



An Introduction to the Strategic Choice Approach

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OVERVIEW

1. The Strategic Choice Approach (SCA) is an approach that helps decision-makers deal with complexity around strategic decision choices, and specifically in identifying and dealing with the interconnectedness of such choices. It particularly seeks to support decision-makers by helping to identify ways of managing uncertainty and creating the conditions for informed, real-time decision-making (Friend, 2001).
2. The SCA may be relevant where the following conditions exist, though this list is not an exhaustive nor definitive 'checklist':
 - a. There is more than one strategic issue and related courses of action that could be adopted within the problem space under consideration. This excludes problems of a binary nature, e.g. 'should we invest £Y in scheme X or not?'
 - b. At least one of these courses of action has some form of connectedness with another possible course of action.
 - c. There are sources of uncertainty within the problem space that that make it impossible within the relevant timescales to make an informed judgement of the best course(s) of action to take.
 - d. There is an appetite within the decision-maker (and stakeholders where relevant) to engage in a pragmatic, incremental and real-time approach to decision-making.
3. This brief overview of SCA has not scoped the use of SCA for application for defence / MoD decision-making but examples of applications for SCA given in the literature are:
 - a. An idealised dummy example of a medium-sized company assembling instruments for small boats, facing a set of linked locational and marketing choices, covering specific / urgent and broader / longer-term choices (Friend, 2001).
 - b. Developing a revised policy for the transport and storage of Liquefied Petroleum Gas (LPG), with a requirement to address linked issues related to different forms of transport, opportunities for landing, use of pipelines and safety standards (Hickling, 2001).
 - c. Setting priorities for national environmental policy-making, including legislation, licensing and data systems as linked options (Friend & Hickling, 2001).
4. The SCA requires a workshop setting with a skilled facilitator and a suitable set of participants who can inform the workshop-based analysis as well as to make and take ownership of the resulting decisions and actions. 'Back room' research and analysis is also required to understand customer requirements, to prepare materials (e.g. working papers) and to design and arrange the workshop(s). Practicalities are well covered in Chapter 9 of Friend & Hickling (2005).
5. This paper is designed to help the reader identify the scope for the use of SCA and to provide a basic level of understanding of the approach. It is intended to provide a brief, accessible overview of the topic rather than to reproduce the rich literature (principally Friend & Hickling, 2005), to which any analyst considering SCA should refer before using the approach. The paper particularly tries to identify and define the key activities within the SCA. It does this to provide a means of focusing the further research of any analyst considering use of SCA. This paper gathers and summarises key elements from Friend (2001) and Friend & Hickling (2005). Specific quotes and examples are referenced directly to these sources.

KEY CONCEPTS FOR SCA

UNCERTAINTY

6. The SCA acknowledges the presence of three broad areas of uncertainty, and the approach implicitly seeks to gather data on these. Any analyst using SCA should be aware of these as being sources of uncertainty that will affect data gathering and decision-making throughout the SCA process. These areas of uncertainty are:

- a. **Uncertainties about our working environment (UE).** These uncertainties can be managed through the gathering of generally technical data, and such data would broadly seek to respond to the statement: 'We need further information'.
- b. **Uncertainties about our guiding values (UV).** This form of uncertainty needs a more political response, such as on policy guidance, or a programme of consultations. Such data would broadly seek to respond to the statement: 'We need clearer policies'.
- c. **Uncertainties about choices on related agendas (UR).** This type of uncertainty requires further exploration of the structural links between decisions, including those decisions being made in the broader problem space. Data to manage these uncertainties may come from taking a broader planning perspective or working with other decision-makers, and would seek to respond to the statement: 'We need broader perspectives'.

7. It is important to note that the reduction of uncertainty through extensive data collection is not the prime aim of SCA. Rather, the approach seeks to manage uncertainty in a more strategic way, acknowledging that such data collection could come at the cost of resources and time delay.

