer when thinking about the future. These “futuristic” developments are ones which should be tracked. The timescale associated with a model determines which technological factors are included and which are not.

Examples: (i) *the emergence of a new or advanced technology OR a new way of doing things which may lead to a technological breakthrough*

“A new application may transform an industry. Etching technology is about to put new life into high-tech electronics design which might otherwise reach its limits by the end of the century. As a result of this technology multimedia applications, high speed demands and telecommunications requirements for miniaturisation will be satisfied”. Financial Times 08.09.94 p20

This article is important because it demonstrates that the information and communications revolution is not going to run out of steam or stop, and as a result of this, office and manufacturing requirements might change as new technologies are introduced. The event statements which result from this report would read:

“no limit to high-tech electronics design”, “multi-media & telecoms miniaturisation needs satisfied (2000)”.

The information from this article could be tied in with the two articles below, about teleworking:

“... reduction in space requirements caused by teleworking. IT progress could become a strong catalyst to the partial redundancy of centrally located offices”.

Construction Forecasts. Summer 1995. Vol. 1:3. p41

“... there are no technology barriers, legal or cost barriers. The only barrier to teleworking are human ones ... The European Commission, which is promoting teleworking as part of its measures on growth, competitiveness and employment,

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believes that Europe could potentially have 10M teleworkers”. Financial Times 05.09.94
p9

So it is clear that the technology is going to be available to facilitate to explanation of teleworking, which may have implications for the construction industry.

(ii) a previous technology failure comes to light

The emergence of a previous technology failure can lead to a new market in “retro-fits” (repair and replacement). Perhaps one of the most widely publicised example of a technology failure was the use of high alumina cement in moist environments.

Previous technology failures can emerge in two ways: the first is through visible failures of materials and the second is through changes in the understanding of the behaviour and appropriate use of materials in combination with changes in the perceptions of acceptable risk, which lead to a previous use of a material being considered a “failure”. For example, a change in the acceptable level of contamination, when contaminated land is reused for residential or industrial building.

PRINCIPLE 5. Changes in the volume or structure of a market.

In contrast to Principle 3, which is aimed at identifying events which will change the characteristics of demand in a market (the character is what is built), this principle is aimed at identifying events which will have an impact on the volume or structure (the competitive situation) within a market.

Principles 3 and 5 have not been combined because of the importance of identifying underlying forces which drive demand and shape the character of demand in a market, and the competitive positioning of and the power relationships between the players in a market.

The volume of activity in a market is determined by the need for a particular product and buying power of the clients purchasing the products.

The structure of a market is determined by clients’ buying preferences and by how supplier organisations (in this case construction contractors) behave in order to meet the clients’ needs. The characteristics of the demand in a market might not have changed but the structure of a market (in terms of the number, size, form and basis of competition between the supplier organisations satisfying the clients’ demands) can be changed by organisations entering or leaving the market, or through merger, joint venture, take-over or asset swapping activity.

A change in the volume of activity in a market.

The type of events which should be identified using this principle are ones which will cause sudden and dramatic changes to the volume of work. The identification of these events can come through the realisation that it simply does not make sense for a particular situation to continue indefinitely.

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Example: (i) a yes/no step function which will have an impact on market size

Firstly, we need to define what is meant by a “step function”. A step function is a significant event which will cause a sudden and dramatic change in an existing situation. A “yes/no step function” which will have an impact on market size is an event which, if it occurs, will increase or decrease market size dramatically. These events are not the result of trends, but are sudden and dramatic changes which affect a market.

“...The UK is at present consistently under-investing in infrastructure and buildings on international comparisons. This is unlikely to continue indefinitely. On this analysis, a sharp rise in construction investment can be expected sometime over the next five years or so.” New Civil Engineer 25.07.96

It might be judged that one of the implications of this analysis is that UK companies will lose ground and become uncompetitive in international markets because of the lack of investment in buildings and infrastructure at home. Unless the country is heading for a major decline then this investment situation will be reversed sooner or later. Whether or not this will happen would have to be evaluated using the evidence available. If it is judged that there will be an increase in investment then a “so_what” statement would be added to the model, so that the event statements associated with this article would read:

“under investment in infrastructure”, “crisis in international competitiveness (2000)”, “reversal of under investment in infrastructure (2005)”, “sharp rise in construction investment”.

Other examples of step functions which would have an impact on market size might be the release of a large quantity of funding for a certain kind of development or the sale of a large volume of land with development potential. This type of sudden change in activity can also be brought about by the imminent approach of a deadline for compliance with new regulations which requires organisations either to invest the funds and comply with the regulations or to get out of a particular business.

Changes in the structure of a market

Changes in the structure of a market can be caused in a number of different ways. Within a market the competitive positioning and the power of organisations encompasses their ability to influence client behaviour, their ability to react to client needs and mobile resources, their size (both physical and financial), their ability to keep staff and their ability to gain financial backing when needed. So in this context, the idea of the power of an organisation and how it fits into the market structure, relates to the relationship between individual contracting organisations and the relationships between contractors and their clients and contractors and their suppliers. And, in contrast to the usual construction industry usage of the term “suppliers”, the “suppliers” referred to here are not just materials suppliers but include sub-contractors, employees and financiers, the organisations and individuals who supply the organisation with its means of doing business.

Another factor which can have a bearing on the structure of domestic markets is the effect of international influences. Historically UK construction projects have been seen as a “domestic matter”. However, the consideration of changes in market structure should encompass an evaluation of the wider influences on the construction market, for

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example the loss of skilled labour to a foreign country could cause problems in a particular trade in the UK. Even within the UK itself the movement of skilled labour from one region to another, which may be having a “construction boom”, can have an influence on business in other parts of the country. This effect was felt in Scotland when there was a construction boom in the south-east of England in the 1980s.

Although many domestic projects are not thought of as “international” they often have an international dimension in that foreign contractors may have the opportunity to tender for the work, as a main contractor or as a sub-contractor, or foreign materials or labour may be used during the construction work. Depending on how the wider national or international involvement impinges on the projects in a market, a change in international cost differentials could influence the market structure. Changes in national or international legislation may not change the size of a market but may affect the competition within it.

Examples: (i) *a change in the structure of a market.*

The two examples given below suggest a change in the structure of a particular market, specifically the splitting up and polarisation of the office market into a two tier system.

DTZ Debenham Thorpe suggests “emergence of 2 tier market and a reduction in new and good quality office space in the face of more stable demand ... More conservative attitude of clients requiring attractive, functional and efficient space that is seen as genuine value for money both by occupiers and investors”. Glasgow

Herald (Business) 01.09.94

“Sentiment about the trend in the office market is more positive than some months ago. There is widespread support for the view that well located, high quality offices are in demand. The split between high quality, central space and poor quality, fringe space, remains. Some owners of poor quality, fringe property may have to accept that only change of use will enable them to obtain rental income.” Construction Forecasts. Summer 1995. Vol. 1:3. p40/41

These two articles, from different sources, corroborate the view that there will be a change in the structure of the office market, to a two tier system.

These examples illustrate how there can be an overlap between the application the principles guiding the identification of data to be included in a CAFE model. Principle 3 is intended to identify changes in demand characteristics in a market, which are brought about by underlying social, political or economic change, in contrast to Principle 5, which is aimed at identifying change in the volume or structure of a market. But market structure is in part determined by demand characteristics.

(ii) *a shift in competitive positioning between organisations*

“Contractor AMEC this week signed a partnering agreement with airport operator BAA to construct all its runways, taxiways and aircraft stands ... The deal is part of BAA’s move towards joint working under framework agreements with specified companies to improve quality and reduce costs.” New Civil Engineer

26.10.95

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The event statement from this article would simply detail the existence of the partnering agreement and details of what the agreement covers would appear in the associated memo card. The model builder would look for other reports of partnering activity which might support the addition to the model of an event statement which reads “partnering agreements become the norm”, but the addition of any such event statements depends on the information available. The existence of partnering agreements between procuring clients and their suppliers can dramatically change the structure of a market, effectively excluding other, “unapproved” players and new comers.

(iii) a change in international trading conditions

“The 28 members of the Organisation for Economic Co-operation and Development have entered the final stage of negotiations on the world’s first comprehensive and uniform set of rules for foreign direct investment (FDI) ... As well as removing barriers to FDI inflows into each of the countries, the agreement is intended to embody safeguards for foreign investors, backed by a binding disputes procedure ... while clearly helping to nudge countries towards more liberal and outward looking policies its [FDI’s] growth is also creating new policy challenges ...” Financial Times 27.09.96 pXII

The transnational spread of manufacturing and the development of global production networks are changing the structures of traditional markets. National policies towards foreign direct investment have a bearing on how these markets are shaped.

PRINCIPLE 6. A major player showing signs of strategic change.

In the context of this principle a major player may be a major client such as central government, a government department or agency, a large retailer or developer, or it may be a large and powerful construction firm.

The signs of strategic change can manifest themselves in a number of different ways, for example, there might be a report of a change in the declared central strategy or policy of a major player in the industry. A major player may be “shaking themselves about”, that is going through some sort of major restructuring or reorganisations which is indicative of strategic change. “Shake-ups” are always significant because they always have implications. Alternatively a player may introduce a “new recipe” or a new way of working. This may occur when, for example, overseas companies enter the UK market through acquisition, or perhaps directly, and then proceed to introduce new ideas. The “new recipe” or new way of working could manifest itself through internal changes - a new company philosophy which could change the way of working - or through a “traditional” contracting company offering new services.

An influence from outside the construction industry which can have strategic implications is a shift in the behaviour of construction related industries. In this context “construction related industries” is taken in a broad sense in that it includes not just component or material suppliers but also the industries of procuring clients and financial institutions. It is the industries of all of the parties associated with construction projects, who might affect the business that the construction company does and how it does it.

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Examples: (i) a change in the declared “central strategy” or policy of a major player in the industry.

Within the industry reports of a change in the “declared strategy” of an organisation can be received rather sceptically and the reaction can be “Well, they would say that wouldn’t they” or “well, they’re not really going to say what they’re planning now are they”, but the behaviour of Tarmac and Wimpey is a good illustration of this point.

