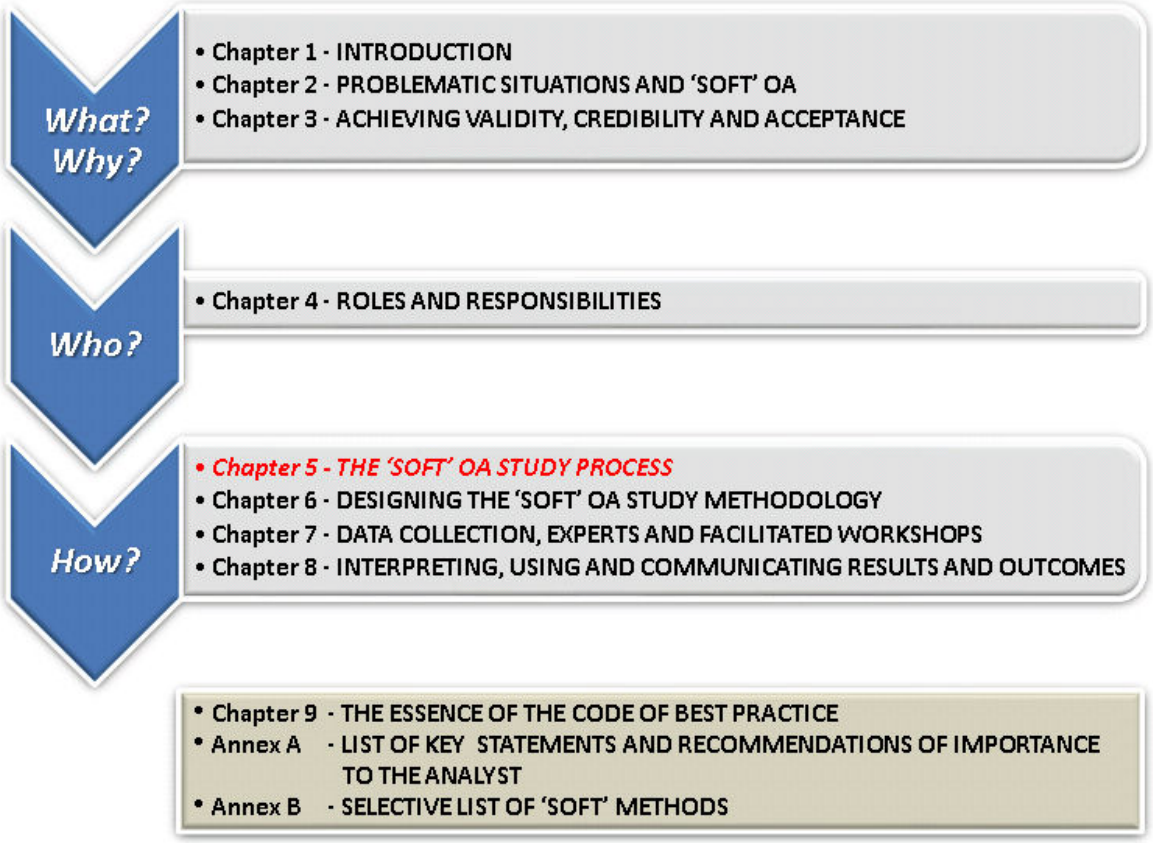
Chapter 5 – THE 'SOFT' OA STUDY PROCESS



- Consider designing the study as a process with the following phases:
  - *Appreciation* – 'What is happening'?
  - *Analysis* – 'Why and how is it happening'?
  - *Assessment* – 'How can it happen in a better way'?
  - *Action* – 'What needs to be done'?
- Ensure that the study team and the (group of) client(s) reach an agreement about the following concepts at the end of each of the 4A-phases:
  - *Study plan* (← Appreciation phase),
  - *Problem understanding* (← Analysis phase),
  - *Set of options* (← Assessment phase),
  - *Action plan* (← Action phase).
- Be aware that the people involved in the process belong to one of the following groups, though they should cooperate with each other:
  - *Study Team*: group of people who 'do the work' (e.g. the facilitator, the analysts, the SMEs, and subsets of other stakeholder types including clients);
  - *Client(s)*: group of decision makers (possibly including sponsors and customers).
- Be aware of the iterative (cyclic) and dynamic nature of the process and its phases.
- Recognise the divergent or convergent nature of subsequent phases and accommodate for it.
- Ensure that the plan for application of 'soft' methods is understood by participants and clients as part of their programme of progressive development. The same goes for the outputs and their utility.
- Provide a framework which allows decision makers to carry through their decision-making processes in a structured, auditable way.
- Create a roadmap depicting achievements and interrelations, perhaps in a facilitated workshop.

5.1 INTRODUCTION

This chapter recommends in the application of 'soft' OA that a study be conducted as a dynamic iteration cycle. As 'real-world problems' are inevitably multi-dimensional and therefore require a number of issues to be dealt with and a number of people to involve, a solution approach to these types of problems is usually not a single event but a process organised as a number of subsequent phases [1]. This chapter will address each of these phases. It will also address the iterative nature of the process and its stages of divergence and convergence.

