

Strategic planning: systems thinking in practice



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Strategic planning: systems thinking in practice - Part 1

Introduction

Welcome to the first part of this free course *Strategic planning: systems thinking in practice*.

With media and political attention given to systemic failure, systems thinking is increasingly advocated as an alternative way of managing human interventions associated with socio-economic and environmental development. So what is systems thinking? Why might systems approaches provide better support for strategic planning? Moreover, how might such approaches support systemic success?

The two parts of the course complement each other by way of introducing elements of systems thinking *in practice*; with Part 1 focusing more on the 'thinking' and Part 2 veering more towards the 'practice'.

This course provides a detailed account for five key systems approaches.

These approaches are:

- system dynamics (SD)
- viable system model (VSM)
- strategic options development and analysis (SODA)
- soft systems methodology (SSM)
- critical systems heuristics (CSH)

Note: This short OpenLearn course is not teaching how to use the five systems approaches listed above. The course gives a general introduction to the approaches and what they may have to offer in support of systems thinking.

This OpenLearn course provides a sample of postgraduate study in [Technology](#).

Learning Outcomes

After completing this part of the course, you should be able to:

- understand systems thinking as conceptual boundary setting
- understand 'thinking strategically' in terms of situations of change, agency of change and tools for managing change
- distinguish between difficult and messy situations and explain their significance to strategic thinking

- describe a system in terms of entities (variables) and purposefulness
- describe four perspectives on systems thinking in terms of situations of use and users of systems approaches.

1 Strategy making: bells that still can ring

Ring the bells that still can ring

Forget your perfect offering

There is a crack in everything

That's how the light gets in

(Cohen, 1993)

I first read this verse written by Canadian songwriter and poet Leonard Cohen in a small book called *Inside Out* (Huston, 2007, p. 8), written by an experienced systems practitioner called Tracy Huston. The book has the subtitle *Stories and Methods for Generating Collective Will to Create the Future We Want*. It is about strategic thinking and planning for the future. Huston focuses on how to generate meaningful organisational change by drawing upon existing untapped *internal* human resources rather than continually seeking external answers.

Activity 1 Systems approaches

Now read sections 1.1, 1.2.8 and 1.2.9 of [Introducing systems approaches](#) by Martin Reynolds and Sue Holwell.

Make brief notes on the three generalised purposeful orientations of systems thinking (section 1.2.8 in the reading), and align each of the five approaches in terms of their original orientations.

Discussion

The three orientations and historic alignment of each systems approach can be described in terms of:

1. understanding inter-relationships: system dynamics and the viable systems model
2. engaging with multiple perspectives: strategic options development analysis and soft systems methodology
3. exploring and reconciling power relations (reflecting on boundaries): critical systems heuristics.

When I read Huston's book, the words in Cohen's verse captured for me something of the importance behind the five systems approaches as a collection of tools for thinking strategically about managing complex situations of change and uncertainty. I think bells ringing conveys the idea of tradition and I imagine each bell having its own distinct sound. Bells that still can ring are perhaps like a set of durable and well-used tools.

The five approaches collectively provide significant tools of the trade in systems thinking and systems practice. Each approach embodies at least 30 years of experiential use – 30

years of road-testing. They are the 'bells that still can ring', with a pedigree of time and experience. Over that period, challenges have exposed new offerings, insightful ways on how better to use these approaches in the light of invaluable experience.

The five systems approaches are presented not as new tools to replace old tools, but as composite tool sets that have been adapted to deal with different contexts and changing circumstances. The tools embedded in these approaches represent an invaluable resource for systems practice.

There are two dimensions of learning in this course:

1. The first, the Tools dimension, briefly introduces five systems approaches – the bells that ring. The five approaches are:
 - a. system dynamics (SD)
 - b. viable system model (VSM)
 - c. strategic options development and analysis (SODA)
 - d. soft systems methodology (SSM)
 - e. critical systems heuristics (CSH).
2. The second, called the People dimension, explores some of the more personal aspects behind users of the tools embedded in the systems approaches. These are people like you and me who humbly may have no delusions of making what Leonard Cohen called a 'perfect offering' but nevertheless are wanting to make better offerings than at present in an imperfect and often bewildering world.

How do these five approaches help with thinking strategically? And why these five approaches in particular? A good place to start in answering these questions would be in clarifying the meaning of the words 'strategy' and 'systems'. The two words may already be familiar to you. But in what way might they be used together? How might they complement each other?

Activity 2 Systems and strategy

Make some brief notes, and drawings if you wish, on what the words 'strategy' and 'systems' mean to you. Do this as a brief brainstorming exercise, noting down any word associations or images that come to mind in relation to each term.

Discussion

In doing this exercise, for strategy I made the following word associations: process, futures, scenarios, forecasting, scripts, and planning. For systems, I noted words like entities, things, ideas, constructs, hindrances, opportunities, plans, checklists.

A simple distinction that came to my mind is that whereas strategy suggests a *time* element – the future – systems typically suggests more physical or observable elements that occupy some kind of *space* that might be used, modified and adapted.

Figure 1 provides my own distinctions between the terms strategy and systems.