Fourteen months before their asset swap with Wimpey was announced Tarmac announced in the press what they would like to achieve:

“they want housing to be a less dominant part of the business because of the volatile nature of the market. To reduce reliance on housing, “knowledge based” activities will be expanded. The group would also like to see 30% of earnings generated from outside the UK” - Glasgow Herald 28.09.94 p17

Another source said of them that “major spending on acquisitions to achieve greater spread of work was ruled out”. There were numerous reports, in a wide variety of publications which give quite open and definite evidence of their intention to implement a significant strategic change.

Reports of the activities of various players would be considered to see if any patterns emerge or if there is a general pattern with one or two “mavericks” playing through the field in a different way. In the case of Tarmac and Wimpey, while other organisations were operating a “back to basics” policy by selling off parts of their business, these two companies came up with something different. But the intention to make some sort of major change was clearly evident and widely publicised.

(ii) a major player is “shaking themselves about”

“Highways [Agency] turmoil ... under the proposals 500 to 600 jobs are estimated to be under threat in the restructuring, which will see all nine Construction Programme Divisions (CPD) offices around the country closed and replaced by a single office in the West Midlands.”

“... if the reorganisation plans are implemented: “They will lead to a haemorrhaging of the skills and experience required to manage and maintain the network; create greater opposition to road schemes and delay implementation of the programme, significantly increasing costs” New Civil Engineer 15.09.94 p4

This is an example of a client organisation “shaking themselves about”. The event statements resulting from this report would read:

“HA in turmoil”, “internal loss of management skills”, “delays in implementation of roads programme”

Other examples are the reorganisation of the local authority structure and the setting up of trust hospitals. Such shake-ups lead to a lull in construction programmes as the managers in the new regimes “find their feet” and re-establish their priorities. Changes in the management and implementation of building programmes might be the result.

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(iii) *a major player has introduced a “new recipe” or a new way of working*

“... became the first culture director at a major UK contractor ... but the cultural revolution is not being taken lightly. In 1994, Wilson realised Birse had such a bad reputation that unless it treated subcontractors, clients and its own staff better, it faced “oblivion”. Wilson was not the only chief executive to have thought like this. AMEC, Tarmac, Balfour Beatty, Kyle Stewart and the smaller Mansell are among others also trying to change their business cultures”. *Building*

15.03.96 p52

“Dutch owned top 20 contractor Kyle Stewart last year reorganised the way the company works to help clients take a “partnering”, non-adversarial approach to construction”. *Building* 15.03.96 p53

The event statements associated with these articles would talk about “serious efforts” being made to achieve cultural change. The list of contractors in the first article illustrates the spread within the industry of this thinking about changing corporate cultures in order to make organisations more attractive to potential clients. The second article indicates that, combined with efforts to achieve cultural change, Kyle Stewart is positioning itself to take a “partnering” approach to its business.

(iv) *a shift in the behaviour of construction related industries*

“Structural changes resulting from late 80s boom and low inflation preclude a return to the high lending growth rates seen in to 80s. The chief economist at NatWest forecasts only slow growth in lending”. *Scotsman* 05.09.94 p15

“Bank lending to property companies peaked in May 1991 at £41 billion. The reasons for this debt explosion are complex. The reluctance of pension funds and insurance companies to invest in property meant that equity funding was scarce. In the late 1980s development boom the industry’s thirst for finance was great. Encouraged by the high margins which could be made on property lending, the banks were only too willing to fill the funding gap. There is no reason to expect domestic investment institutions to suddenly regain their enthusiasm for property. The recent flow of institutional funding into property looks more like a tactical response rather than a long-term trend. This suggests that before long the banks will find property companies queuing for loans. Many big lenders still feel over-exposed”. *Financial Times* 16.09.94 p13

The event statements which result from these reports would talk about “domestic investment institutions steering clear of property”, that there will be “no return to high lending of the 80s boom” and that “property company demand for loans not met”. This unmet demand for loans might itself lead to opportunities for development, where partnerships, involving alternative sources of funding, form part of the construction package. The possibility for developing such opportunities could be researched and added to the model as “so_what” event statements.

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PRINCIPLE 7. The resolution or complication of current strategic issues for the industry

Current, industry wide, strategic issues tend to be those which are most talked about in the press and in the board room. Examples of these might be the training of craft labour or procurement systems. Training is an issue in any industry. A resolution of a training problem might be heralded by, say, proposals that companies form training co-operatives or by proposals for centrally funded training schemes. Or the situation may be complicated by a loss of labour to other industries or to other countries.

Example: *the resolution or complication of current strategic issues for the industry*

“Leaders of the construction industry warned the Minister for Employment of the adverse effects if the government cuts its contribution to training. The Department of Employment is examining its £1.8 billion training budget. There has been speculation that substantial cuts are planned. Better training could improve efficiency. But with low margins employers need maximum encouragement to train”. Financial Times 08.09.94 p6

The event statements which result from this article would read:

“Government cuts training budget”, “adverse effect on training”, “problem in delivering efficiency improvements”

The implications of this are that another means must be found if the problem is to be overcome or resolved.

PRINCIPLE 8. Analysis of past events or deductions about future events

Under this heading there are three more detailed areas which are of interest, namely:

- (i) an explanation of previous events which now shows a “lock-in” situation
- (ii) reports which provides grounds for the expectation of an intervention as a consequence of a future predicted event
- (iii) the realisation that previously anticipated events are now not going to happen

In the first of these areas a “lock-in” situation is one where it can be said that certain events will definitely be a feature of the future. These events could be described as “pre-determined elements” of the future business environment, in that logic suggests that a particular outcome is an inevitable consequence of the current situation. The events which are under review should reveal a situation which practitioners were not previously aware of or which is now seen in a different light. For example, it may have been assumed that certain privatisations would be revised following a change of government. Consideration of the cost and logistics of such operations may reveal that the situation has now progressed too far to be reversed, without disastrous financial consequences.

Such an explanation of previous events might well lead to a feeling of “Help! We really *are* stuck with this”. A lock-in situation which is revealed in this way may also prompt the reaction that “we do not want to get trapped by this again”.

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The second of these areas, the expectation of an intervention as a consequence of a future predicted event, is not the same as, but is one step removed from, an action such as the direct introduction of legislation. The intention here is to identify, firstly, an event which is likely to occur and, secondly, that as a result of the occurrence of this event that a body will intervene in some way and that the intervention will have strategic consequences for the organisation.

The third of these areas, the realisation that previously anticipated events are now not going to happen, is difficult to recognise because we constantly change our thinking and adjust our expectations. We do not necessarily say “well, I did this because” and evaluate our actions. Identifying this situation is significant because organisations work on the assumption that a particular events will occur, and behave and structure themselves accordingly. So in each round of strategic planning it is important to identify when this situation has occurred.

Examples: (i) *an explanation of previous events which now shows a “lock-in” situation*

Explanations of previous events which now show a “lock-in” situation could include examples such as the irreversibility of successful privatisations of public utilities or the fact that a new government is still locked into achieving certain targets.

(ii) *the expectation that there will be an intervention as a consequence of a future predicted event*

Global warming could be considered as a “future predicted event”. As a consequence of the expectation that global warming will occur there is also the expectation that legislation will be introduced to mitigate the effects of the expected global warming.

The growth in traffic congestion is another example. Various organisations have warned that “grid lock” can be expected soon after the turn of the century (c.2005). As a result of this expected event there is the expectation that some action will be taken to avoid it, so there is an expectation of government action.

(iii) *previously anticipated events which are now not going to happen*

In 1994 a number of contractors were interviewed. They all felt sure that a Labour government would be the result of the next general election and that as a result of this construction spending would increase. Privatisation was seen as a Tory principle. There were expectations that the Labour party would “deliver”, “come good for construction”. There were, however, signs that this might not be the case.

“Labour’s Treasury team, while ostensibly critical of the PFI, underlined the party’s support for PFI principles, leaving no doubt that the initiative will survive a change of government”. Financial Times 22.11.95 p12

The expectations that a Labour government would increase construction spending and abandon PFI are examples of previously anticipated events which are now not going to happen.

Alternative classification of the specific principles guiding data identification

Classification of principles based on “clarity”

An alternative classification of the specific principles is offered here, which relates to the “clarity” with which the information about the future can be viewed. The idea of clarity relates to the definition of the signals about future change, how well defined or how “clear” they are. This classification is given to alert the model builder to a different dimension in the characteristics of the scenario data.

Using this classification the types of scenario data are divided into four categories, which are hierarchically organised. The hierarchy is one of “clarity” moving from the most unclear, the faintest or weakest indications of future change to the more certain, better defined and observable indications that change is or will be taking place. The four categories are:

- (i) signs and portents - the earliest signs of change
- (ii) aggregation of trends - trends becoming acknowledged futures
- (iii) crunch points - trends reaching a significant conclusion or a single significant event causing what is, for now, an irreversible change
- (iv) observable phenomena - clear evidence that things are changing.

Signs and portents

The first category, signs and portents, is aimed at *identifying the earliest signs of change*. These events do not constitute trends or do not yet constitute trends. They are not, what might be called, observable features of the business environment in the way that established trends are. They are not greatly talked or written about.

This is the most difficult type of data to characterise and, for most people, is the type which they most desperately want to get a feel for and to understand. What is coming through here are “faint signals” of future change, the earliest signs of events which will, or could, have a big impact on the way in which business is done. This information will tend to come through either in the form of “new reports”, “first interviews” with experts or “new opinions” and may relate to secondary issues surrounding a major event. These will either be the first reports of a particular change or development, or if there have been previous reports of developments in the area of concern then the tone of these reports will start to change. The words “signs of” could be placed in front of each of the principles in this category. However, the difficulty here is that what one person sees as a sign of future change might be dismissed by another. One of the advantages of using CAFE is that by working with the model in a group setting, it should be possible to explore the meaning of these early signs of change and to evaluate the underlying causes of change.