5.2 HOW PEOPLE INFLUENCE THE 'SOFT' OA STUDY PROCESS

Processes that support human decision making within messy problem spaces and involve the participation of several decision makers, very often concentrate on satisficing rather than pure optimisation. Study procedures applied in these situations should support, in addition to the appreciation (ref. Section 5.3.1) and analysis (ref. Section 5.3.2) of the problematic situation [2]:

- The discovery of alternative options;
- The development of acceptable solutions or ways forward to improve the problematic situation;
- The systematic gathering and analysis of information; and
- The use of bounded rationality[1] that recognises people's cognitive limitations.

This implicates two central elements in problem resolution processes: negotiation and social relationships [2]. Personal interrelations as well as individually diverging agendas and objectives of the participants influence the problem resolving process and necessitate negotiation efforts in order to reach a satisfactory solution.

In general, the processes of using 'hard' and 'soft' OA approaches to problems are not necessarily fundamentally different from each other. The challenge of achieving an effective complementary approach that combines 'soft' and 'hard' OA methods lies within the blending of people, process, and analysis skills that suits the given problem structure and supports the achievement of a common understanding with and of the clients involved [2].

The choice of ('soft'/'hard') methods cannot be fixed at the beginning of a study but evolves from a critical reflection of the developments during the study [5].

Critical success factors for the study are the development among the analysts, clients, and further stakeholders involved into the problem resolving process of [6]:

- A shared understanding;
- A sense of common purpose; and
- A commitment to the way forward.

This intense involvement of a variety of people in the decision-making process coupled with the necessity for strong communication, coordination, and facilitation amongst them, may be regarded as one of the major differentiating characteristics between the application of 'soft' and 'hard' OA methodologies.

[1] The term 'bounded rationality' was introduced by Herbert A. Simon [3]. It describes the inability of human beings to optimise rationally their decisions due to the complexity, dynamics, and ambiguity of decision environments. For a certain (personal) constraint system, the decision maker will rather satisfice than optimise within his system due to a lack of important information concerning the definition of the problem or of relevant criteria [4]; he will stop his optimisation process when a 'satisficing' solution (that may not necessarily be the optimum) has been reached.

Defining an iterative decision cycle that synchronises the points of view of both the study team and the client team by making use of experienced facilitating analysts is an effective method to create useful approaches to solving problematic situations. Iteration in the process creates the flexibility to adapt the problem perception and to reconsider the methodological approach. Furthermore, it encourages the people involved in the decision-making process to rethink their approaches and perceptions.

Dealing with problematic situations that require the extensive use of human judgement in the decision-making process needs a process that is dynamic and open to changes caused by new insights or changing minds. An iterative process that supports the factors described above is elaborated in the following sections.

5.3 THE PHASES OF A 'SOFT' OA STUDY PROCESS

The analyst is responsible for developing the study design (e.g. process, stages, sessions, interviews) and for adapting (or fine-tuning) it as the study proceeds[2]. This includes making decisions regarding whether to apply a combination of 'soft' and 'hard' OA, and in what manner[3]. The clients' perceptions and reasons for commissioning the study influence choices regarding the study design. For example, some clients may express a preference that quantitative results should be part of the study outputs.

At the outset of 'soft' OA studies, analysts do not 'set in stone' the predetermined methods, techniques and procedures that will be applied in a pre-established order to address, or produce a solution to, the problematic issues under investigation. The application of 'soft' OA tackles problems in a dynamic way in which the development of understanding and learning is non-linear and which requires a flexible and adaptive approach to analysis. As such, the analyst continually and critically reflects on the different dimensions of the problem space, on the intellectual resources available, on the process (e.g. legitimacy, potential sources of error and bias) and on the outcomes in order to ensure that an appropriate combination of methodologies, techniques and processes are being applied to address the situation at hand and to find ways in which the process could be made even more efficient and effective. This is part of the iterative behaviour that the CoBP seeks to encourage.

In order to preserve the possibility of adapting the problem structure identified and with it the chosen methodological approach and model, an iterative decision support process is advised. This process is divided into phases that follow each other sequentially but not in a 'one-way' manner; if indicated, earlier phases can be repeated and will then influence the follow-up phases.

A distinction should be made between the following four main phases which helps design the study[4] (based on [1] and [7]). These '4 A-phases' (as referred to in this CoBP) are composed of:

- *Appreciation* – Activities to sense the problematic situation, identify all stakeholders and their viewpoints and assumptions, and other circumstantial factors ('what is happening').
- *Analysis* – Activities to actually analyse and structure the problematic situation, further develop and clarify all assumptions, aspects, perspectives and influencing factors and their (causal) relationships. It includes provision of information (data), possibly developing and relying on one or several models as representation constructs to create deeper understanding based on the model outputs ('why and how is it happening').
- *Assessment* – Activities to develop, investigate and compare ways of change and improvement and estimate/predict their consequences, and recommend one or more ways ahead ('what is the consequence of what is happening and how can it be changed to generate better consequences').

[2] A detailed analysis of the roles and responsibilities of the people involved in the 'soft' OA process is the subject of Chapter 4 of the CoBP.

[3] This issue is a central aspect of Chapter 6 of this CoBP.

[4] The four phases could help design any OA study.

- *Action* – Activities to arrive at a final conclusion (or even decision) and a recommendation of how implementation should be conducted ('what needs to be done').

The four phases listed above are similar to the (military) 'Observation, 'Orientation', 'Decision' and 'Action' loop (OODA loop[5]; Figure 5-1). The analyst should for each of these main phases determine its aim and what is required in terms of study activities. This should be based on the study's ultimate aim and in agreement with the client(s) including the key stakeholders.