'MODES' OF SCA

8. Four complementary modes of decision-making are identified as being the framework in which the *process* for SCA is placed. As with the three areas of uncertainty any analyst using SCA should consider the mode which is of primary importance at each stage within an SCA process. The SCA process does not mandate a linear movement through these modes; it specifically frames SCA as being flexible to allow free movement across modes, with such switching being consistent with the way that people tend to work when under pressure. These four modes are:

- a. **The shaping mode.** Decision-makers consider the structure of the set of decision problems, how choices should be formulated and the links between choices.
- b. **The designing mode.** Decision-makers consider what courses of action are feasible in relation to their current view of the problem space.
- c. **The comparing mode.** Decision-makers consider in what ways assessments of consequences should be made.
- d. **The choosing mode.** Decision-makers focus on how to agree to commitment on courses of action and future processes for such decisions.

PROCESS OF SCA

9. The following sections describe a broad process for SCA. This is to give an overview of the activities that are part of an SCA, rather than to provide a prescriptive model for how to conduct SCA. Indeed, SCA – in keeping with the principles of the four modes of working (see paragraph 8) – is not linear in its approach and requires a pragmatic and adaptable application of the following activities, which can be generalised as:

- a. Identifying the **decision areas**.
- b. Develop a **decision graph**, showing interconnectedness between decision areas.
- c. Agree on a **problem focus**.
- d. **Develop options** within each decision area.
- e. Identify **option bars**.
- f. Develop an **option graph**.
- g. Develop an **option tree** to identify feasible decision schemes.
- h. Identify **comparison areas**.
- i. **Make comparisons** and shortlist preferences.

- j. Identify **uncertainty areas**.
- k. Assessment of **exploratory options**.
- l. **Sequence options tree** to reflect urgency of decision areas.
- m. Develop **progress package**.

10. It is worth noting that the process of the identification of decision areas, the development of options and the option bar is also referred to as the Analysis of Interconnected Decision Areas (AIDA).

DECISION AREAS

11. This concept is described as “a means of describing and labelling any problem situation where people see an opportunity to choose between different courses of action” (Friend & Hickling, 2005, pp. 25). These decision areas should be phrased as questions¹ that could be answered with a set of options, and should also be labelled with a short, one-word or coded descriptor². This labelling helps ensure clarity when workshop participants are referring to difference decision areas.

DECISION GRAPH

12. A decision graph is used to show the interconnectedness of decision areas. Links are made between decision areas that need to be considered jointly rather than one at a time, i.e. it is not sensible or possible to make a decision on one decision area without knowing the status of the other decision area. The links do not necessarily imply causality.

13. The links between decision areas should be shown visually in a decision graph. The labelled decisions areas are described in circles, with links shown between those decision areas that have some form of connectedness. Broken and bold lines around decision areas can be used to show urgent and important decision areas, respectively. Broken lines between decision areas can be used to show uncertain links. A dummy example for an individual facing a set of linked decisions about whether to move house (LOCATE?), changing their job (JOB?), the possibility of house purchase (HOUSE?), how much to invest (INVEST?), what training courses to take (TRAINING?) and what sports to take up (SPORTS?) is given in Figure 1.

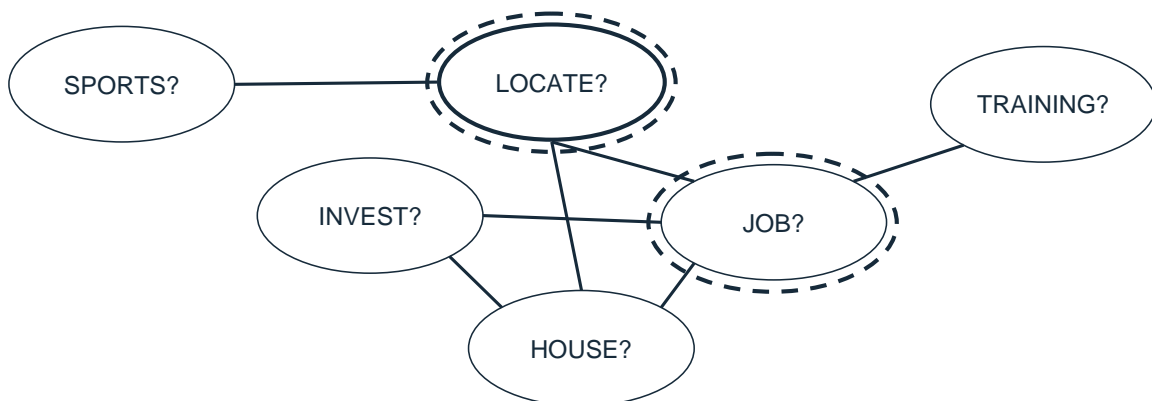


Figure 1 – A dummy decision graph, showing the representation of decision area labels in circles, with links between circles to reflect interconnectedness between decision areas.