In the context of signs and portents the principles would be read as *signs of*:

- * societal, industrial or political changes which will lead to change in demand characteristics

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- * a shift in the behaviour of construction related industries
- * a change in international trading conditions
- * the emergence of a new or advanced technology
- * a new way of doing things which may lead to a technological breakthrough

Events which are identified using these principles are likely to be ones which the model builder will want to track.

Aggregation of trends

The second category, aggregation of trends, is aimed at identifying trends which are starting to “solidify”, that is they are showing evidence of becoming a more definite feature of the business environment. The aggregation of a number of reports over a period of time can give an indication of permanent climate change. There will have been commentary on these events or issues in the past and either the model builder will have been tracking them, and will now start to realise that there is something more definite emerging, or reports in published sources will start to draw conclusions about how these trends will play out. There may even be one significant report which pulls the available information together and draws new and different conclusions which point the way to the future. Changes could include things such as a change in banking preferences and investor behaviour, a change in consumer retail preferences or a change in employment trends, all of which could lead to a change in building requirements in different parts of the industry.

Principles falling under this classification could be prefaced by the word “*expectation*”, in that is they are aimed at identifying the expectation of:

- * the resolution or complication of current strategic issues in the industry
- * a change in the volume or structure of a market
- * a shift in competitive positioning between organisations

or the expectations that:

- * previously anticipated events are now not going to happen
- * there will be an intervention as a consequence of a future predicted event

There will have been information about these events in the past, now the climate has changed, possible options for development are starting to emerge and there is a more definite expectation that something will happen.

Crunch points

The third category, crunch points, is aimed at identifying trends or events which have now reached a critical point, where there is no turning back (a “*lock-in*” situation exists) or where something must happen, one way or another (a “*flip-flop*” issue). “Flip-flop” issues have two or more possible outcomes. In such a case it is clear that something will definitely happen, one way or the other, but the particular outcome is uncertain.

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Crunch point events are observable but may require some deductive reasoning to identify the lock-in; it may not be stated explicitly in any one published source. Crunch points which are indicative of a “lock-in” situation represent the “pre-determined elements” in the business environment.

Principles in this classification are characterised by “*definite change*”. They are:

- * a yes/no step function which will have an impact on market size
- * an explanation of previous events which now shows a “lock-in” situation

Observable phenomena

The events identified and classified as observable phenomena are tangible in the sense that there is evidence of them, significant and specific examples of change can be identified which are indicative of future change. This is in contrast to the first category, signs and portents, where the signs of change could be equated to more of a “gut feel”, an inclining that something will happen but with, as yet, no substantive body of evidence to support that view.

Events which fall into the category of observable phenomena are characterised by being tangible, there is “evidence of” them, so the principles are aimed at identifying where there is evidence of:

- * a change in the declared “central strategy” or policy of a major player in the industry
- * a major player is “shaking themselves about”
- * a major player has introduced a “new recipe” or a new way of working
- * an industry body or government planning the introduction of new legislation or a new regulatory system
- * the creation of and action by a powerful lobby group or coalition
- * a previous technology failure comes to light

In moving from the classification of signs and portents to observable phenomena, as well as there being a change from “weak signals” to “definite signs”, there is also a shift from the macro level of the business environment to the micro level, or from the general to the specific. Societal, industrial and political changes are higher level or macro phenomena, compared with the actions of specific, significant players within the industry.

What it is not useful to add to a model

The “usefulness” and impact of an event statement is determined by its content and its phraseology. The phraseology of event statements is dealt with separately, in a later section of this guide (on page 38). Having described the principles which guide data identification it is useful now to summarise the main errors in data extraction.

Model building - data identification

It is very easy when building a model to extract large quantities of data which “might just come in handy”. This is counter productive. It slows down the model building process and simply leaves the model builder with more data to check and can bring a sense of futility to the whole exercise! Data extraction needs to be focused. The three points given below can help to maintain the focus of the model.

*** Whatever the chosen time frame is for a model, stick to it!** It is not useful to include events which are expected to occur beyond the time frame of the model. This may sound simplistic but the model will lose focus and become less credible if the time frames associated with events are not considered to be realistic. Remember to apply a test, by considering the historical rate of change of the phenomenon in question and ask yourself whether or not the event (whatever it may be) is likely to occur during the lifetime of one generation (i.e. approximately 20 years) or in the lifetime of a government (i.e. approximately 4 or 5 years). Remember that the notional time frame attached to occurrence of events is subjective, so when a model is used in a group setting there may be some dispute as to which events will fall inside the chosen time frame and which will not.

*** It is not useful to include generalities, especially those which are unsupported!** For example, event statements which read “experts expect output to grow by 3.3% (1995)”, “Labour plan to achieve economic growth in the UK ” or “commercial construction may increase” are neither very informative, nor hard hitting and attention grabbing.

If the last of these event statements were to read, “increase in commercial construction (1996)” and the event statement is supported by a series of event statements which read, “low grade office space unusable”, “tax incentives of office conversions introduced (1994)”, “alternative use of low grade office space (1996)”, and another series reading, “revised stance of planning authorities” and “restrictions on money supplies to developers”, “extensive revamping of older shopping centres rather than new build”, then the initial event statement becomes more meaningful and is useful because it is explained (supported) by other event statements in the model. The map of these event statements is shown in figure 4, below.

Model building - data identification

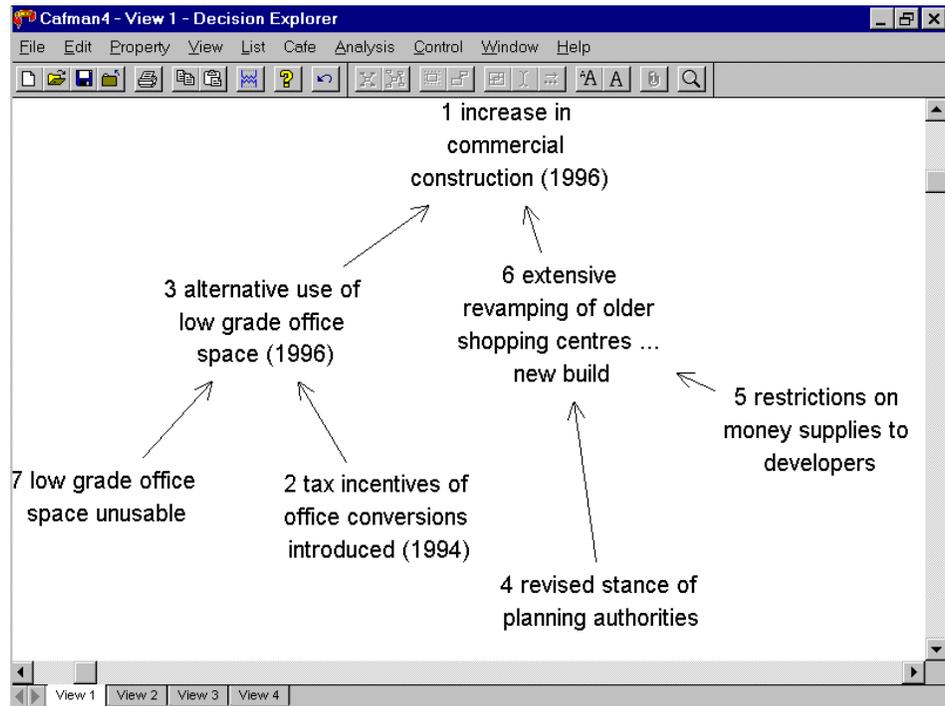


Figure 4

* **It is not useful to add or to leave event statements in a model which remain “orphans”.** An orphan is any event statement which is unsupported and has no consequences; that is, it has no links to any other event statements in the model. All of the event statements in a model should have supporting explanation or consequences, otherwise the model is adding nothing to the understanding of the event.

Commands:

Identifying orphans in a model.

To identify any orphan event statements in a model type the command *orphan*, on the command line, and then press *enter*. If there are orphans in a model they will be listed.

Model building - data structuring

This section details the stages which are involved in the structuring of the CAFE data which has been identified. It discusses the distinction between event statement content and the content of the memo cards, event statement coding, the linking of event statements and the use of sets.

Event statement content and memo content

The source reference

The reference to the event statement source article can appear in either the memo card title or in the body of the memo card.

Note: If all that is being provided as back up to a event statement is the source reference then it should appear in the memo card title.

This means that when the event statement is viewed in either a map or text listing the memo card indicator will show that there is no supporting text, that is the memo card indicator will appear as a paper clip, rather than a paper clip overlaid with a red “T”. This avoids the users opening memo cards with the expectation of finding supporting text and being disappointed when faced with only the source reference.

The advantage of putting the source reference in the memo card title is that the user can see immediately where an event statements has come from, and so can form an opinion immediately about the validity of the data. The disadvantage with this form of presentation is that users may decide that information is “out of date”, without properly evaluating whether or not the data is still valid. Event statements can still be of significance regardless of the fact that the event might have occurred sometime previously.

Memo card content

The supporting text provided in the body of the memo cards should provide more detail about the event statements to which they relate. This text should put the event statements in context (if the context is not clear enough from the links to the surrounding event statements); it should provide quantification, if appropriate, and should explain the importance of the event statements, if their importance is not self-evident.

If a group of event statements have been extracted from a section of text and these event statements, taken as a group simply represent the coding of that text, then it is not helpful to repeat the source text in the memo cards.

Event statements can arise from articles dealing with apparently unrelated subjects (“an insightful throw away line”). In these cases, providing a summary of or extracts from the source article would not be helpful; it is more important and helpful to provide some sort of reasoning for the inclusion of the data and to explain briefly about the context in which the comments were made. An example of this might be an article which deals

Model building - data structuring

primarily with political influence on the behaviour of the UK equity and gilts markets, but which contains a single line of information about the possible impact of the implementation of a minimum wage. The information about a minimum wage is important but the rest of the article is too general.

Commands:

Creating memo cards.

There are two ways to create a new memo card. Select the event statement to which the memo card is to be attached by moving the mouse pointer onto the area of the event statement text and clicking once with the left mouse button. The select box will appear around the event statement. Then either move to the *property* menu and select the *view memo card* item or, with the concept selected and the mouse pointer still over the event statement text, click on the right mouse button and select *view memo card* from the pop-up menu which will appear. If a memo card is not already attached to the chosen event statement then a new memo card will be created.