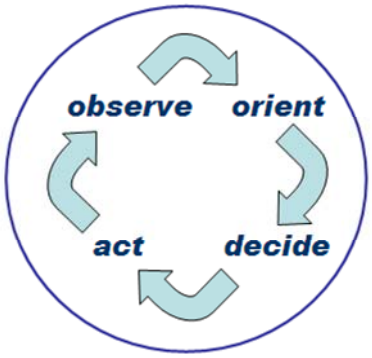


Figure 5-1: Military OODA Loop.

Figure 5-2 shows the iterative process model of 'soft' OA which – after initiating the study – consists of the four main phases described above and tasks which are assigned to either the 'study team' or the 'client(s)'. The process cycles between the two teams and relevant information and decisions are developed during facilitated meetings (see Chapter 7).

[5] Or 'Boyd cycle' after its inventor USAF COL J.R. Boyd; see also [8]. In the field of 'situational awareness' a similar planning cycle exists using three levels [9]:

1) Level 1 – perception of the elements in the environment (i.e. gather the elements to build up a model);
2) Level 2 – comprehension of the current situation (i.e. validate the model as reflecting the common picture of the present); and
3) Level 3 – projection of future status (use the model to forecast consequences of possible interventions).

As a last example, the 'soft' methodology 'Strategic Choice' distinguishes between: shape, design, compare and choose.

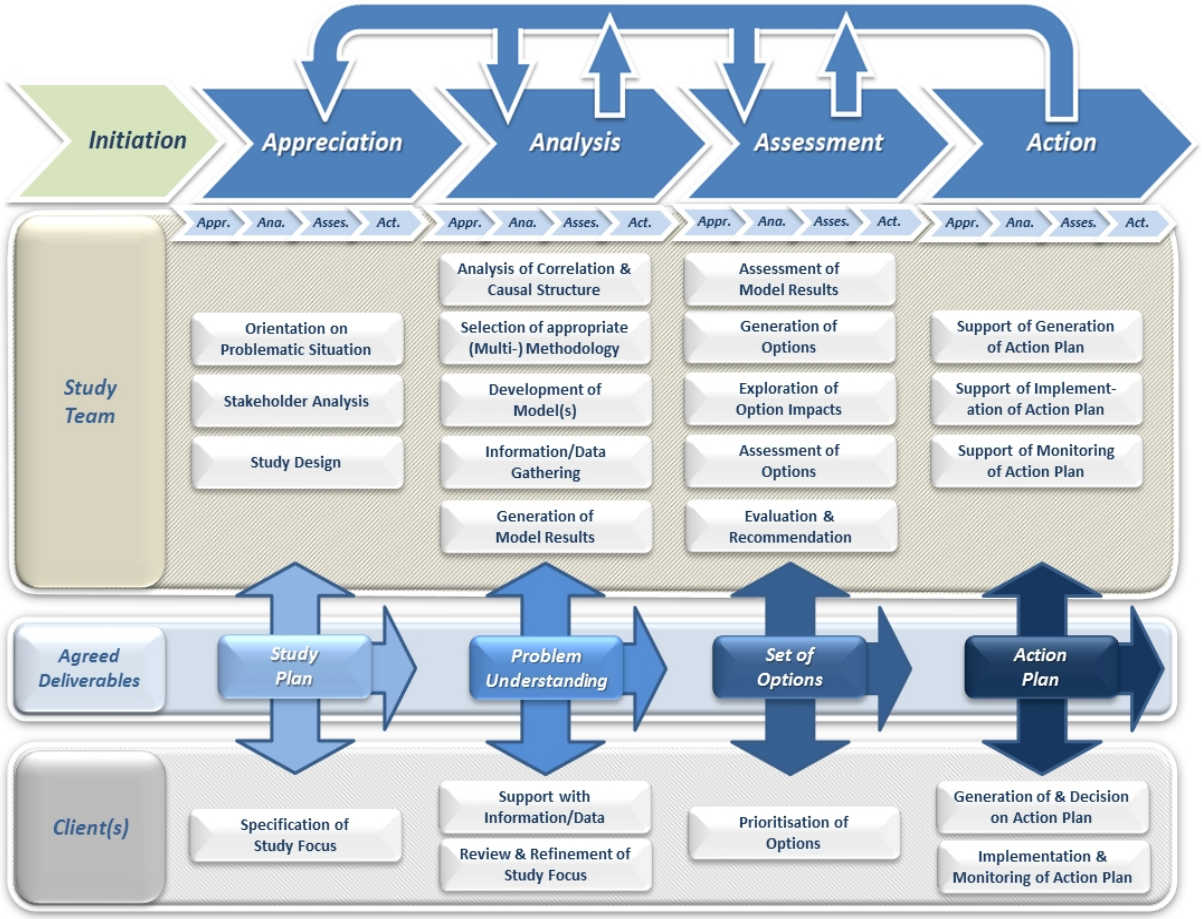


Figure 5-2: The Iterative 'Soft' OA Study Cycle.

The methodology of problem structuring ('Problem Structuring Methods', PSM), encompassing a large number of specific methods, is the predominant methodology used to understand a problematic situation, identify the concepts that are relevant and structure the relationships between them. They can therefore be used in the phases of appreciation and analysis. Although the term suggests that it stops at this point, many PSM allow progress toward the design of options and actions.