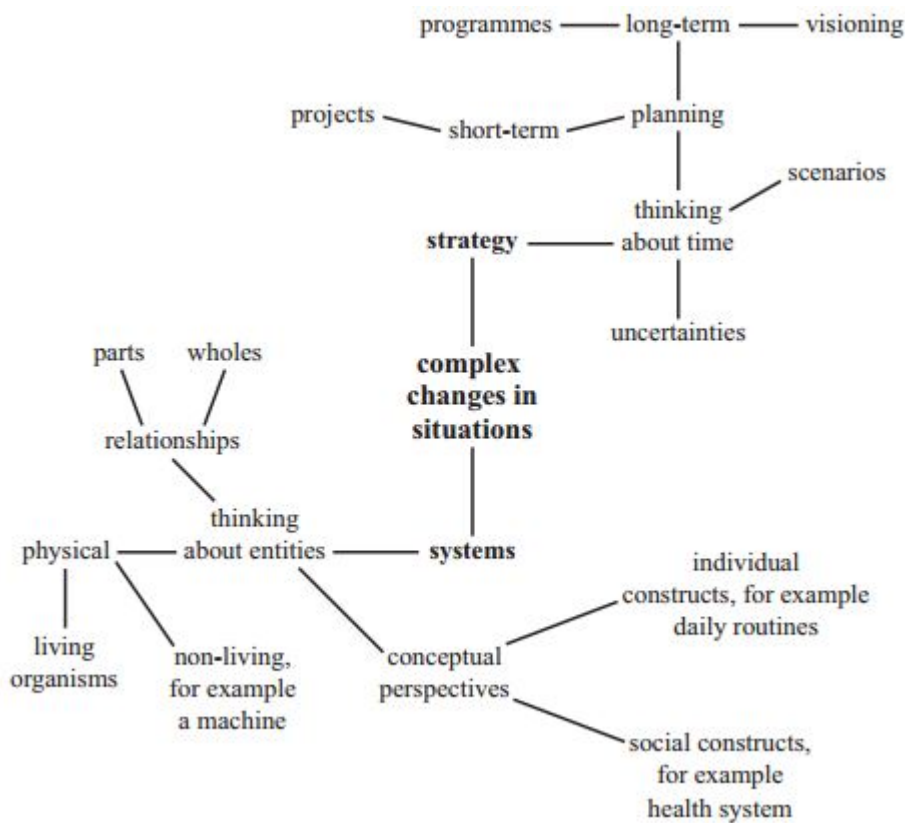


Figure 1 Spray diagram exploring some distinctions between strategy and systems

Spray diagrams are the same as what you may know of as mind maps. As with other systems diagrams, the spray diagram allows the relationships between parts of the situation to be seen at the same time as the parts themselves. In examining Figure 1 you may wish to add other ideas or make your own links between parts. For example you may consider that systems are also about processes or you may feel that strategy requires something about purpose. Feel free to add your own ideas to the diagram.

2 Tools, people and their situations

There are generally three factors involved with making an intervention (e.g. a strategic plan): firstly, the situations that need changing; secondly, people (stakeholders) involved with the change; and thirdly, tools or ideas for making the change.

Activity 3 Factors in managing situations of change

Think of some situation recently that was a problem for you in some way, where the solution wasn't immediately obvious, but you had to do something to try to sort it out. If you can't think of a suitable situation, imagine one. It could be something like dealing with intolerably noisy neighbours, or coping with a cash-flow crisis in your local youth club.

Step 1

Situation. Write a brief 'thumbnail' note outlining the situation. Write two or three sentences, not a full case history.

Step 2

People. Who did (or would) this involve? Keep it anonymous or use fictitious names. If you were writing a story about what happened, what characters would need to be on the cast list? Not just the central characters, but all those who would directly or indirectly play a significant part in the story.

Step 3

Notions you drew on. You may well find this the most difficult bit of this activity, because so many of the ideas that inform how you see things and what you do seem so obvious that you don't think about them. They may be habits and attitudes that are so deeply buried that you may not even recognise that you are responding to them. Nevertheless, have a go. You might find the following questions helpful:

- What *type* of situation is it? Are you aware of other situations that seem to be similar in some way? Could you give a generic label? Does it fall into one or more particular categories?
- What seems to you to be the *cause* or causes of this situation?
- What do you regard as the *rights* and *wrongs* of this situation?
- What is the *right way* to approach a situation like this?

Step 4

Changing viewpoint. Pick someone, other than you, from the list you generated at step 2. Now imagine you are that other person. Imagine they are describing the same situation. Both you and they might be responding to the fact that the people at No. 16 High Street play loud music at 4.00 am, which keeps the people at No. 14 – you – awake. However, they are responding from a different position within that situation – they might be one of the people from No. 16. Repeat steps 1–3 as if you were the other person. Notice how the description, cast list, and background notions change – probably quite radically.

Discussion

The activity illustrates, for me, several important features of thinking and acting in situations in order to improve them. Firstly, it brings out the importance of the *situation*

itself, to which the people using the tools must address. Secondly, there may be many *people* involved in a situation, each with notions or ideas built upon years of individual experience. This can sometimes provide a source of constructive inspiration but it also can sometimes be a source of conflict and frustration. Thirdly, the exercise illustrates how someone's judgement or *ideas* on what might be the right and wrong course of action is a product of their individual life experiences.

The three factors of situations, people and ideas are always present but they are also always subject to change and flux. Moreover a change in one factor is likely to influence the other two. Try out the next activity as another thought experiment.

Activity 4 Consultant using tools for managing change

A young relative has just set up her own small business and is hitting all sorts of practical problems with money and people. She writes to you listing examples of the sorts of issues she is having with the business. She asks you if you have any general, life-skill advice about dealing with problems – perhaps some sort of 1, 2, 3 checklist?

- a. What would your checklist have on it?
- b. How useful do you think a general checklist would be? Would it be really just a matter of spending years learning about each of the innumerable different kinds of things that can happen? What is the relative importance of sound general principles as compared with local, detailed, specific knowledge?

Apart from illustrating how difficult it can be to sometimes appreciate the perspective of other stakeholders involved in a messy situation, Activities 3 and 4 illustrate the interdependencies between the three factors. Any change in one factor is likely to effect changes in the other two.

In Activity 4 an important question is raised regarding how much the tools available might become a hindrance rather than a source of support. Some guidelines for action might be appropriate in one context but perhaps be less appropriate in another. For example, having a procedure of inclusive participation involving multiple viewpoints on decisions might be worthy with respect to, say, funding of alternative energy supplies, but less worthy with respect to piloting a plane in a crisis situation, or in persuading your child not to harm the neighbour's pet dog.

The aim of Activities 3 and 4 is to illustrate the relationship between a perceived problem situation and the means of making change. The identified problem situation is paramount because it leads on to deciding who might be responsible for, or otherwise involved in, the situation. That decision influences how the problem might be solved and what ideas or tools might be used to change the situation.

To summarise, the influence diagram in Figure 2 illustrates the relationships between the three factors of any human endeavour to make strategy:

- situation – comprising the arena of change and real-world complexities
- practitioners – people effecting change in the situation
- ideas – conceptual constructs developed by people for effecting change.

I use the word practitioner here as a more focused term for people involved with managing change. I call the interrelationship between these three factors *strategy making*.

2.1 Thinking strategically

The diagram below illustrates the dynamic feedback and interdependence between each of the factors. The three factors are evident in all instances of making strategy. One aspect of assessing strategy making is the relationship between the three factors, and the particular emphases given to the different domains. Starting with the situation, it is the relationship or dynamic between the actual situation, people involved, and tools used that determines whether strategy making may claim to be successful.