Viewing memo cards.

Existing memo cards can be viewed using either of the two *view memo card* options which are also used to create memo cards

Entering memo card text and editing memo cards.

When a memo card is first created it opens automatically in edit mode. In edit mode the mouse pointer appears as an “I-beam”. On entry to edit mode the memo card title is highlighted and can be edited. To switch between editing the memo card title and entering or editing text in the body of the memo card use either the *TAB* key or click the mouse pointer on the body of the memo card.

To edit an already existing memo card open the memo card by using one of the two view memo card options and then double click with the left mouse button on the area of the memo card. The mouse pointer will change from an arrow to an “I-beam”. A pop-up menu with the edit options for the memo cards can be accessed by clicking on the right mouse button when the memo card is open and is being viewed in edit mode.

Event statement coding

Phraseology

The phraseology of the event statements has a big effect on how the model reads. The best way to illustrate this is to use an example and consider a section from an article and show how it would be coded, comparing what was said in the article with what would be put into the model. The passages which have been highlighted, in bold, italic type, are those which can be attributed to one or more of the principles guiding data identifications and from which the event statements are drawn. We will consider each passage in turn, discuss the event statements which are drawn from them and then look at maps of the resulting event statements.

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There are several “correct” ways in which these event statements could be coded since the use of language will vary from model builder to model builder. However, there are some important general points which should be noted, namely the expression of data as “actual” events, avoiding the use of certain words which diminish the impact of event statements and the use of active, rather than passive phraseology.

“... Tarmac is no longer a microcosm of the industry - it has sold off too many good businesses in the past few years after its huge property and land related write downs to be that. But success for Tarmac will mean there is life in contracting yet. So what does Neville Simms see that others don't?”

He has said it all publicly often enough. In a nutshell Simms thinks that workloads will revive to levels at which a decent margin can be earned. *The UK is at present consistently under-investing in infrastructure and buildings on international comparisons. This is unlikely to continue indefinitely. On this analysis, a sharp rise in construction investment can be expected sometime over the next five years or so.*

Simms may well be right but even if he is, critics still see *no future for UK contractors which fail to adapt in line with the fundamental change which clients want*. The days of strong cash generation are over. There will be no more front end loading and subbie bashing to boost the coffers. The cash flow profile of the industry is changing and contracts will be end loaded in future. Contractors themselves have undermined the old system by being too competitive in the recession. *Clients have seen what contractors can do when they have to bend over backwards*. There will be no return to the old ways.

Howard Seymour of stockbroker BZW is among those who see a **two tier contracting sector developing in which those with strong balance sheets and specialist skills will take the leading roles**. They will earn as much from dividend streams from investments in projects ... as from “interest received”. They will **win work through innovative financing and partnering agreements**. Failure to grow these capabilities **will leave room for overseas contractors** to move in and snatch the plums.” New Civil Engineer 27.07.96

Why was the passage which reads “workloads will revive to levels at which a decent margin can be earned” not chosen? This is a general statement which is not useful unless it is supported by the detail which explains how this situation might come about. Interest should centre on information which implies “actions” by organisations. The general statements, which might be the outcomes of these actions can be added later.

(i) “... The UK is at present consistently under-investing in infrastructure and buildings on international comparisons. This is unlikely to continue indefinitely. On this analysis, a sharp rise in construction investment can be expected sometime over the next five years or so ...”

The event statements resulting directly from this text would read:

“under investment in infrastructure”, “reversal of under-investment in infrastructure (2005)”

Model building - data structuring

Note: The data in the model should be expressed in terms of events

The data in the model should be expressed in terms of events so the event statement about under-investment reads as if the reversal of the under-investment is a definite happening. This may be supported or contradicted by evidence from other sources.

As explained earlier (page 11) a date is added to certain event statements to help in establishing the chronology of events when they are linked together in the model. The date attributed to the occurrence of an event is a matter of judgement. The date should be realistic and justifiable, based on the data available. The date may be inferred from the text, as in this case, or it may be the result of intelligence from other sources.

Note: Avoid using words such as “likely”, “possibly”, “may be” or “expected” in event statements.

Words such as “likely”, “possibly”, “maybe” or “expected” should not be used in event statements because they significantly reduce the impact of the event statements as part of a possible scenario.

(ii) “... no future for UK contractors which fail to adapt in line with the fundamental change which clients want ...”

The event statement resulting from this text would read, “clients want fundamental change”. In this case the phraseology of the event statement is reversed so that the event statement expresses the clients’ want for change, rather than what the passage actually reports, which is that there will be no future for contractors who fail to change.

Note: Make statements “active” rather than passive e.g. “clients want fundamental change”.

It is the wishes of the clients’ which are paramount, so the clients become the subject of the event statement and their wants are expressed actively and positively.

(iii) “... clients have seen what contractors can do when they have to bend over backwards ...”

The event statement resulting from this text would read, “clients are aware of contractors real capabilities”. Again, the clients are the subject of the event statement and their perceptions are expressed actively and positively.

(iv) “... a two tier contracting sector developing in which those with strong balance sheets and specialist skills will take the leading roles.”

Two event statements can be drawn from this text. The first directly, “a two tier contracting sectors develops (1998)”, and the second, “survival through redefinition of service rather than business as usual” by making a positive action out of what is need to take a leading role (“... specialist skills”), which may have to be acquired, developed or maintained.

The timing of the development and subsequent definition of the two tier contracting sector may be open to debate but from the tone of the article and opinion from other sources a judgement may be made that this is an event which is likely to occur sooner rather than later. The change in market structure is expressed as a definite event which is

Model building - data structuring

going to happen and a strategic option which is available to companies, when this event occurs, is “survival through redefinition of service rather than business as usual”.

(v) “... win work through innovative financing and partnering agreements.”

This text produces another event statement which provides an option for the future development of a company. The event statement can be taken directly from the text, as it stands.

(vi) “... will leave room for overseas contractors ...”

The implication of this is that overseas companies will start to play a more dominant role in the UK construction market and “cream off” the most lucrative pieces of work (“... move in and snatch the plums”). The event statement which results from this report would read “overseas companies dominate UK market (2000)”

Figures 5 and 6 illustrate the event statements which have been derived above. They are shown in the context of a larger model. The negative link between event statements number 32 and 36, in figure 6, indicates the contradictory nature of these two pieces of information.

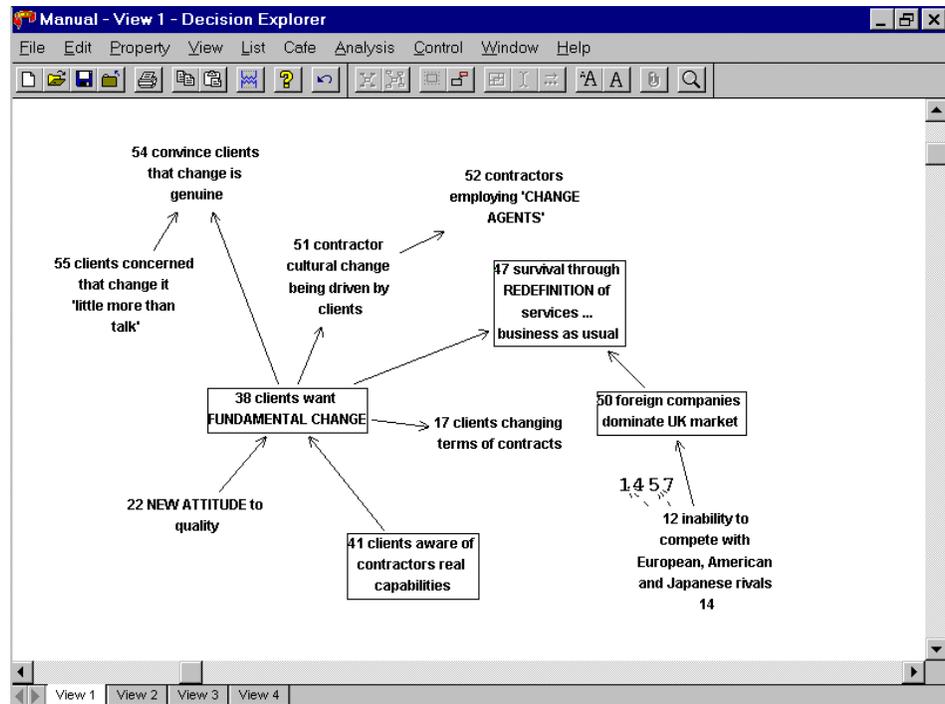


Figure 5

Model building - data structuring

It is not necessary to capitalise key words in all event statements. However, it is desirable to capitalise key words in event statements which are “step” events as described on page 55. Step events are events which are representative of significant step changes in the business environment. Step events are likely to have a big impact on the way in which business is carried out. They are “high utility” events, in that they are difficult to predict but their outcome is likely to significantly affect the organisations’ way of working.

Figures 7 and 8 below illustrate the impact of the capitalisation of key words in event statements.