Decision making regarding problematic situations often involves a variety of stakeholders[6] (ref. Chapter 4); the iterative process depicted in Figure 5-2 considers this fact by assigning tasks to the study team and the client(s).

The study team (people who actually work on the problematic situation including participating clients and other stakeholders) and the client team (clients, particularly sponsors and other people from the client system, who have to make decisions about progress and deliverables) have to work collaboratively towards a common goal.

In each of the four A-phases of the process, both groups have to perform certain tasks that will at specific synchronisation points (milestones) converge into an agreement between the two; this agreement builds the basis for the further process work. If it is not possible to reach a common understanding between the two groups it may be necessary to return to an earlier phase and refine or reconsider the work done in that

[6] Analysts and facilitators are sometimes not considered to be part of the group of stakeholders within a decision-making process (ref. Chapter 4) but they are an integral part of the study team.

phase. Through this mechanism, the common decision-making process stays dynamic and iterative. This, on the one hand, may lead to a longer process turnaround time and increased complexity caused by the communication and coordination efforts. On the other hand, this approach supports the development of an exact and detailed problem understanding between the study team and the client(s) which is a necessary condition in order to generate an appropriate action plan as a result of the decision-making process.

The nature of the four A-phases is twofold (Figure 5-2). First, they are primary drivers to progress the study and provide waypoints for agreed deliverables. In addition, they should be used as activities within these phases to refine each of the phases in an iterative manner. Thus the Analysis phase may include the techniques applicable to the Appreciation, Assessment and Action phases in producing the agreed deliverable of the Analysis phase. This is illustrated in Figure 5-2 by the small-sized A-phases at the secondary level (Figure 5-6).The remainder of this section will discuss the main phases and the tasks that are carried out in each main phase. Section 5.4 will discuss the iteration and parallel processing aspects, also shown in Figure 5-2, more in-depth.

The first process step that starts off the (global) 'soft' OA process is the initiation-step. This process step is conducted just once, in contrast to the following process-steps that may be iteratively repeated. After the initiation of the process of 'soft' OA the following issues have become clear:

- A specific *problem* or a *problematic situation* exists and needs to be resolved;
- A (group of) *client(s)* exists who need(s) decision support;
- A *study team* has been contracted by the client(s); and
- A *study* will be conducted to provide decision support.

Having settled these initial issues, the 'study team' and the 'client(s)' enter the first phase of the 'soft' OA study process.

5.3.1 The Appreciation Phase

The first phase of the iterative process of 'soft' OA is the Appreciation phase. The central task within this phase is to orient on the problematic situation, thereby gaining an understanding of the people involved as well as the problem's environment.

For the study team, the Appreciation phase is divided into the three following tasks:

- Orientation on the problematic situation;
- Stakeholder analysis; and
- Study design.

The central task for the client(s) lies in providing the 'Specification of the study focus'.

This phase requires an intense interchange between the study team and the clients in order to create a clear picture of the problem environment as well as of the stakeholders involved.

As a result of this phase, a commonly agreed study plan should be developed which comprises the answers to the 'why?', 'what?', 'who?', and 'when?' of the study (adapted from [10]):

- *Why* is the problem addressed by the study?
- *What* tasks, work packages will be completed by the study?
- *Who* will be involved and what will be their responsibilities within the study?

- *When* will which tasks be performed and in which order? What is the study timeline?

The study plan is a formal, approved document used to guide both study execution and study control. The primary goal of the study plan is to document planning assumptions and decisions, to facilitate communication among stakeholder, and to document approved scope, cost, and schedule baselines (adapted from [11]). Although relevant to all studies, this is of special relevance to 'soft' OA studies considering the importance of communication and documentation of changed assumptions, etc.

Study plan as a central element of communication and coordination:

- guides study execution;
- documents study planning assumptions;
- documents study planning decisions regarding alternatives chosen;
- facilitates communication among stakeholders;
- organises and ensures communication between study and client teams;
- drafts a staged study plan;
- should document deviations from the original plan and give reasons why;
- provides a baseline for progress measurement and study control.

This phase requires the ability of the study team to capture and interpret the clients' knowledge and expertise as well as their attitude towards existing solutions and their effective involvement into the decision-making process [12]. This process may involve the conduct of interviews with the client(s). The results of these interviews may be visually presented as individual cognitive maps that will later on converge into a group map and will constitute the starting point for the development of a common understanding of the problem environment [12].

Another major aspect within this phase is the recognition of the nature, level and source of uncertainty; the decision on how to cope with the identified type of uncertainty is depicted in Figure 2-2 and affects the further study design in terms of, for example, choice of methodology. The basic approaches to dealing with (respectively prepare for) uncertainty are discussed in Section 2.3. Section 6.3 of this CoBP discusses approaches for the analysis and handling of uncertainty in detail.

At the end of the Appreciation phase the study team and the clients are expected to have a common understanding of the problem environment and of the next steps to undertake. This should be documented in the study plan. Furthermore, the study team will not only have a clear understanding of the structure of the client system and the stakeholders that comprise it, but will also have a strategy for coping with different types of stakeholders.

5.3.2 The Analysis Phase

After exploring the problem's environment and the outline of the problematic situation in the Appreciation phase, the problem itself moves to the centre of attention within the Analysis phase.

For this reason the major work of the study team consists of the following tasks:

- Analysis of correlation and causal structure;
- Selection of appropriate (multi-)methodology;
- Development of model(s);
- Information/Data gathering[7]; and
- Generation of model results.