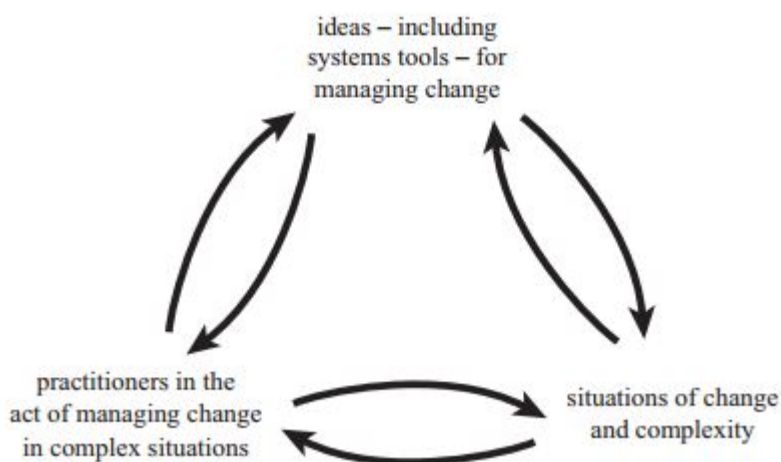


Figure 2 Influence diagram illustrating the three factors that affect the course of change

In thinking strategically it is always important to start with the situation. What is the nature of the context in which an individual or organisation needs strategic thinking? Is the situation perceived to be problematic to start with?

Activity 5 Situations requiring strategic thinking

Read and make brief notes on [Introducing systems approaches](#) by Martin Reynolds and Sue Holwell. Read up to (but not including) 1.2.3 'Traps in conventional thinking'. This reading explores the nature of situations – the way of the world – that are part of daily life. Make notes on the common features of the situations described.

The need to think strategically is often associated with what is perceived to be a complex situation. Two conditions make a situation complex. One condition is the multitude of interrelated variables – the 'stuff' that needs attention. Another condition is the range of purposes associated with different perspectives among those involved and affected by the situation.

Figure 3 summarises the main constituents of different types of perceived situations you read about in Activity 5.

		perspectives	
		single	many
variables	few	less complicated difficulty	less complex mess
	many	complicated difficulty	complex mess

Figure 3 Components of difficulties and messes

Given the relationships between many variables, coupled with many perspectives among stakeholders, there is little hope of safely predicting outcomes in complex situations. Thinking strategically of course requires some appreciation of what the future might look or feel like.

This directs attention to two other related conditions that affect strategy making. One is the condition of uncertainty. By this I mean the uncertain condition of the number and relationships between variables, and uncertainty regarding the possible conflict of different perspectives. Making strategy involves working with uncertainty.

The second condition relevant to strategy making is that of change. The interrelationships among variables and the quality and multitude of perspectives in any given situation as depicted in Figure 3 never stand still. Relationships between variables and the perspectives are in a constant state of flux.

So how might systems thinking help make sense of, and contribute towards improvement of, such situations?

Joining things up implies looking at elements of a problem as part of a whole – a system. Since ultimately everything is part of other bigger systems, systems thinking poses problems of delineation (at what level to tackle the issue) and of measurement (how best to measure performance of a system, the NHS [National Health Service], say). But if concentrating on parts of the problem initially seems easier, it always ends in tears, adversely affecting the system as a whole, raising costs and making it harder and harder for managers to see the link between causes and effects.(Caulkin, 2006)

Clear systems thinking is one of the basic literacies of the modern world, not least because it offers unexpected insights that are not amenable to common sense.
(Mulgan, 1997)

Geoff Mulgan was a government advisor in the UK government's Cabinet Office during the 1990s. His comments invite questions regarding what constitutes a systems literacy in making strategy. Box 1 provides one fairly succinct exposition of systems from one of my colleagues in systems teaching at The Open University.

Box 1 Systems for strategic thinking

Selected extracts from notes prepared by Dick Morris for the Anglia Schumacher conference (Open Systems Group, 2004).

...

This word system has become so much a part of our twenty-first century vocabulary, as in 'the transport system' (when it breaks down), 'the social security system' (ditto), a 'stereo system' etc., that we probably take its use for granted, and do not consider some of the implications of using it. Really to *think* in terms of systems is not necessarily so easy, but is an essential part of our outlook if we are to develop our world in a sustainable manner.

...

A classic example arose from the series of rail crashes in England in the first years of this century. Tragically, several people were killed, and the obvious 'cause' was problems with the rails. To avoid further loss of life, draconian speed limits were imposed on the trains and repairs to the tracks instigated. This no doubt reduced the chances of further rail accidents, but in the process, persuaded many people to abandon rail travel in favour of their cars. Given that the probability of an accident per kilometre travelled is a couple of orders of magnitude larger for car travel than rail travel, the decisions taken about the railways may actually have increased the number of travel-related deaths and injuries, rather than reduced them. A decision taken about the safety of the railway system may well have had completely the opposite effect to that intended when considered in relation to the wider *transport* system.

Similar examples could be drawn from any number of situations, highlighting the need to think beyond single cause–effect relations.

...

Perhaps the most difficult aspect of the definition [of a system] is the subjective one – the collection of entities [associated with a system] is *chosen by someone* as a system. Different individuals may see different systems in a particular situation. For example, the Open University may be seen by students as a system to help their learning, and the bits of the system they would recognise might be course parts, their tutor, computer conferencing system, etc. To the staff, it may be a system to provide a particular livelihood, with an office, library services, particular computing facilities and, importantly, a financial subsystem to provide the pay cheque! Each view is defensible, but neither is complete, and action based on one version only could well produce unexpected and undesirable effects in the wider Open University system. Negotiating and choosing an appropriate system for debate and decision-making can be crucial.

3 Situations, systems and strategy

A definition developed by Open University systems academics and referred to by Morris (Open Systems Group, 2004) suggests that a system is simply:

- a collection of entities ...
- that are seen by someone ...
- as interacting together ...
- to do something.

Activity 6 Situations and systems

Using the Open University definition of a system provided above, make notes on whether the following five items might be described as systems. First give a simple yes or no response. Second give an explanation of your reasoning.