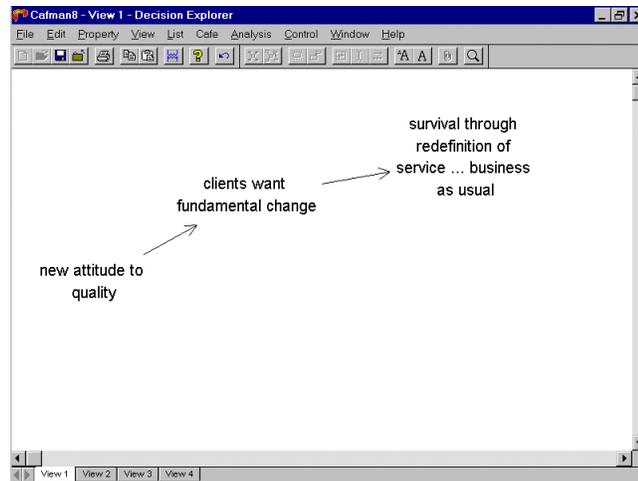


Figure 7

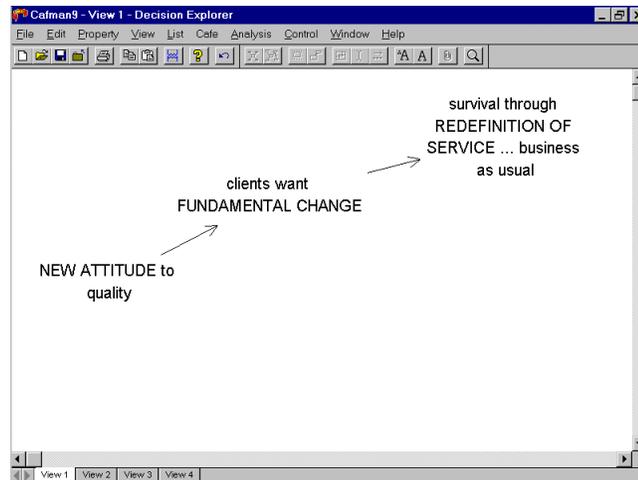


Figure 8

Model building - data structuring

Presentation styles

Five styles (variations of colour and font) are used for the presentation and classification of the data. They are “past_event”, “commentary”, “activity”, “capability” and “so_what”. The models are structured as shown in figure 9.

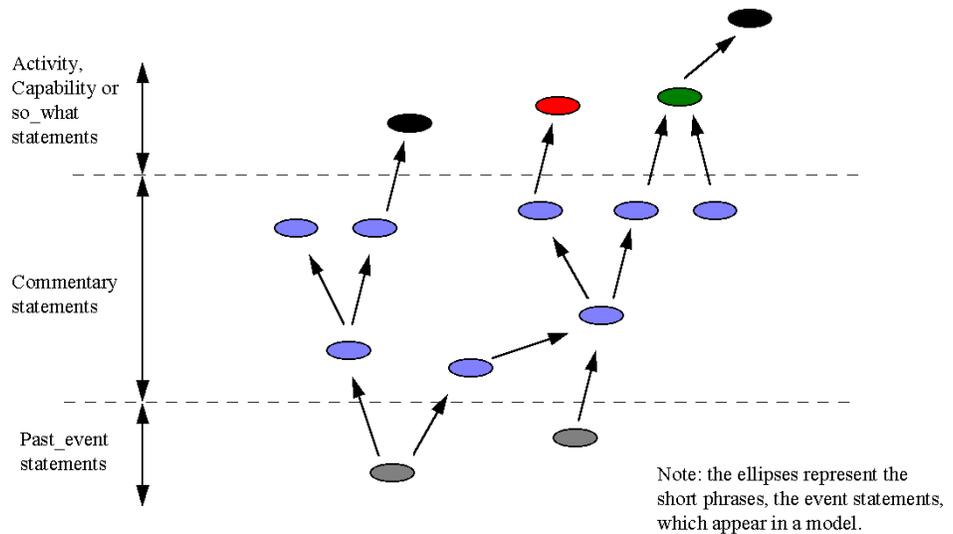


Figure 9

Past_event statements sit at the “bottom” of the model. They occur at the start of a chain of events and are “triggering” events. They may, in fact, represent current happenings but since the model is built with the intention of looking at the future, these current events can represent “history” in the context of the model.

Commentary event statements make up the main body of the model. They provide the linking events between now (“current” and recent historical events) and the future (the outcomes at the “top” ends of the chains of events).

Activity, capability and so_what event statements make up the “top” of the model, the outcomes of chains of events.

In some instances it is a matter of judgement whether or not a statement should be styled as an activity or capability event statement. This is because the volumes and areas of activity in a market have implications for the acquisition, development or maintenance of organisational capabilities. How these statements are coded will depend on the users’ standpoint. For example, if a model suggests that in the future facilities management will be an expanding business area, then users whose organisations already possess the skills required will be more likely to code event statements relating to facilities management as activity statements. For those whose organisations do not already possess facilities management skill, then developing them or acquiring them becomes important, and the associated event statements would be more likely to be coded as capability statements.

Model building - data structuring

The distinction between these two event statement styles has been kept because during the development of CAFE managers said that they found this distinction to be useful.

A similar difficulty can arise in the coding of some commentary event statements. Some commentary event statements could be coded as activity statements, in that although they may not be directly linked to areas or levels of activity, ultimately they do have some influence on them. Since the focus of attention should be towards the end of the chains of events if this coding dilemma arises and the event statement in question is not near to the end of a chain of events then it is better to code it as a commentary event, in order not to shift the focus of the model to the “bottom” of the model.

So_what statements are added to provide logical progressions within the model or to provide a logical conclusion to a chain of events where no conclusion is explicitly given in a source reference. These statements are generated by the model builder and /or the model users. They do not have memo cards associated with them.

All of the data which is drawn from the source references should be coded with the style of either a past_event, commentary, activity or capability statement. Only model builder/user generated information should be coded with the “so_what” style.

Using a white background for the model display and when viewing the model on a monitor the follow style attributes are recommended:

Past_event:

Event statements in this category are displayed using the colour grey, Arial, 12 point text. The use of TrueType fonts is recommended because they are scaleable.

Grey is used to diminish the visual impact of these event statements because, although these are the triggers for a chain of events, they are historical events and not the focus of the models. In terms of future strategy it is the event statements at the “top” of the model which are of the greatest importance. Past_event statements may be the starting point for a model focus area, if they are “step” events with multiple consequences.

Commentary:

Event statements in this category are displayed using the colour blue, Arial, 12 point text.

Blue is used because it is a fairly neutral colour, and although these event statements are of interest and form the body of the model, they are not as important as those event statements at the “top” of the model which have implications for the future operation of the organisation.

Activity:

Event statements in this category are displayed using the colour green, Arial, bold, 14 point text.

Model building - data structuring

Capability:

Event statements in this category are displayed using the colour fuchsia, Arial, bold, 14 point text.

So_what:

Event statements in this category are displayed using the colour black, Arial, bold, 14 point text.

These three categories (activity, capability and so_what) are those which are expected to be of most interest to managers or strategists. They are the outcomes of future events which will either affect activity levels in construction markets (activity statements), have implications for gaining or maintaining particular capabilities (capability statements) or, as in the case of “so_what” event statements, may prompt further research to discover the impact of the events.

Commands:

Creating display styles.

To create the display styles which are used in CAFE select the *property* menu, *concept style properties* item. The *concept style properties* dialog will open. Choose the *new style* item, a name dialog will open. Enter the required style name and then click *OK*. Enter the colour and font properties by choosing the *font*, choosing the desired attributes and the clicking *OK*.

Attributing event statements to styles

Open the concept style selector by either selecting the *property* menu, *show style selector* item or use press the *ALT* key and the “*Y*” key simultaneously. With the style selector open and displayed on the screen, *select* the event statement whose style is to be changed (place the mouse pointer over the text area and click with the left mouse button. The select box will appear around the selected text) and then move the mouse pointer to the style selector box and click on the appropriate style.

Checking the model structure

It is possible to carry out a few “quick” checks on the model structure.

Listing the tails (the starting points of the chains of events) in the model.

It would be expected that the majority of the tails in a model would be past_event statements, with a few commentary and so_what statements appearing. So_what statements only appear as tails if a “well known” triggering event is added to a model and is not sourced. It is unlikely that activity or capability statements will ever be tails.

When presented with the listing of tails ask yourself if these really could or should be past_events? If statements have been attributed to another style, consider how the map would read when you change the style to past_event. Does it make sense for these event statements to start a chain of events? Is something missing “beneath” them?

Listing the head in the model.

The majority of the heads in a model are likely to be activity, capability and so_what statements. Past_event statements should not be heads.

Orphans

Orphans are event statements which are not linked to any other event statements in the model. Orphans can represent important events. To be useful in a CAFE model any event must be linked in to others. Orphans can be collected in a separate model for use at a later date: they may be representative of issues whose development should be tracked.

Clusters

The cluster command is used to identify groups (clusters) of closely linked data. Identifying and mapping the clusters in a model is a good way of checking that related data is linked. Run the cluster analysis and then map or list each of the clusters to check their contents

Commands:

To list the tails in a model.

Type *LT* and then press *enter*. A list of all of the tails in the model will be displayed.

To list the heads in a model.

Type *LH* and then press *enter*. A list of all of the heads in the model will be displayed.

The orphan command (see page 36, Identifying orphans in a model.)

Editing data.

To edit an event statement when it is shown in a test display listing, double click with the left mouse button on the text to be edited. The mouse pointer will change to an I-beam. Press enter when editing is finished.

Cluster analysis.

To carry out a cluster analysis on a model either select the *analysis* menu, *cluster* item or type the command *cluster* and then press *enter*. The results of the analysis are placed in the sets cluster1, cluster2 etc.

Linking event statements

There are four main aspects to the linking of event statements in a CAFE model:

- i) the use of causal links
- ii) the use of taxonomic links
- iii) linking data based on the information provided in the original data source text
- iv) user or model builder provided links (subjective linking).

Causal and taxonomic linking

There are two types of link in a CAFE model, *causal links*, which are denoted by a single headed arrow, and *taxonomic links*, which are denoted by a two headed (or two way) arrow. Causal links are read as “leads to”, “causes”, “contributes to”. Causal links can be positive or negative.

The reason for the use of these two types of link is to overcome a specific problem which revolves around the use of “catch-all” event statements, which form “sumps” in the models, and the question whether the arrow points from the specific to the general or the other way around. It was found during testing that to have the arrows pointing from specific event statements to a general event statement was counter-intuitive to the user’s natural way of thinking about things. Users expected to consider the general event statement first and then to explore downwards, from the general towards specific sub-groups. The specific event statements contribute to the general event statement and the general event statement, which it is the result of the sum of the specific event statements, has meaning in its own right as the starting point for exploration of the supporting event statements. Taxonomic links indicate how detailed constructs are included in more general constructs e.g. the public sector activity is linked to (includes) building infrastructure, which links to (includes) road construction. This is a typical taxonomic hierarchical structure, and both directions in each link have meaning. From the detailed to the more general can be interpreted as causal, as road building contributes to (is part-cause of) infrastructure building, which in turn contributes to (is part-cause of) public sector activity. The arrows in the other direction indicate meaning, e.g. public sector activity means (for example) infrastructure building, which in turn means (for example) road construction. Causal connections can have meaning in only one direction. A larger (public sector) road budget causes more road construction, but more road construction does not cause a larger (public sector) budget; it could be due to private financing.