[7] The 'Development of Model(s)' task may be separated from the 'Information/Data Gathering' task but this is not always necessary: e.g. drafting a diagram of all issues that define the problematic situation is in fact the development of a model and organisation of information at the same time.

For a successful conduct of the Analysis phase a close interaction with (part of) the clients is necessary. Therefore, the clients should provide time for the following tasks:

- Support with information/data; and
- Review and refinement of study focus.

As a central result of this phase, the study team and the clients have achieved and agreed to a common problem understanding that will be the basis for the selection of an appropriate (multi-) methodology.

After reaching a common understanding of the nature of the problem, the study team faces the task of defining an appropriate (multi-) methodology and with it the gathering of necessary information and data. This may take place during workshops conducted with (parts of) the (group of) client(s).

The amount of data and information accumulating while developing and processing some specific model approaches can be large and may at first appear unmanageable to the participants involved in the decision-making process. In these cases an approach to resolve this situation is to develop a road map that depicts the achievements reached so far as well as their interrelations [2]. Besides the improvement of the problem understanding, this approach supports the handling of the complexity of the problematic situation even if it cannot reduce it. It should be noted that reduction in complexity may negatively influence the effectiveness of the action plan chosen as a result of the iterative process.

Such roadmaps may not be easily understandable by those not directly involved in the study. Ownership of them is best allocated those who were closely involved in their creation [2]. It is therefore strongly recommended that its creation should take place in a facilitated workshop (ref. Chapter 7 on workshop facilitation) which equally involves the study team as well as (parts of) the (group of) client(s). This furthermore is a way to involve the client(s) in the model building process and to ensure a common problem understanding.

A crucial element in the choice of methodology as well as the modelling process itself is the handling of uncertainty factors which have been identified in the Appreciation phase. The impact of uncertainty attached to the data and information gathered in this phase has to be mitigated by choosing an appropriate methodology (ref. Section 6.3).

The validation of judgement-based models is rather of a qualitative nature. Particularly Chapters 2, 3 and 7 deal with issues of validation and verification. One important aspect of conducting 'soft' OA according to Phillips [13] (see also Section 5.4) lies in ensuring that everyone involved in the decision-making process approves of the methodological approach chosen and the respective model developed. Therefore, it is inevitable that the study team works closely together with the (group of) client(s) in a controlled and facilitated manner.

5.3.3 The Assessment Phase

Having generated a set of model results, the study team has to assess these results and generate action alternatives in regard to the shared understanding of the problem as well as the previously specified and agreed study focus. For this, the Assessment phase consists of the following tasks:

- Assessment of model results;
- Generation of options;
- Exploration of option impacts;
- Assessment of options; and
- Evaluation and recommendation.

The assessment of the model results may imply a variety of lines of action. The generation and assessment of these options and their impact is a major task for the study team within this phase. Furthermore, the effects of the choice of how to deal with the factors of uncertainty identified in the first phase and considered in the model development of the second phase manifest themselves in the Assessment phase.

Becoming aware in this phase that the approach to coping with the type of uncertainty initially assumed to belong to the problematic situation has been the wrong one, could necessitate the repetition of the second (reconfiguring the methodological approach) or even the first (reconsidering the initial assumptions) phase.

After defining and evaluating a set of action options, the study team identifies a recommended sub-set of these options. Consequently, the (group of) client(s) has to fulfil the task 'Prioritisation of options'.

As a result, a rated (sub-) set of options that may resolve (part of) the problematic situation is defined and builds the starting point for the following Action phase.

5.3.4 The Action Phase

The Action phase begins with the transformation of the set of prioritised options into a (number of) action plan(s) which is subsequently followed by the implementation of a chosen/agreed action plan. This task itself will involve the analysis and assessment of alternative action plans which may be organised similarly to the first two 'A-phases' of this chapter and which may require a small study on its own.

The study team could offer the following types of support to the client(s):

- Support of generation of action plan;
- Support of implementation of action plan; and
- Support of monitoring of action plan effects.

The following tasks have to be carried out by the (group of) client(s) in the Action phase, possibly supported by the study team:

- Generation of and decision on action plan; and
- Implementation and monitoring of action plan.

In a facilitated meeting, the study team together with the client(s) identify an action plan that is most likely to meet the requirements that have been specified throughout the iterative 'soft' OA study process. Subsequently, the action plan is implemented by the client organisation.

The implementation of the chosen action plan can produce effects that may not have been predicted or that may hint to a false analysis and assessment of the current problem and its environment. It may therefore be necessary to reconsider earlier phases (or tasks) of the iterative 'soft' OA study process or to repeat it entirely starting with the Appreciation phase.

5.4 ITERATIONS THROUGH THE 'SOFT' OA STUDY PROCESS

The application of mixed methods/methodologies is quite often the most promising way of meeting the demands of the multi-faceted nature of problematic situations. In addition, one or more of the four A-phases may have to be conducted more than once. Furthermore, this may take place sequentially or in parallel – where indicated and possible – and may lead to various combinations of iteration of 'soft' OA techniques.

Figure 5-3 gives an example of a sequential iteration through the 'soft' OA study process. Whereas earlier in this chapter the possibility of jumping back to preceding phases with respect to the application of a single methodology has already been indicated, Figure 5-3a shows the adaptation of this principle for two methods (one for each cycle) and Figure 5-3b shows that methods may be different per phase per cycle.