- health centre
- poverty
- garbage bin
- washing dishes
- local council

Discussion

A system is a selection of variables based on a particular perspective. In describing a system there needs to be not only objects or variables of some kind, but a human-attached perspective with an associated purpose. So for example, a garbage bin in itself would not normally be regarded as a system. It might be considered as a microbial ecosystem but such a system arises from a perspective on the bin as something that fulfils a human-defined purpose of sustaining microbial life. More commonly the bin might be considered as part of a system associated with the purpose of refuse disposal. Similarly, poverty is best described as a situation – from most viewpoints it is a complex situation. But poverty might also be described in terms of a system for, say, ensuring ill-health, or for generating capital accumulation, or for enabling a simple life.

Box 2 introduces some basic terms associated with a systems literacy.

Box 2 Systems competencies 1: systems thinking

Systems thinking is characterised by holistic thinking, which means thinking in terms of wholes rather than parts and assessing a situation in a broad-minded way.

The adjective 'systemic' applies to holistic thinking. That is distinct from systematic thinking, which means taking the view that the whole can be understood by considering just the parts, and connections that only have a linear cause and effect.

Wholes or systems are not pre-given. They are selected by someone for a purpose.

Someone usually selects the whole with the purpose of making an intervention that they

think will improve matters. It is good practice to learn about the situation before making an intervention.

Deciding what the whole is in a given context involves making boundary judgements. Decisions are made about what parts are included or excluded. These boundary judgements distinguish the whole from its context or environment, and the whole is called the 'system of interest'.

All judgements must be made by someone. Judgements can be made without awareness. This happens all of the time when someone uses the word 'system' in everyday speech, for example 'education system' or 'transport system'. This everyday usage can lead to misunderstanding and conflict because different stakeholders will make different boundary judgements based on their different experiences. This is the same as saying that one person's education system will be different to another's.

Conflict and confusion often arises because of lack of clarity about the purpose of the system of interest.

(Source: adapted and further developed from a discussion paper among members of the Open University systems group (Open Systems Group, 2004))

Different traditions of systems thinking can be identified today, each with a particular way of handling complex issues. Their evolution was particularly marked since the mid-twentieth century, when systems approaches were employed in association with the discipline of operational research (or operations research as it is known in North America) for clearly defined strategic military purposes during the Second World War. Since then, systems approaches have developed to address many other different contexts ranging from multiple variables associated with industrial processes to global climate change, and multiple perspectives associated with family therapy to international relations.

The different traditions of systems thinking can be grouped together in different ways. Systems approaches can be grouped according to the emphasis given to the context or *situation* in which the approach was used, the *practitioners* or users of the approach, and the *ideas* or usefulness of the approach itself.

3.1 Systems thinking

The chapter by Reynolds and Holwell describes four different attempts to group traditions of systems thinking according to the relative emphasis given to the situation, the users, and the ideas underpinning the approach.

Activity 7 Four perspectives on systems thinking

Read the section 'Perspectives on systems thinking' in [Introducing systems approaches](#) (section 1.2.6). Draw up a table contrasting each of the four perspectives on systems thinking. For each perspective note the relative emphasis given to the:

- situation of use
- practitioner or user of particular systems approaches.

Discussion

The act of classifying ideas is itself dependent on the perspective of the person or people doing the classifying. Each of the four perspectives on the range of systems ideas provides an emphasis on either the situation in which the ideas were generated or on the individual practitioners or community of practitioners generating the ideas. Sometimes a classification of ideas may rely on more or less equal emphasis on both the situation and the practitioner. A similar distinction between situation and practitioner emphasis is found in classifying approaches towards strategy making, as you will discover when I introduce the ideas of Henry Mintzberg.

If systems thinking is about making complex situations manageable, how might you describe strategy making?

Making strategy, like systems thinking, involves dealing with situations often comprising many variables and with often contrasting perspectives held by different practitioners. In the late 1990s Henry Mintzberg, a well-known writer on management theory and strategic thinking, with his colleagues Bruce Ahlstrand and Joseph Lampel, attempted to make sense of the plethora of strategy-making approaches (Mintzberg et al., 1998). Firstly, using ideas from Chaffee, they identified seven common areas of agreement on strategy (Mintzberg et al., 1998, p. 16). These are listed below, where I have added in brackets an indication of whether the area emphasises attention to variables, which are associated with situations, or perspectives, which are associated with practitioners:

1. strategy concerns both organisation and environment (perspectives)
2. the substance of strategy is complex (variables)
3. strategy affects overall welfare of the organisation (perspectives)
4. strategy involves issues of both content and process (variables)
5. strategies are not purely deliberate (perspectives)
6. strategies exist on different levels (variables)
7. strategy involves thought processes (perspectives).

The seven can therefore be divided between two groups. The first group, formed by the three areas 2, 4 and 6, relates more to engaging with multiple *variables*. The second group, formed by the four areas 1, 3, 5 and 7, relates to areas engaging with *perspectives*. Next, Mintzberg and his colleagues classified all the approaches to strategy making they could find according to two sets of criteria:

1. how each viewed the external world, ranging from being comprehensible and controllable to being unpredictable and confusing, with a focus on *situations*
2. what internal process was proposed, ranging from the deliberate rational process to the less-deliberate natural process, with a focus on *practitioners* and their ideas.

Box 3 Schools of strategic management

The authors of *Strategy Safari: A Guided Tour Through The Wilds Of Strategic Management* (Mintzberg et al., 1998) identify ten schools of strategy making.

The first five are prescriptive schools with a *practitioner* focus on the process of strategy making:

1. the design school, which sees strategic management as a process of attaining a fit between the internal capabilities and external possibilities of an organisation
2. the planning school, which extols the virtues of formal strategic planning involving analyses and checklists
3. the positioning school, which stresses the strategic need for positioning an organisation in the market and within its industry
4. the entrepreneurial school, which emphasises the central role played by the leader
5. the cognitive school, which looks inwards into the minds of strategists.

The last five schools are descriptive with a focus more on the *situation* in which strategies emerge:

6. the learning school, which sees strategy as an emergent process – strategies emerge as people come to learn about a situation as well as their organisation's capability of dealing with it
7. the power school, which views strategy emerging out of power games within the organisation and outside it
8. the cultural school, which views strategy formation as a process rooted in the social force of culture
9. the environmental school, which believes that a firm's strategy depends on events in the environment and the company's reaction to them
10. the configuration school, which views strategy as a process of transforming the organisation – it describes the relative stability of strategy, interrupted by occasional and dramatic leaps to new ones.