¹ Examples are: ‘Where to locate the local shopping centre for South Side?’ and ‘Which route to choose to take the new arterial road across South Side?’ (Friend & Hickling, 2005); ‘Which operations to move from the present site?’ and ‘When to invest in new packaging technology?’ (Friend, 2001).

² For example: ‘Which operations to move from present site?’ labelled as ‘OPSMOVE?’ (Friend, 2001).

PROBLEM FOCUS

14. Where the number of decision areas is large (compared to time and resource available for analysis), a set of key decision areas may be identified by stakeholders / decision-makers as the 'problem focus'. There are no absolute rules for delimiting this problem focus, but the identification of a core of decision areas within the decision graph may support this selection. The problem focus may also be continually revised throughout the process. The problem focus is shown on the decision graph in Figure 2 with a dash – dot line. This shows that the decisions on sports and training are not considered as core to the problem focus because they are low in importance in comparison to the other decision areas.

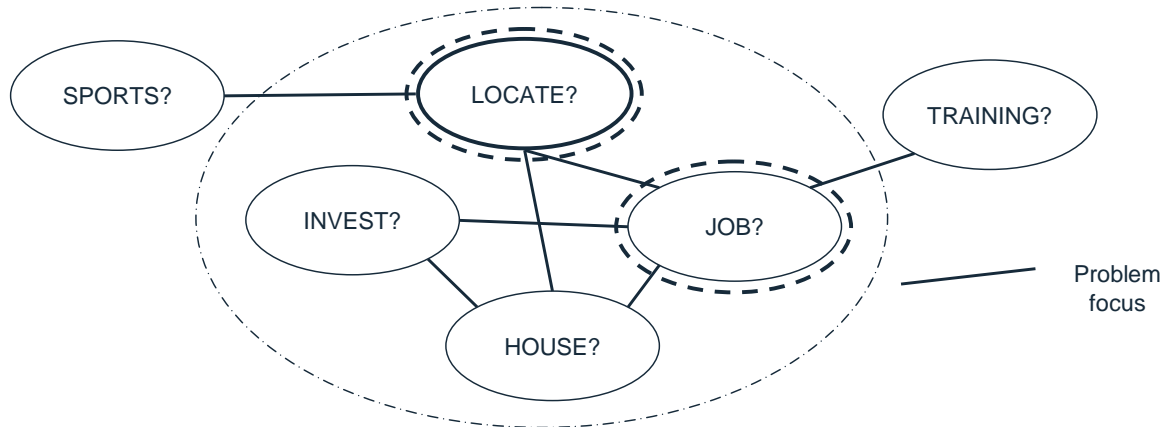


Figure 2 – A dummy decision graph, showing the definition of the problem focus through the use of a dash – dot line.

DEVELOP OPTIONS

15. Different options for each decision area should be identified and recorded. These options should be fully representative of what is possible within each problem area as well as being mutually exclusive. The former requirement can be fulfilled by considering null options (i.e. do nothing) and packages of options (i.e. the combination of two or more of the individual options within the problem area). Where the options are scaleable (e.g. level of investment) rather than discrete (e.g. open new store at location A or location B), discrete points along the scale should be provided as options. As part of the non-linear, cyclical nature of SCA, further options may be developed at any point during the process. Examples of options are:

- a. Decision area: 'Where to locate the local shopping centre for South Side?' Options: Main Street; King Square; Gasworks Site. (Friend & Hickling, 2005)
- b. Decision area: 'Which operations to move from present site?' Options: Instruments, Packaging, Both. (Friend, 2001).