Figure 5-3a: Example of Sequential Phase Iteration (A Different Method Per Cycle).

Figure 5-3b: Example of Sequential Phase Iteration (A Different Method Per Phase Per Cycle).

If, however, for a specific problematic situation the application of two methodologies (e.g. mixed 'hard'/'soft' or 'soft'/'soft') may seem appropriate, a possible iteration may induce the parallel conduct of the Analysis and Assessment phases as depicted in Figure 5-4. Such possibilities should be taken into consideration when designing the study during the Appreciation phase.

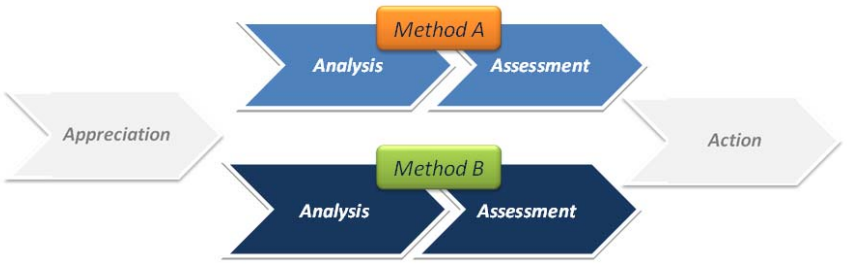


Figure 5-4: Example of Partially Parallel Phase Processing.

It may be necessary to run through all phases for each methodology, leading to a parallel two-threaded 'soft' OA study process as depicted in Figure 5-5.

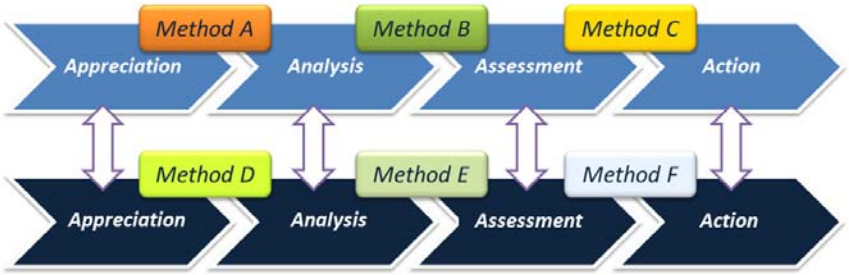


Figure 5-5: Example of Full Parallel Phase Processing with Different Methods.

The nature of the specific problematic situation, as well as the evaluation of the (group of) client(s), will help determine whether this setting should be dealt with in two separate studies or, if coherence requires, they are best treated by parallel execution. Chapter 6 discusses in detail the multi-methodological approach in the context of the application of 'soft' OA.

The four A-phases of the 'soft' OA study process describe the predominant activity in terms of the 'global' (or higher) problem level whereas at a 'local' (or lower) problem level (respectively at one smaller sub-set of the problematic situation) all four activities are conducted within the respective main phase before reaching the next main phase.

Figure 5-6 illustrates[8] how each main phase may include tasks (and methods) that are typical of other main phases, in a varying intensity and most likely requiring a varying amount of time. Of course, at the global study level, the major emphasis will be on the tasks and the use of methods that are typical of a specific main phase (i.e. the diagonal from the lower left corner to the upper right corner of the diagram), but at the local study level within a main phase there may be a similar sequence of study phases. Consideration of the other phases will also ensure that the overall study goal is kept in mind while working at the specific phase.