(Source: adapted from Chakravarty, 2005)

A clue to the value of systems thinking is given by Mintzberg himself

We are all like the blind men and the strategy process is our elephant. Everyone has seized some part or other of the animal and ignored the rest. Consultants have generally gone for the tusks, while academics have preferred to take photo safaris, reducing the animal to a static two dimensions. As a consequence, managers have been encouraged to embrace one narrow perspective or another, like the glories of planning or the wonders of core competences. Unfortunately, the process will only work for them when they deal with the entire beast, as a living organism.

(Mintzberg, 2000, pp. 11–16)

Perspectives on making strategy clearly need a wider picture. It is not that particular perspectives are necessarily wrong but only that they are necessarily limited.

The relative focus of attention on situations and practitioners expressed by different schools of strategy-making approaches can be translated in relation to asking questions of 'what' and 'how' respectively. *What* is the purpose of the given strategic issue in any given situation, and *how* might it be achieved by practitioners? The framing of these questions is undoubtedly important, particularly with respect to situations where there are a multitude of variables and purposes for dealing with them.

But questions on strategy in the twenty-first century are also more concerned with questions of 'why'. Why are there so many unintended consequences of human action? Why did the global financial crises of 2008–09 happen? Why the crises of confidence in societal and organisational governance? Why can societies, organisations and people not be more ecologically benign? In short, why can people not think systemically about alleviating the multitude of economic, social and ecological issues?

Monocausal explanations are sometimes favoured by managers and politicians either in order to mobilise action or as a way of demonstrating that a presumed single cause is being addressed. Making strategy requires looking at multiple causes through multiple lenses. It is this particular territory of complexity when navigating through multiple causation in messy contexts where strategic thinking of whatever school might be served through systems practice.

4 Summary

Thinking strategically requires prime attention to the present context and the foreseeable future. I have emphasised the importance of relationship between:

- situations of interest (in areas of practice) as raw material for using tools
- practitioner or tool user attempting to improve the situation
- actual tools used.

In this course the term 'tools' is used in a generic sense to incorporate the systems thinking and systems practice ideas embodied in the systems approaches. Systems thinking provide conceptual tools for dealing with three features of complex situations of change encountered when thinking strategically:

1. making sense of countless interrelated and often interdependent variables
2. engaging with multiple contrasting and often conflicting perspectives
3. dealing effectively and constructively with boundary tensions arising from inevitable uncertainty about interrelationships and interdependencies and conflicts between contrasting perspectives.

The five approaches were chosen because of their respective pedigrees in supporting strategic decision making in different and changing contexts. Each approach embodies all three imperatives of systems thinking summarised above. But each approach also has an historic slant towards one imperative. System dynamics and the viable system model have been particularly significant in dealing with interrelationships among variables. Strategic options development and analysis, and soft systems methodology have been particularly significant approaches in dealing with multiple perspectives. Critical systems heuristics has been particularly significant in dealing with boundary tensions.

The important point to take forward when practising the five systems approaches is to continually reflect on how the approaches and their respective tools can enrich your existing capacities for thinking strategically in dealing with present messy situations in order to improve them for the future.

Strategic planning: systems thinking in practice - Part 2

Introduction

Welcome to the second part of the course *Strategic planning: systems thinking in practice*. As in the first part of the course, this part looks at five systems approaches. These approaches are:

- system dynamics (SD)
- viable system model (VSM)
- strategic options development and analysis (SODA)
- soft systems methodology (SSM)
- critical systems heuristics (CSH)

Part 1 focused on systems *thinking* in relation to situations of interest, people (agents, actors, stakeholders, practitioners), and systems as conceptual tools for enacting strategy. Part 2 focuses more on the *practice* side of systems thinking in practice, whilst always keeping in mind the continual interplay between thinking and practice.

Note: This short Openlearn course is not teaching how to use the five systems approaches listed above. The course gives a general introduction to the approaches and what they may have to offer in support of systems thinking *in practice*.

Learning Outcomes

After completing this part of the course, you should be able to:

- describe three practical dimensions of using systems tools and ideas
- describe examples of conventional entrapments associated with reductionism and dogmatism
- describe examples of potential entrapments associated with systems thinking claims towards holism and pluralism
- understand relevance of systems and strategy for managing uncertainty in changing situations
- appreciate the range of systems approaches for managing uncertainty in changing situations.

1 Thinking strategically in practice

There are several ways of classifying different systems approaches. Some like to classify them according to the particular situation which they are deemed to be appropriate. So, for example, according to some, soft systems approaches are seen as relevant to situations of multiple perspectives whereas, say, critical systems heuristics is deemed more relevant to situations of conflict. Others have classified approaches according to particular communities of practice to which practitioners of the systems approaches align themselves (e.g. cybernetics, learning systems, complexity theory etc.). In this part of the course, we appreciate more the actual and potentially adaptive use of systems tools from different approaches depending on the users' experience as part of the context of use.

Activity 1 The practice of systems thinking

Read section 1.2.7 ('Our own perspective') from [Systems Approaches](#), along with a quick recap on sections 1.2.8 and 1.2.9 (from the first part of this course, which briefly describe the five systems approaches). Make notes on the three practical dimensions of using systems thinking and their alignment with three core ideas of systems thinking in practice:

1. understanding inter-relationships
2. engaging with multiple perspectives
3. reflecting on boundary judgements.

With respect to Figure 1.4 in the reading, describe a key feature of importance in using *any* systems approach with respect to addressing the three dimensions? How might this differ with the conventional idea that some systems approaches are suited to only some situations?

Discussion

The dimensions outlined by Checkland include methodology, situation, and users. These can be re-ordered in terms of

1. understanding inter-relationships ('situation')
2. engaging with multiple perspectives ('users')
3. reflecting on boundary judgements ('methodology').

Figure 1.4 illustrates the importance of addressing all three dimensions in any practical application of systems thinking tools. This challenges the conventional idea of 'contingency' – that particular approaches are suited only for particular situations.

Systems practice challenges the practitioner to be inventive with the use of any set of tools associated with any particular approach in order to ensure that inter-relationships are understood, multiple perspectives are engaged, and that the limitations of being holistic (inclusive of all inter-relationships) and being pluralistic (engaging with all perspectives impartially) are properly taken in to account. The emphasis is not on the tools (systems tools or other tools) being 'used', but rather the 'user' of the tools.