Commands:

Linking event statements.

One way (causal) links.

Place the mouse pointer over the text of the first event statement to be linked and *select* it by clicking once with the *left mouse button*. While keeping the left mouse button *depressed* drag the mouse pointer to the target (second) event statement, which is to be linked to the first. When the mouse pointer is over the second event statement a *dotted select box* will appear round the text and the *link property editor* dialog will open. If the link has been made correctly, click *OK* in the dialog box and the new link will be drawn on the map.

If a negative link is needed check the *negative* box in the *link property editor* dialog.

Two way (taxonomic) links

There is no single symbol for a double headed arrow in CAFE. So, to create a two way link, enter a one way link, as described above, in each direction between the two event statements which have a taxonomic relationship.

Deleting links.

Select the link to be deleted by moving the mouse pointer onto the link and clicking with the left mouse button. With the mouse pointer still over the link being edited click the right mouse button. Select the *delete* item from the pop-up menu.

Links provided by the data sources

A proportion of the linking in a CAFE model will be derived directly from coding of the information in the source references. The passage and the map, given in figure 10, illustrates this.

“Bank lending to property companies peaked in May 1991 at £41 billion. The reasons for this debt explosion are complex. The reluctance of pension funds and insurance companies to invest in property meant that equity funding was scarce. In the late 1980s development boom the industry’s thirst for finance was great. Encouraged by the high margins which could be made on property lending, the banks were only too willing to fill the funding gap”. Financial Times 16.09.94 p13

Model building - data structuring

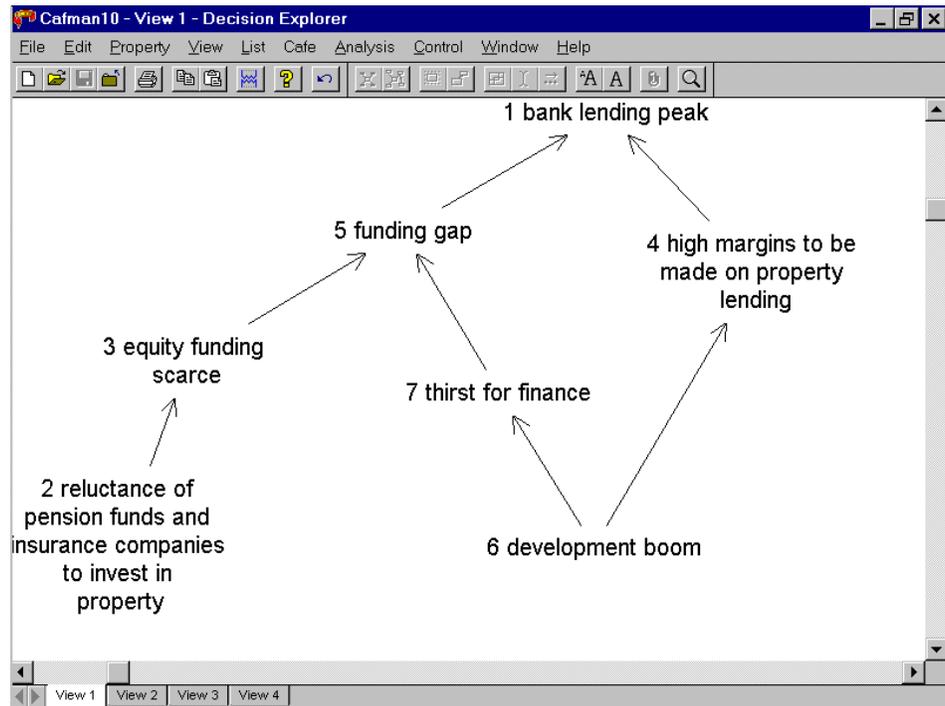


Figure 10

In CAFE models there should be a balance between the number of links derived from directly coding the text and the number of subjective links. We are not suggesting that the model builder diligently count the number of links of each type, more that the model builder has a feel for the balance of the origin of the links. The reason for this is that, while an alternative presentation of a text can alter or add to its impact, if the model is going to add significantly to understanding of the future and to support strategic thinking, then it is the links between events which have been drawn from different data sources, rather than the information from single sources, which are likely to be of most significance.

A way of assessing the balance of the number of text coded links and subjective links in a model is to use a customised (user defined) link type during model building and then change the customised link back to a plain link when model building is complete. User defined links are created by using the link style properties editor, which can be accessed either from the properties menu or by right clicking on a link, selecting “properties” from the pop-up menu and then editing. If this approach is to be used the customised link type should be set up at the start of the model building process, and used whenever links are coded directly from a reference text. If a letter, or short word, is added to the customised link as an identifier, then when model building is complete (and the model builder is satisfied with the balance of links in a model) the customised links can be changed to plain links with one simple edit, removing the identifying letter or text.

Subjective linking

The links expressed between data from different sources are a matter of subjective judgement. The only rule or test which should be applied when generating these links is the question of causality, does event X lead to or contribute to the occurrence of event Y? When the model builder is not the end user of a particular model, then he/ she can and should expect questioning about the model linking, both source generated (text coded links) and subjective links.

The use of sets

The attribution of event statements to uniquely named sets is used to help with data manipulation. A set is a group of event statements which share some sort of common characteristic. For example, in CAFE the model builder might want to create sets for event statements relating to Government activities, environmental issues and new legislation. Or a set for “misfits” may be useful, where there is no relationship between event statements but they share the characteristic of being “misfits”; that is, there is little or no supporting or related data associated with these event statements. This can be useful during model building and for model checking, to ensure that any orphans (unlinked) event statements and very small groups (groups of 2 or 3) event statements in the model are properly dealt with.

Sets must be given unique names, which can be up to 19 characters in length. The set names may be either proper words or alphanumeric. Spaces cannot be used in set names. Underscore is the only approved additional character, for example `key_events`. Other characters may work but may cease to work in future versions of Decision Explorer[®]. Some characters have special meaning in certain places, such as hash (#) and ampersand (&) which are used when building up sets on the command line. It is easiest to stick to proper words, alphanumeric names and, for word spacing, underscore (for example, `key_events`). There is also the facility to add a set description, a few words which describe the contents of the set. The set description is purely for information purposes, it is not a requirement of set definition.

Set names cannot be the same as any style names, so in CAFE the set names “activity”, “capability”, “so_what”, “commentary” and “past-event” cannot be used as set names. The set names `hieset`, `potent` and `cluster` are also not allowed in Decision Explorer[®] because they are automatically generated and used during analysis processes. Decision Explorer[®] has the facility to create an unlimited number of sets.

Model building - data structuring

Commands:

Creating sets.

Sets can be created by using either the *control* menu, *set management* item, *new set* option or, using the command line, by using the command *ns* followed by the set name. For example *ns futstep* would create a set called “futstep”.

Adding event statements to sets.

To add event statements to sets, type the command *<set_name> + L <event statement number>*. For example, *misfits + L 39*, would attribute event statement 39 to the set *misfits*.

Deleting event statements from sets.

To delete event statements from sets, type the command *<set_name> - L <event statement number>*. For example, *misfits - l 39*. (The spaces are important!) This would remove event statement 39 from the set *misfits*.

Listing the contents of sets.

Type the command *l <set_name>*, and press *enter*.

Sets for the model builder's use

When building a model it is likely that sets, which are additional to those used for model exploration and analysis, will be used. The use of sets makes it easy to map groups of related event statements and to check that related data is linked. For the use of CAFE we have not tried to define the sets which the model builder should use to aid model building because the appropriate sets will be determined by the purpose and content of the model. As an example, the sets used for one of the prototype CAFE models were BUS_DEV, GOVERN, ENVIRON, TRACK, COMPET, INFL and INDY. The set BUS_DEV (business development) was a set containing event statements representing possible development opportunities for organisations. The set GOVERN (government) contained event statements relating to government and legislative activity. The set ENVIRON (environmental) contained event statements relating to environmental activities, research and initiatives. The set TRACK contained event statements which should be tracked; that is, the events which these event statements represent should be checked from one model building exercise to the next. The set COMPET (competition) contained event statements with details of what competitors are doing. The set INFL (influence) contained event statements relating to lobbying issues which were dependent on politicking activities. And finally, the set INDY (industry) contained event statements relating to the changing nature of the industry.

Sets for model exploration and analysis

Any number of user defined sets can be used during model building. However, for model exploration and analysis sets called FUTACTIVITY, FUTCOT, FUTCOTHIE, FUTRELEVANT, FUTSCENARIO and FUTSCEN~ are used, in addition to the FUTSTEP set (see page 55). In contrast to the FUTSTEP set, where events are attributed to it by the model builder or the model user, for the “FUT~” sets, which are generated automatically by the CAFE software during the analysis, the model builder is not required to attribute event statements to these sets. The results of mapping the event statements in the FUTSCEN set should be displayed in the individual focus area (or scenario views). These form the basis for model exploration.

If, after exploring the scenario views, the user wants to “cherry pick” to explore the model, that is to use listings of event statements, identify those which are of interest and explore them, then listings of the event statements in the three style categories “activity”, “capability” and “so_what” can provide a useful starting point. However, a listing of no more than about 25 statements should be used. If listings are too long then the users can lose interest.

As an alternative to starting model exploration with maps of the model focus areas (from the FUTSCEN~ sets) a listing, related to the activity statements in the model focus areas, and contained in the FUTACTIVITY set, can be used. The disadvantage with this, as with using any listing, is that events are not seen in context. Minor events with important consequences may be overlooked.