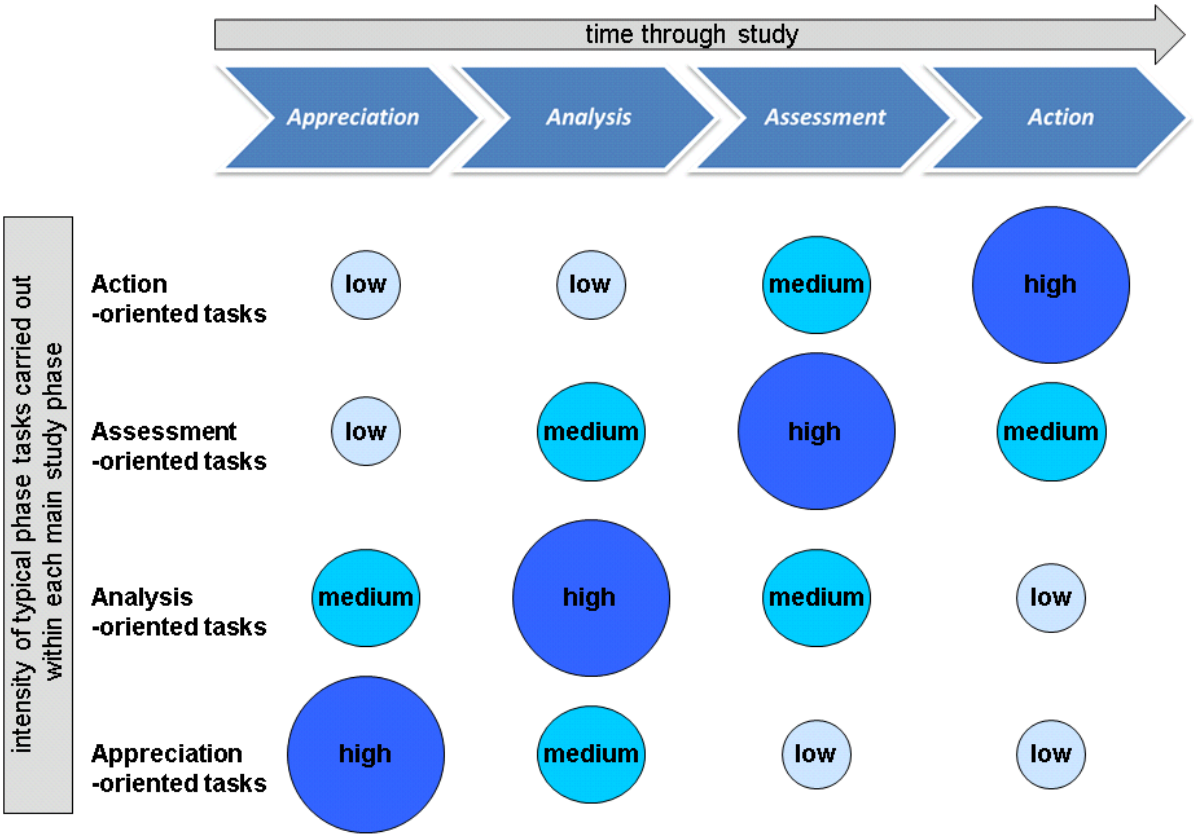


Figure 5-6: Each Main Phase Requires, in a Varying Intensity, Tasks that are Typical of All Phases.

An example within the Analysis phase may look like this:

- Appreciation of the problem's defining factors, including the selection of a suitable methodological approach for problem analysis (medium intensity in Figure 5-6).

[8] See [14] for an alternative way of illustrating this.

- Analysis of the problem's defining factors and their interrelationships (perhaps cause-effect relations) by developing and using a (causal) model and generating model results (high intensity in Figure 5-6).
- Assessment of the results (key concepts, key objectives, etc.) and the initially chosen methodological approach for the study (medium intensity in Figure 5-6).
- Action A: restart overall Analysis phase with different approach, or Action B: proceed to overall Assessment phase (low intensity in Figure 5-6).

In Figure 5-2, this correlation is depicted by a series of small-sized A-phases at a secondary level within a main phase (Figure 5-7).

Figure 5-7: Sequence of A-phases at the Secondary Level.

A 'hard' modelling approach often has a natural point where one can decide on its 'readiness' for use: a thorough verification (and validation) procedure will usually suffice. However, this may not be at all obvious when constructing judgement-based models. A judgement cannot easily be verified as 'correct'.

Phillips (e.g. [13]) introduced the useful concept of a *'requisite' model* which, assuming that it will serve as an aid to thinking and group learning, is *sufficient in form and content to resolve the issues at hand in the opinion of the group of people who construct the model*. Therefore, the model represents their collective view and shared understanding at that stage of the process.

The process of identifying a way ahead when a problematic situation has presented itself may be a matter of debate among a group of clients and other stakeholders. A requisite way ahead is one that is agreed by the group to be feasible and to sufficiently offer perspectives of improving or resolving that situation. The aim of the study may require a certain nature, precision or quality of data which may not be achievable with reasonable effort and costs. Again, an iterative process of reviewing and adjusting the initially chosen model type and method, and perhaps even the study's aim, can lead to a requisite approach based on debate and negotiation.

When building a model as a construct of concepts and relationships or as a criterion hierarchy for evaluation purposes or any other type of model based on judgement, the group will end the modelling process when it feels that 'requisiteness' has been achieved. That point has been reached when everybody feels comfortable with the model.

5.5 DIVERGENT AND CONVERGENT THINKING

The effect of opening up the problem space is referred to as divergence and describes the increase in complexity through adding new aspects to the problem.

'Divergence' is more often experienced in 'soft' OA rather than in 'hard' OA studies (Figure 5-8). The clear problem description typical of applications of 'hard' methods implies that a divergent stage is not needed.