Activity 2 The systems practitioner

Read the [Systems Approaches](#) up until (and not including) 7.2.4 'Recognising the Possibility of Entrapment'. Make notes on different practitioner communities and their role and significance in developing systems practice. To what extent might these communities relate to your understanding of disciplinarity, interdisciplinarity, and transdisciplinarity?

Discussion

The notes that you write can vary in relation to what you find particularly insightful. Generally, the idea is promoted that systems approaches ought not to be regarded as fetishised or reified (concrete) tools (e.g. like a 'hammer' or 'computer') but rather as conceptual constructs open to continual adaptation and development according to the practitioner. A key way of ensuring such development is through conversations or interactions with other practitioners. These may be practitioners belonging to one particular discipline (e.g. defined as either a specialist discipline of, say, the viable systems model (VSM) users, or wider discipline of Systems thinking). They may alternatively be practitioners from different disciplines or traditions of practice (e.g. other systems traditions or other academic disciplines altogether like economics, engineering or performing arts). These two ideas fit in with ideas of disciplinarity and interdisciplinarity respectively. The notion of 'transdisciplinarity' is not really dealt with in the chapter. My notion of transdisciplinarity is an interaction with wider society. This can be interpreted in terms of 'other communities of practice' as described in the third level of interaction, but it might also involve more general public or civic society – individuals in a capacity not recognised as a 'community of practice'.

Any process of thinking strategically, whether formalised through schools of approaches or otherwise manifest through personal experience and practice, comprises valuable skills and competences. Such value should not be ignored or denied. Rather, systems thinking in practice must be seen as a complementary skill to existing skill sets, including your own. Moreover, it is a skill increasingly acknowledged among professional strategists themselves (see Box 1).

Box 1 Systems and strategic skills

Extracts from a guide on strategy skills presented by the UK government's Strategy Unit.

A key component of thinking strategically is recognising that issues do not exist in isolation. Holding a mechanistic view of policies as levers that have a focused and direct impact on a situation, without considering the wider implications of an intervention, can be short sighted and potentially disastrous. Strategic thinking requires the interrelated nature of circumstances to be recognised up front rather than relying on a post hoc screening to identify unintended consequences and impacts.

...

Systems thinking is both a mindset and particular set of tools for identifying and mapping the interrelated nature and complexity of real world situations. It encourages explicit recognition of causes and effects, drivers and impacts, and in so doing helps anticipate the effect a policy intervention is likely to have on variables or issues of interest. Furthermore, the processes of

applying systems thinking to a situation is a way of bringing to light the different assumptions held by stakeholders or team members about the way the world works.

...

Systems thinking is particularly powerful for understanding dynamic complexity, which stems from the relationships between factors in a system. A dynamically complex system cannot simply be broken down into pieces in the same way as a structurally complex system, which derives its complexity simply from the sheer number of factors involved. Where structural complexity can be modelled and managed using databases and spreadsheets, dynamic complexity needs a more organic approach to understand the complex web of influences that often results in various forms of feedback loops. Such loops add a time dimension to system complexity and often magnify or dampen the intended effect of an action in a non-obvious manner.

(Source: Cabinet Office, 2004)

Jeanne Liedtka, a leading academic in the field of strategic thinking, identifies a number of attributes or competencies of strategic thinking in practice. First and foremost in her view is the attribute of having a systems perspective that she describes as follows:

A strategic thinker has a mental model of the complete end-to-end system of value creation, his or her own role in it, and an understanding of the competencies it contains.

(Liedtka, 1998, p. 32)

Taking a systems perspective is a distinctive competence in itself, which is a competence that I refer to as systems practice.

Liedtka's description of a systems perspective for strategic thinking suggests three features of systems practice:

1. a core exercise in *modelling* involving a process of value creation
2. *reflection* on practitioner's role in the situation
3. appreciation of *relevant competencies*.

I'll expand on each of these in relation to strategy making.

1.1 Modelling and value creation

The idea of a mental model enables a clear distinction between situations and systems. A key point in systems practice is not to confuse systems with situations. Do not confuse the map for the territory, to use an important adage from Alfred Korzybski (Korzybski, 1933). Systems practice involves thinking in terms of purposeful abstraction. Conceptual constructs are abstracted from real-world, complex situations to improve the situation. An example of this can be provided in illustrating a model of strategy making.

The two models in Figure 1 illustrate the three constituent parts of making strategy (situations, practitioners and ideas). They are depicted in Figure 1 both as a simple mental model and as a conceptual model in the formal sense of the term used by what is called

soft systems methodology. In both cases they are systems models because they depict activity serving some explicit purpose.

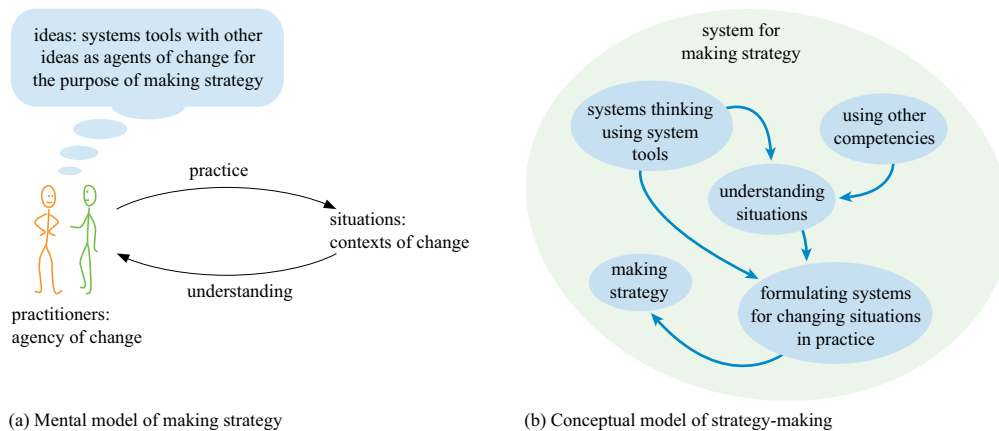


Figure 1 Models of making strategy: (a) mental model (b) conceptual model

The two models are drawn from my perspective. Neither provide complete pictures of reality but in their different ways they enable me to convey important components of strategy making. The models themselves can then be used as a baseline for debate on how to make strategy. Each of the five systems approaches referred to in this course use models of one kind or another. They are not physical tools like a hammer or a can opener, but conceptual tools. Figure 1 (a) illustrates this at two levels. At a first-order level, you can see the tools illustrated as part of individual thought bubbles. The tools making up systems approaches are themselves models used for understanding and practising in the real world. At a second-order level, the whole diagrammatic representation of Figure 1 (a) itself represents, as the caption says, a model.