Model analysis

For analysis purposes event statements which have what are referred to as “step characteristics” must be identified and attributed to the FUTSTEP set. This section explains what is meant by “step” events, their significance and how to identify them.

Analysing a CAFE model

The FUTSTEP set

Having entered all of the data into a model, "step" events must be identified. With practice step events can be identified during model building, as they are entered into the model, and can be attributed directly to the FUTSTEP set. However, in the first instance it is easier to work with a listing of all of the data in a model and go through it systematically identifying step events, attributing them to the FUTSTEP set and capitalising the key features of these events.

Commands:

The FUTSTEP set can be created by using either the *control* menu, *set management* item, *new set* option or, using the command line, by using the type the command *ns futstep*.

To add event statements to the FUTSTEP set, type the command *futstep + L <event statement number>*.

The significance of the FUTSTEP set

The FUTSTEP set is used during the analysis of the structure of CAFE models. The significance of the FUTSTEP set is that step events, with multiple consequences, form the focal point for model exploration and scenario development.

Definition of a “step” event

Step events are events which are representative of significant step changes in the business environment. Step events are likely to have a big impact on the way in which business is carried out. They are “high utility” events, in that they are difficult to predict but their outcome is likely to significantly affect the organisation’s way of working.

Model analysis

The way in which to decide whether an event is representative of a step event is to ask the following questions:

(i) Is the statement representative of a "distinct" event or it is representative of an existing trend?

The presentation of the model requires that event statements are phrased in terms of events. However, in assessing whether or not an event statement should be attributed to the FUTSTEP set the model builder must decide whether or not the statement has been drawn from an occurrence which is a "distinct event" or whether it is the result of an existing trend.

What is meant by a "distinct event" is a happening which stands out as being unusual or significant in some way, for example, an uncharacteristic or unexpected change in policy or the introduction of a piece of legislation which will "change everything". One way in which to test for this is to try putting the word "trend" in front of the description of the event. Trends are not step events. However, a trend which has reached a significant outcome can be a step event because it provides "a turning point" (a critical level signalling a change in direction).

Examples: *a) step event statements which show "distinct" events (a sudden switch from one state to another):*

"ABRUPT END to period of moderate pay settlements"

"NEW NEWS: pay-when-paid clauses banned by law"

b) step event statements which demonstrate trends reaching a significant outcome:

"CHANGE in direction of trend: new data on economy shows SLOW DOWN rather than continued growth"

"CHANGE in direction of trend: low point of inflationary cycle is behind us"

(ii) Is the statement representative of something which is sudden, unexpected or new?

Another test which assists in identifying step events is to try adding the words "change in" together with words such as "sudden", "unexpected", "new", "permanent", "end of", "abrupt", "fundamental", "reversal" at the start of the statement. This encourages the model builder to make a decision about whether what is being modelled is really a change which is new, dramatic and different.

Examples: *step event statements which demonstrate change:*

"REVERSAL IN POLICY: large equity investors returning to property"

"PERMANENT CHANGE in character of market: sustained split in office market"

"SUDDEN BOOST to entertainment sub-sector (1996-1997)"

(iii) Does the event statement have an opposite pole?

Opposite poles are quite likely to appear in step event statements because there is a “yes/no” or “stop/start” characteristic to step events. These events, and their opposite poles, should not be viewed in terms of favourable and unfavourable outcomes. The model builder should not try to infer an opposite pole simply because it implies a better or worse future. The opposite pole should be a realistic alternative. Opposite poles represent alternative outcomes, for examples the statement may read "split market structure rather than business as usual" or "down turn in economic growth rather than continued growth", so the opposite poles are not opposites in the sense of "black and white", they are alternatives. The alternatives, for example in association with an event which will have an impact on market character, may be that the available market size will get much larger, it may shrink, remain unchanged, disappear or be redefined.

Examples: *step event statements with opposite poles:*

"pause for breath ... START OF ANOTHER RECESSION"

"period of INDUSTRIAL UNREST ... reasonable stability"

So, in summary, the characteristics of a step event are that it is a distinct event, whose occurrence is sudden, new or unexpected; there is a change or a trend has reached a significant outcome and there is likely to be an opposite pole. These characteristics are necessary for an event to be a step event, otherwise the statement is just an event. An event can be unexpected, new news, surprising, the result of new analysis but it is not a step event unless it causes some form of change.

The analysis process

The model analysis sequence for CAFE sits behind the *scenario* item in the CAFE menu. The analysis identifies the lowest event statements in the model which are both cotails (events with multiple consequences) and step events (members of the FUTSTEP set). These event statements are an important starting point because, in scenario terms, it is events with multiple consequences which are of interest. The analysis then identifies the events which support or are triggers for the step/cotail events.

Presenting the analysis results

The results of the model analysis should be presented in a series of separate views. This is easily done by mapping each of the FUTSCEN sets in a separate view, and giving an appropriate title to each view. These views should not contain more than about 15 to 20 event statements, so that they are easily legible and their content can be assimilated quickly. If a FUTSCEN set is too large to be mapped in a single view (which can occur with highly linked models), then the set should be split and its contents mapped on two separate views. These views provide a starting point from which model exploration “fans out”.

Model analysis

Commands:

To map the contents of a set.

Choose the view on which you wish to display the map and type *map futscen*<~>, and press *enter*. The FUTSCEN sets are numbered from 1, upwards. The appropriate set number should be substituted for <~> in the command.

When the data is mapped it may require some rearrangement on the screen so that it is legible.

The *view* menu, *display scale* item can be used so that the data can be more easily viewed.

Creating new view and naming views.

A series of view buttons are shown at the bottom of the screen display. To create new views click on any of these view buttons with the right mouse button. A pop-up menu will appear. Select the *insert* item. A naming dialog will appear. Enter the desired name for the newly created view.

Using CAFE

The exploration sequence

The purpose of CAFE is to act as a strategic "thinking tool". It is intended to stimulate thinking about multiple possible futures. This is achieved by the model user "walking through" the model, seeing the interconnections between events and considering the consequences of events. Events are seen in context rather than in isolation. The user should consider the question "what will we do if these events happen?" By creating "new views of the future" CAFE should trigger or support the user's thinking, helping to develop further thinking about options for organisational development.

Having constructed a model or when presented with a completed model, what should you do next? A suggested sequence of model exploration is given below. It is important that each of the model focus areas is considered BEFORE starting to customise the model. The reason for this is that if the model user starts to customise the model as soon as model exploration begins, parts of the model, which may well contain useful information, are likely to be overlooked. The model user can become very absorbed with just a small corner of the model.

In order to develop thinking, facts should be taken at face value and should NOT be interpreted at this stage. Whether or not they fit into the final scenarios will be determined later.

The model exploration sequence has the following steps:

- Review of the model focus areas
- Exploring the model
- Customising the model
- Re-analysing the model

Review the model focus areas

A summary of what is contained in the model should be provided in the *model overview* window. This is accessed via the *help* menu, *model overview* item. This window can be displayed in either read only or editable form.

The model overview should provide information such as the type of model (e.g. a general model covering a range of industry topics, or a sector specific model), the level at which the model has been built (e.g. covering broad national issues or more detailed, local issues) and an outline of each of the model focus areas.

Using CAFE

The outline of the model focus areas need provide only a brief description of the focus areas and the title of the focus areas, for example:

View 1 (The economy) - this focus area starts from the proposition that there is a slow down in the rate of growth of the UK economy, rather than continued growth. This ties in with issues relating to inflation and difficulty in achieving stable economical growth.

Exploring the model

As they stand the model focus areas do not represent complete scenarios. They are a starting point for model exploration and subsequent scenario development. Some of the model focus areas will be of more interest than others. Those which are of most interest should be explored in detail. The focus areas may show only a few events statements, so in those areas which are of most interest the chains of events should be traced to their conclusion. The map display shows, though the use of short dotted arrows, where further information exists which is not currently shown on the screen display. To bring the hidden data onto the screen display simply select (with a single click of the left mouse button over the statements text) the statement to which the hidden links are attached and then by clicking the right mouse button, display the pop-up menu and select "**bring unseen**". By doing this it is possible to trace up chains of events and to explore the model. To hide data which are not of interest select the statement to be hidden and using the pop-up menu, from the right mouse button, choose "hide concept". It is always possible, during this exploration process, to switch back to the model overview to remind yourself of the contents of each of the focus areas.

If, having examined the focus areas, the user feels that there is little of interest in the model, then it is possible to switch to working from listing of data or to use the find facility to search the model using key words, and in this way, to "cherry pick" individual pieces or groups of data from the model. The reason for encouraging the user to work with maps initially, rather than using listings or the find facility, is that relevant information may be dismissed if it is not seen in context.

Customising the model

From an exploration of the model focus areas you should have identified the parts of the model that are of interest to you. Now you should add your own information to the model, questioning the link logic, adding additional event statements where necessary. Since a proportion of the links in a model are subjective, different model users may put different interpretations in various sequences of events. In a group context, questioning about the links between events and the content of the models themselves can be used to explore managers' perceptions about the future, and to reach a consensus about the key issues to be faced in the future. The content of event statements can be edited, statements can be added, deleted or merged, links can be added or deleted or new link types can be added to the model.

If model customisation has been carried out as a group exercise then during this process some sort of consensus will have been reached about which events are "predetermined" and which are "uncertain". Predetermined events are ones where it is certain that a particular outcome must happen but we don't know exactly when. Predetermined events need to appear in all of the scenarios, while uncertain events will appear in only one scenario.

Re-analysing the model

If (or when) the model has been customised, then any effects which this customising might have had will have to be evaluated. Any new event statement which are step events will have to be added to the FUTSTEP set and the scenario analysis performed again. This may cause the focus areas to change. If it does, then these changes should be explored, prior to moving on to the final part of the process, which is the scenario building.