OPTION BARS

16. The identification of compatibility between options in different decision areas is a vital part of SCA. Some options will not be compatible with other options, for a variety of reasons. For example, the choice of road development will dictate which of the options for shopping centre location would be viable (Friend & Hickling, 2005). Incompatibility between two options is described as an 'option bar'.

17. The discussion of compatibility may be based on a matrix of options for pairs of decision areas. This is known as a compatibility matrix.

OPTION GRAPH

18. Option bars can also be reflected in visual form on an option graph, which is an extension of the decision graph. This option graph shows option bars as being lines between two options within different decision areas. Option bars that are doubtful or in dispute may be shown as broken lines.

19. The logic behind showing incompatibility rather than compatibility in these options graphs is related to the observation that generally there are higher levels of compatibility than incompatibility and minimising links shown within the options graph helps with interpretation. A dummy example option graph is shown in Figure 3. This is based on the problem focus area of the decision graph given in Figure 2. It shows, for example, that location C is incompatible with job type M and that house type T (e.g. an expensive option) is not compatible with level of investment Z or X. Dotted lines show uncertainty in relation to the compatibility of job type N and locations A and C.

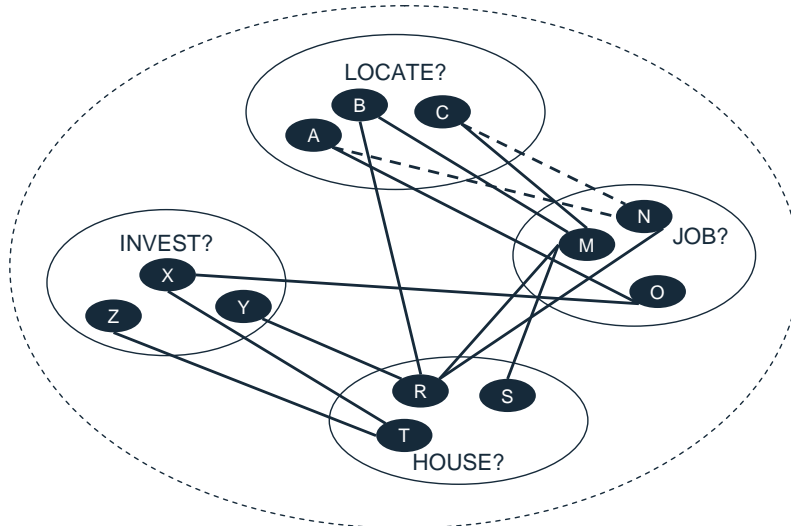


Figure 3 – Dummy option graph showing option bars between pairs of options.

OPTION TREE / DECISION SCHEMES

20. The combination of options from each decision area that are compatible (i.e. don't have option bar links in the option graph) are formed into 'decision schemes'. Each set of compatible options is described as a feasible decision scheme, and is given an individual number or label.

21. Decision schemes are shown in an option tree. The option tree shows the options for each decision scheme and how they are combined to form each feasible decision scheme. Figure 4 shows the first part of such an option tree for feasible decision schemes. It shows that there are no decision schemes that include location B *and* job type M as the option graph in Figure 3 shows an option bar between this pair of options.