This way of considering a situation will stop you feeling trapped and frees us from a sense of impotence. You will be less inclined to say 'the system is against me' and 'how can I beat the system'. Instead, I hope you will see systems as opportunities for designing better strategy.

1.2 Reflective practice

Thinking strategically is theory informed by action. Thinking and practice are of course integral. But it is this integral relationship between thinking and practice that demarcates systems practice as a distinct competence. Figure 2 illustrates the relationship in terms of a learning cycle using a simple causal-loop diagram.

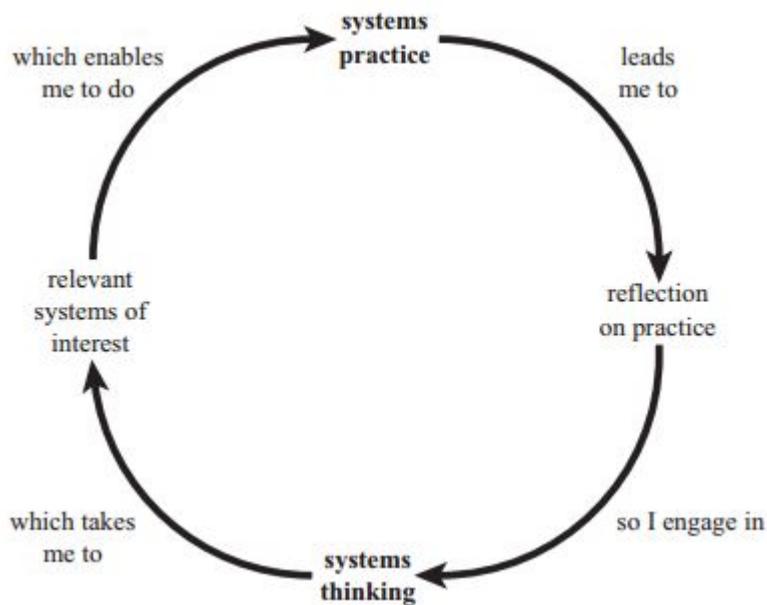


Figure 2 Causal-loop diagram illustrating the learning process associated with reflective practice

1.3 Competencies

Box 2 continues from the listing of competencies in Box 1.

Box 2 Systems competencies 2: systems practice

- Systems practice is reflective practice.
- Part of the skill of an aware systems practitioner is their ability to use systems thinking as part of a process of learning (by them or with others), in which the outcome is some improvement to a situation of concern.
- The particular form of learning at the core of systems practice is concerned with enabling effective action among stakeholders in complex situations. This involves collaborative action or social learning.
- Systems practice recognises the significance of making boundary judgements and continually exploring purpose.
- In addition to problem solving, systems practice can help identify what other problems might be relevant to a situation.
- Systems practice is a transdisciplinary skill used to complement and support an existing skill set from a single discipline.
- Part of the transdisciplinary skill is in using a systems literacy that helps facilitate interdisciplinarity.
- Systems practice draws on, but is different from, systems science or complexity science in that it attends to judgements on boundaries and values as much as judgement on facts.

(Source: adapted and further developed from Open Systems Group, 2004)

Activity 3 Systems thinking in practice in other skill sets

From the list of competencies in Box 2 make a note of any competencies that you feel represent an existing strength in your own practice and one that is less strong.

A further competence might be described in terms of a willingness to be disturbed. Thinking differently can be experienced as discomforting in that it often requires disturbing conventional ways of thinking and doing. This is related to recognising traps and thinking of strategies for avoiding them and/or escaping from them.

The next section describes three common traps and gives a rationale for the selection of the five systems approaches chosen as a means of avoiding or springing the traps.

2 Practical traps in systems thinking

The five systems approaches were chosen on the basis of their respective emphasis on purpose and usefulness.

What you read for Activity 1 refers to three general purposes that can be summarised:

1. understanding interrelationships and interdependencies
2. practice in engaging with different perspectives
3. responsibly questioning judgements on interrelationships and perspectives.

Activity 4 Traps in systems thinking

Read 7.2.4 from [Systems Approaches](#), 'Recognising the possibility of entrapment'. How might the traps of reductionism, dogmatism, holism and pluralism be associated with the three purposes of systems thinking in practice?

Discussion

The traps can be aligned with the three purposes of systems thinking in practice as follows:

1. understanding interrelationships and interdependencies: associated with trap of reductionism
2. practice in engaging with different perspectives: associated with trap of dogmatism
3. responsibly questioning judgements on interrelationships and perspectives: associated with traps of holism and pluralism.

The following section explains these alignments more fully. Items 1-3 above can be understood in terms of three purposes associated with purposeful systems thinking in practice –

1. understanding inter-relationships
2. engaging with multiple perspectives
3. reflecting on boundary judgements.

Purposes 1 and 2 are associated with avoiding traps in conventional thinking. Purpose 3 is associated with avoiding a corollary trap in systems thinking. Each trap can be illustrated in terms of a causal-loop diagram. The three traps are represented below in conjunction with particular systems approaches used for avoiding and/or escaping from, or springing, the trap.

2.1 Trap 1 Dealing with reductionism

This is a concern about having a limited understanding of the situation because of silo thinking or narrow-mindedness.