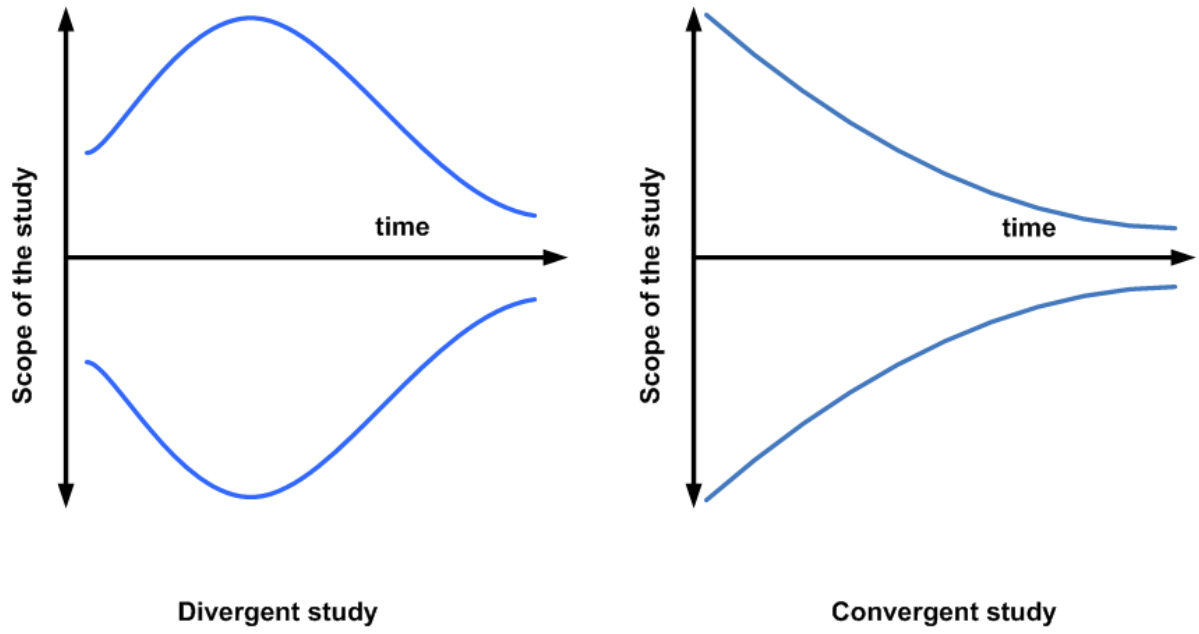


Figure 5-8: Comparison of Divergence and Convergence in ‘Soft’ and ‘Hard’ OA Studies.

‘Divergence’ opens up the problem space which quite often may be necessary and useful in order to let the ‘real’ problem emerge. Consequently, one of the major tasks of an experienced study team is to balance diverging and converging streams of thoughts throughout the ‘soft’ OA study process in order to reach a solution that addresses the right problem (or problematic situation) and that is understood and accepted by all stakeholders.

Divergence can appear in all phases of the process as a result of discussions (or brainstorming) between different people with different opinions (or agendas) and will increase complexity and turnaround time of the process. On the other hand, it may be necessary in order to identify the ‘real’ problem (or problematic situation) or to find the best possible solution or management approach to it.

Figure 5-9 depicts a cycle of divergent and convergent thinking. This figure illustrates that convergent lines of thinking may not always reach a satisficing end point at some stage of the process, for example End Point A, but rather Point B or Point C which may not be generally acceptable. In these cases iteration enables the rethinking of the current approach and provides an opportunity to get back ‘on track’ towards an end point that is more satisfactory.

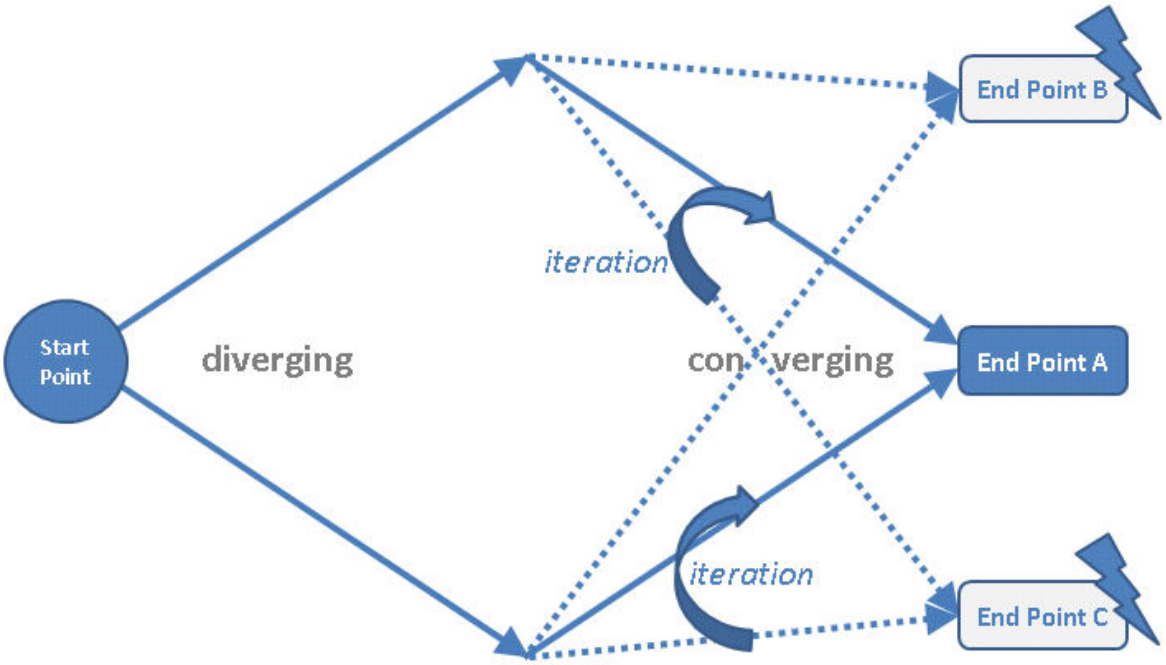


Figure 5-9: Iteration and Convergent Thinking.

Typical activities during stages of divergent and convergent thinking are given in Table 5-1.

Table 5-1: Divergent versus Convergent Thinking (taken from [15]).

Divergent Thinking		Convergent Thinking
Generating a list of ideas	vs.	Sorting ideas into categories
Free-flowing open discussion	vs.	Summarising key points
Seeking diverse points of view	vs.	Coming to agreement
Suspending judgement	vs.	Exercising judgement

An experienced facilitating analyst will encourage streams (or stages) of divergent and convergent thinking throughout the whole process in order to identify the most acceptable way ahead. The reader is referred to [15] fore more aspects of divergence and convergence in the context of working with groups.

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