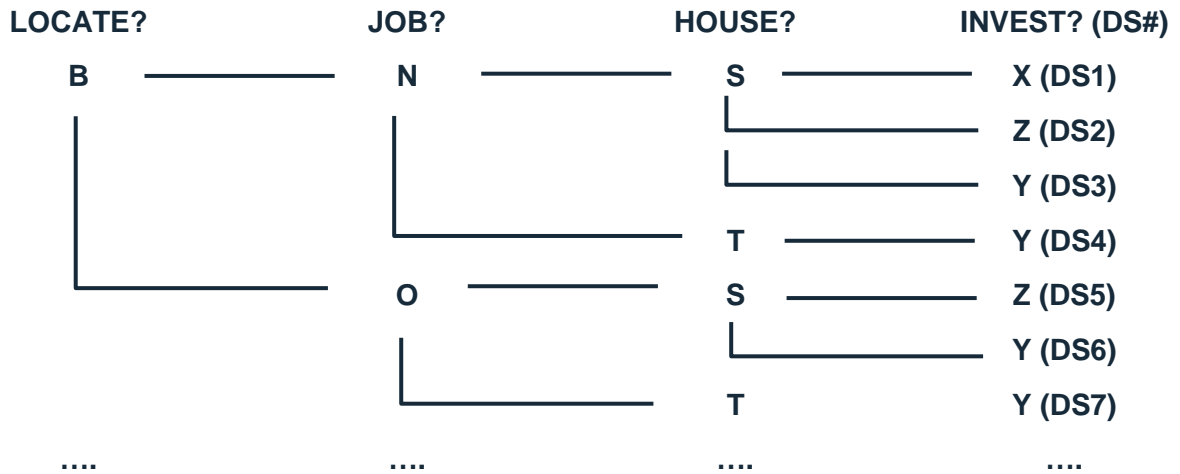


Figure 4 – First few lines of an Option Tree for the dummy example shown in Figure 3. Each Decision Scheme is coded with a decision scheme (DS) number.

COMPARISON AREAS

22. In order to select the most appropriate decision scheme(s), it is necessary to have a basis on which to make comparisons between each of the decision schemes. SCA creates this basis by identifying ‘comparison areas’. A comparison area can “be seen as simply a description of some area of concern to the participants in a decision process, within which they may wish to consider what the consequences of alternative courses of action may be” (Friend & Hickling, 2005). Having multiple comparison areas on which to assess decision schemes is seen as a multi-criteria approach, though the term criteria is generally avoided in this context as it has different meanings to different people.

23. A comparison area is recorded with a single line description, as well as with a single word or coded label. The comparison area should be described with an effect and an incidence in terms of community sectors or interest groups (effectively the ‘what and to whom’). Examples of comparison areas are:

- a. Differences in net flows of income to this authority (Friend & Hickling, 2005).
- b. Differences in confidence and quality of life for South Side residents (Friend & Hickling, 2005).
- c. Impact on company image (Friend, 2001).
- d. The promotion of public safety (Hickling, 2001).

MAKE COMPARISONS

24. The comparison areas are used to make an assessment of the decision schemes identified. The first step in the comparison process may be to create a shortlist of decision schemes by using the key comparison areas to do a brief assessment of all decision schemes. Shortlisting may be based on the use of thresholds. In this case, any decision scheme that is assessed as not passing a set threshold for any of the comparison areas is automatically excluded. Shortlisting reduces the burden of doing the main part of the comparison effort, which is to make comparisons between pairs of shortlisted decision schemes using the comparison areas.

25. Comparison between pairs of decision schemes is undertaken by looking at comparative assessment. The relative merit of one scheme compared to another is done by identifying which scheme has an advantage for each comparison area. This assessment puts the preferred scheme

of each pair at a point along a scale of “extreme”, “considerable”, “significant”, or “marginal” advantage, for each comparison area. This is done visually, typically on a piece of flip chart paper.

26. The uncertainty around this assessment is also important, and so is shown by recording the upper and lower estimate for comparative advantage. The sources of uncertainty should also be discussed and recorded.

UNCERTAINTY AREAS

27. Areas of uncertainty will be identified during the SCA process, but will most likely appear during the comparisons of schemes. All areas of uncertainty should be recorded when they first arise, and labels may also be added to descriptions of each uncertainty area. Each uncertainty area may also be labelled according to its relationship with the three areas of uncertainty described in paragraph 6. The prominence (relative importance) of the uncertainty area may also be graded on a four-point (or starred) scale. Examples from Friend (2001) of uncertainty areas (with type of uncertainty area and rating of prominence of four-point scale) are:

- a. Growth potential of aircraft market (UE) (***)
- b. Value of established maritime image (UV) (****)
- c. Disposal of disused storage building (UR) (***)

EXPLORATORY OPTIONS

28. In order to identify what may be done to reduce the level of uncertainty in the uncertainty areas it may be appropriate to identify and assess ‘exploratory options’ for either all or the most prominent of the uncertainty areas. These exploratory options describe what actions – always including the null option of ‘no action’ – may be used to reduce uncertainty. These actions involve some form of proposals for investigation (UE), policy consultation (UV) or some form of negotiation or joint planning with other parties (UR). Examples include: consult key directors, phone an expert, open negotiation, or ask company owners (Friend, 2001). The exploratory options can also be assessed in terms of costs and benefits (reduction in uncertainty) of undertaking those activities.