The scenario assembly guide

The method used in CAFE embodies some of the principles of an intuitive logics approach to scenario planning. This means that the scenarios are built on the basis of common sense and logic, rather than using some form of mathematical modelling or attaching probabilities to events in order to build scenarios. The main body of data in the CAFE models is extracted from published and publicly available sources, which are considered to be "reliable sources", by the model builder and model users. This model data is representative of events occurring in the organisation's business environment. The connections and causal relationships between events are made on the basis of logic, using both the model builders'/users' interpretation of events and the data providers' interpretation. Through linking events "stories of causality" are constructed and the knock on effects of significant events can be traced though to their conclusion. Ultimately the user is faced with a number of distinct scenarios or alternative futures, which can be further researched and explored. Exploring the scenario events should help to answer the questions: "what should I look out for in the business environment? What are the signs of change?"

In CAFE, scenarios are presented in a map format rather than as narratives. The use of the system could be extended so that a print out of the contents of certain memo cards presents a scenario narrative, but this has not been pursued at this stage in the development of CAFE.

Having explored the model the next part of the process is to identify the "scenario snippets". These are groups of event statements which will form the building blocks of the scenarios. In order to identify these scenario snippets, what are the questions which you should be asking yourself, what should you be looking for in these models?

General rules for scenario building

1. At least two scenarios are needed to reflect uncertainty

If there is an event of relevance to the company, which is considered to be important and unpredictable, then at least two scenarios are needed in order to explore the outcomes of this event.

2. Do not build more than four scenarios around a particular issue

It is not useful to build more than four scenarios. It is not the case that the more scenarios you build the clearer your understanding of the situation becomes. More is not better. Creating large numbers of scenarios just leads to confusion and does not focus attention on "what really matters" to the organisation. Limiting the number of scenarios forces users to identify the really important issues.

3. Scenarios must be internally consistent

This means that there should be a clear sequence of events, linked on a cause and effect basis, leading from now, the current situation, to the future. Scenarios should be consistent and plausible.

4. There should be an element of newness or novelty in the scenarios

By going through a scenario development process managers should come to see new and different occurrences as being realistic possibilities. Their horizons should be broadened when new information is introduced and integrated into their view of possible futures.

5. Avoid the "good future/bad future" mentality

Avoid building a picture of a desired future. It is easy to fall in to the trap of building a picture of a "good" future, a future which you would like to emerge, rather than building a valid picture of how the future might unfold. Do not think of events in terms of being good or bad, think of them purely in terms of what might or might not happen.

6. Identifying the scenario snippets

A model may contain hundreds of pieces of data, so how do you identify those which should be used for scenario construction? The act of building the model should bring to light the driving forces in the business environment, that is the model should present a picture of the underlying causes of change. The model building should have addressed the questions; what are the different possible interpretations of the causality of events? How might these events play out? What will cause them to play out in one way and not in another?

To identify the scenario snippets identify those groups of events which are really important to your business. You are looking for events which will have a big effect on your business, if they come to pass. There may be just a very small number of high impact event statements in the model.

Creating and presenting the scenario narratives

Having identified the scenario snippets which will be used to create the scenarios the first decision which has to be made is how to create the necessary structures round the data which has been collected.

1. Decide how many stories there are going to be and what will be the organising principle of each story

This will determine which data will be put in which story and how these data will be connected up.

2. Open a new view for each scenario

Another decision which has to be made is whether to present all of the scenarios in a single map view or to break down the event statements, where they present alternatives, and build the scenarios in separate views. Although presenting different scenario in separate views requires the disaggregation of some event statements, certainly to begin with, for ease of interpretation, this is the best and easiest way to present the different scenarios.

To create new views right click on the button for an existing view and select INSERT from the pop-up menu which you will have just opened. A new view will be created. You can rename it and move it to any position in the sequence of views by opening the pop-up menu again.

Event statements can be mapped on one or more views by selecting them from an existing view, switching to the destination view and typing the command map sc. (This means map selected event statements).

3. Look for links between the scenario snippets

When the snippets have been identified and mapped on the new views, you should look for links between the "islands". To do this new event statements may have to be added to complete the logic of the model. Encouraging the generation of these linking events should lead to some sense of what to look for in the future. These linking events may be signs of change in the emerging world.

The question at the end of this process is how prepared are you for the possible futures which you have just identified?

Scenario example

The map shown in figure 11 is the result of a scenario building exercise. This is not a very complex map and, depending on the resources available, substantially more explanatory detail could be added. It serves to illustrate the outcome of the process embodied in CAFE.

Using CAFE

In this instance the client took the role of a UK contractor operating mainly in the building market and with an interest in commercial office developments. (“Took the role of” because the client as a “scenario builder”, rather than a manager in the construction industry).

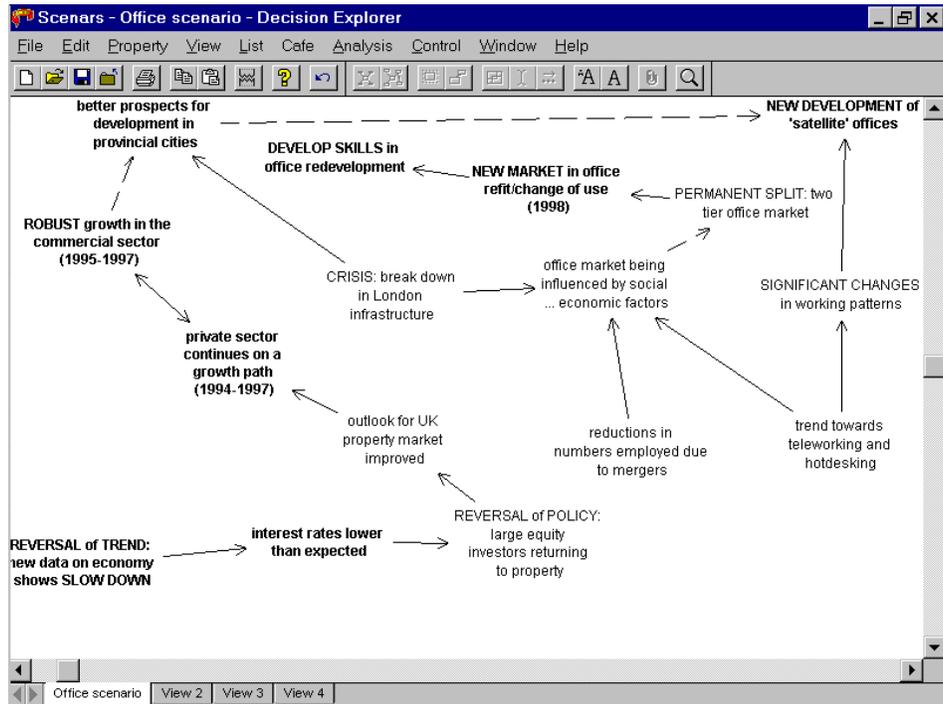


Figure 11

The map format for the presentation is a very concise way of presenting inter-related information. The easiest way to read the scenario maps is to voice the connecting explanation between events. Part of the narrative associated with this map would read something like this:

“...In the future there will be better prospects for office development around provincial cities. This will come about through large organisations choosing to develop smaller satellite offices, in and around provincial cities. There have been a number of contributory factors causing this change in client behaviour. The breakdown of the infrastructure around London acts as a disincentive to organisations choosing London as a location. Improvements in information technology, such as in computer integrated telephone technology, makes the operation of satellite offices for “back room information processing” and sales and inquiry centres an appealing commercial proposition. Organisations have chosen to locate these activities away from their corporate headquarters. So information technology developments, combined with the trend towards teleworking and hot-desking, have become a powerful influence in causing the redundancy of centrally located office space.”

Using CAFE

The narrative would also explain the association between the concepts relating to the state of the economy, interest rates and activity in the private construction sector. A slow down in the economy, rather than continued growth, is of relevance because such a slow down leads to lower interest rates than had previously been expected, which in turn affects the outlook for the property market in general. The economic data suggests that any recovery will be slow and undramatic.

This scenario map was built up using what is called the *inductive method* for scenario construction. That is the method described in this manual, where scenario snippets are generated around events of importance to the organisation. Using this method the scenarios are allowed to emerge as a result of a step-by-step combination of the data. This means that no overall framework is deduced for or imposed on the data, prior to the start of the construction of the scenario narratives.

A footnote

Other possible uses for CAFE

If you do not want to go so far as to build scenarios then managers have suggested other possible uses for CAFE:

1. CAFE can be used to disseminate information within the organisation. It can be used to keep the decision makers up to date on developments in their business environment. If you currently circulate newspaper cuttings and “scanned” information in paper form, why not do it electronically?
2. CAFE can be used as system which is updated and used as an "ongoing decision aid". As a situation develops changes can be mapped and options considered. The same questions about what is really important to the business, what is driving change, what would cause a particular outcome, can still be applied.

General principles guiding data identification

PRINCIPLE 1. Events (or suggested events) which will have repercussions over a number of years

PRINCIPLE 2. A puzzle for the industry

Summary of the six “leading” principles and their subordinates

PRINCIPLE 3. Political, economic and societal change which will lead to a change in demand characteristics.

- * a shift in client and/or user attitudes
 - * an industry body or government planning the introduction of new legislation or a new regulatory system
 - * the creation of and action by a powerful lobby group or coalition

PRINCIPLE 4. Technological breakthroughs.

- * the emergence of a new or advanced technology
- * the emergence of a new way of doing things which may lead to a technological breakthrough
- * a previous technology failure comes to light

PRINCIPLE 5. Changes in the volume or structure of a market.

- * a yes/no step function which will have an impact on market size
- * changes in market structure
 - * a shift in competitive positioning between organisations
 - * a change in international trading conditions

PRINCIPLE 6. A major player showing signs of strategic change.

- * a change in the declared “central strategy” or policy of a major player
- * a major player has introduced a “new recipe” or a new way of working
- * a major player is “shaking themselves about”
- * a shift in the behaviour of construction related industries

PRINCIPLE 7. The resolution or complication of current strategic issues for the industry.

- * a change in industry wide training regimes

PRINCIPLE 8. Analysis of past events or deductions about future events.

- * an explanation of previous events which now shows a “lock-in” situation
- * the expectation of an intervention as a consequence of a future predicted event
- * previously anticipated events which are now not going to happen