29. This assessment can then lead to the statement and agreement of a strategy (set of actions) for managing uncertainty. This strategy can directly support the further assessment of decision schemes by providing further data to make further or more-informed assessments against the comparison areas.

SEQUENCE OPTIONS TREE

30. It is possible to re-structure the option tree to reflect the relative urgency of decision areas. This is done by sequencing the options under different decision areas, to position the most urgent decision areas to the left-hand side of the tree. For example, for the option tree in Figure 4, this re-sequencing could see decision area ‘HOUSE?’ move to the left-hand side position. Such re-sequencing can be useful to identify what the implications of decision schemes could be if a decision was made in an urgent decision area, i.e. would it affect a significant number of feasible decision schemes?

PROGRESS PACKAGE

31. The framework for reflecting the key aspects of the problem situation identified during the SCA process is the ‘Progress Package’³. This framework can take a variety of forms, though it is suggested that it would normally be a grid that summarises:

³ This can also be referred to as the ‘Commitment Package’, though this term may be best retained until the Progress Package is finalised and agreed upon.

- a. Steps to be taken now and steps to be taken in the future.
- b. Actions related to decision areas. This may be supplemented with detailed information.
- c. Agree exploration for uncertainty areas. This may be supplemented with detailed information.
- d. A breakdown of the above for different areas of responsibility, e.g. organisational departments.

FACILITATION AND SOFTWARE SUPPORT

32. The facilitation-based nature of SCA is described in Friend (2001):

“The strategic choice approach sets out to provide a set of tools not so much for backroom use by experts as to facilitate and structure communication among participants with varying perspectives and skills, and also often with varying accountabilities to outside interests. To this end, the emphasis is on methods that are transparent and make extensive use of graphical forms of representation – whether the medium be that of flipcharts or computer display. Also important in a workshop is the arrangement of space and availability of appropriate materials. An ideal room is large enough so that people can work informally, with tables pushed aside so that they can move freely. Usually they sit in a semicircle, facing the facilitator. Behind the facilitator is an area of uncluttered wall space for progress to be continuously recorded with flipcharts displayed side by side to form a developing picture of the problem structure as it is being agreed through the discussion.”

33. A key point for the facilitation of SCA, is that the process is not linear and that data will arise from the group at different stages and will need to be recorded where it arises, rather than the group being micro-managed to adhere to a strict, linear process.

34. SCA can be supported by STRAD software, which provides a variety of data capture windows that broadly replicate the tables and graphs that would otherwise be captured on flip chart.

CONCLUSION

35. There are a number of different activities within SCA, all of which occur in a non-linear way across the shaping, designing, comparing and choosing modes within SCA. As a result of this non-prescriptive, non-linear process, the application of SCA seemingly requires a pragmatic and well organised facilitator to make best use of the various tools of SCA. It also seems likely (in the author's opinion) that any analyst who can competently operate SCA will be better equipped to tackle the uncertain and complex strategic choice problems that are abundant in the public sector. It is hoped that this paper offers some initial guidance to anybody who is considering the use of SCA, but it is reiterated that such an analyst requires more guidance and coaching before they use the SCA than can be offered in this paper.

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<p>This paper provides a brief introduction to the Strategic Choice Approach. The Strategic Choice Approach (SCA) is an approach that helps decision-makers deal with complexity around strategic decision choices, and specifically in identifying and dealing with the interconnectedness of such choices. It particularly seeks to support decision-makers by helping to identify ways of managing uncertainty and creating the conditions for informed, real-time decision-making. This paper is designed to help the reader identify the scope for the use of SCA and to provide a basic level of understanding of the approach. It is intended to provide a brief, accessible overview of the topic rather than to reproduce the rich literature in this area, to which any analyst considering SCA should refer before using the approach. The paper particularly tries to identify and define the key activities within the SCA.</p>			
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