The two approaches that address this in particular are system dynamics and the viable system model. Figure 3 illustrates the trap of reductionism

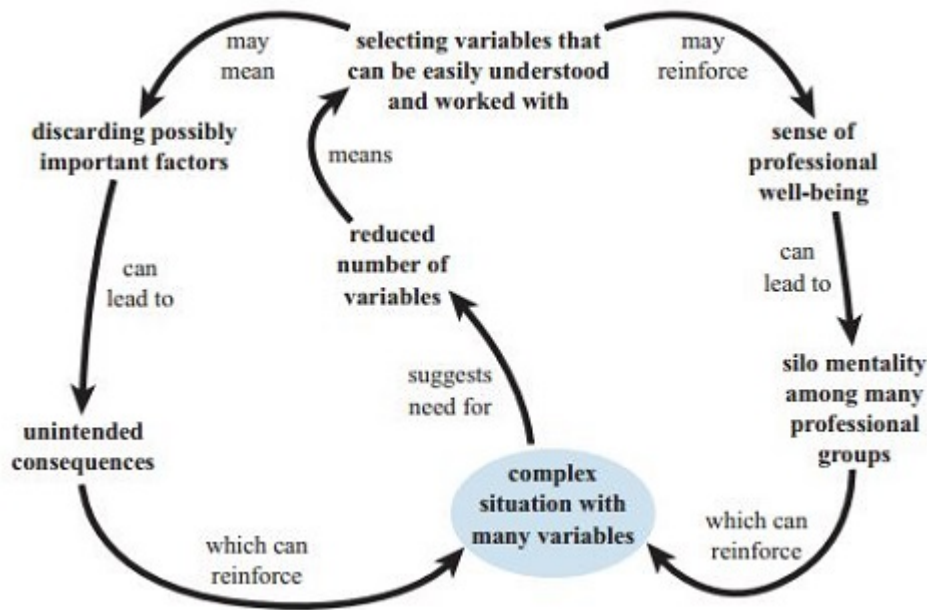


Figure 3 Causal-loop diagram of the trap of reductionism in conventional thinking

2.2 Trap 2 Dealing with dogmatism

This is a concern about restrictive practice through ignoring other perspectives of the situation.

The two approaches that address this issue in particular are strategic options development and analysis and soft systems methodology. Figure 4 illustrates the trap of dogmatism

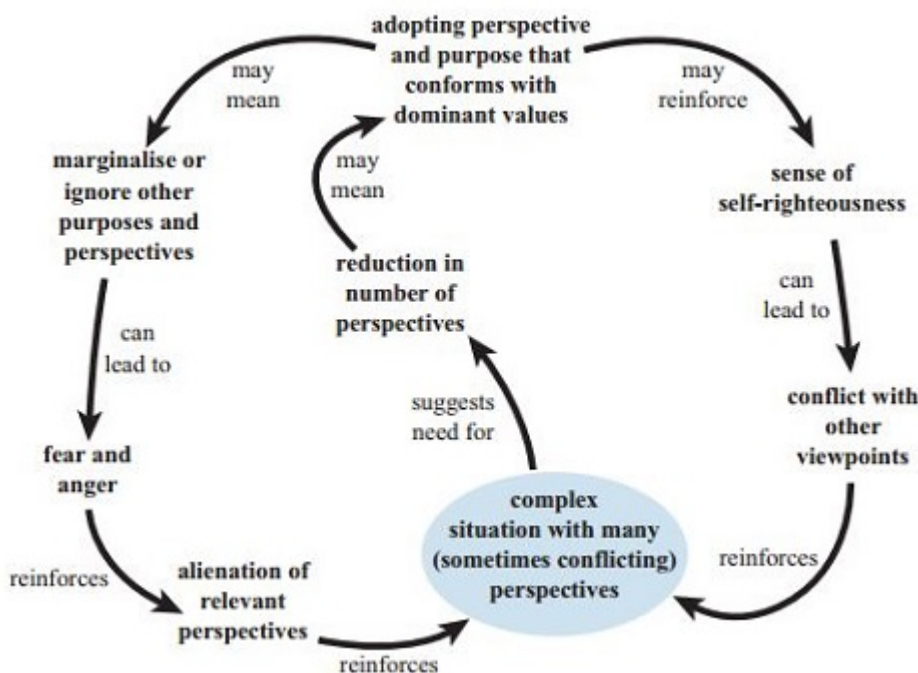


Figure 4 Causal-loop diagram of the trap of dogmatism in conventional thinking

2.3 Trap 3 Dealing with holism and pluralism

This is a concern about avoiding responsibility for boundary judgements made in systems thinking.

The tool that addresses this issue in particular is critical systems heuristics. Figure 5 illustrates the trap of holism and pluralism.

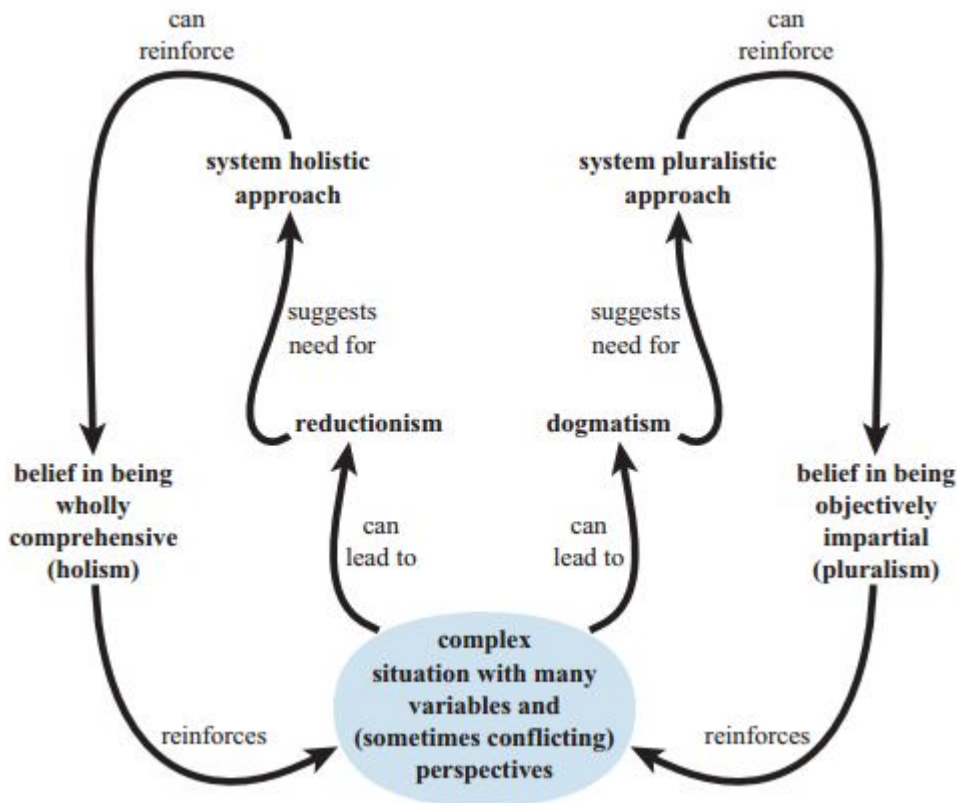


Figure 5 Causal-loop diagram of the trap of holism and pluralism in systems thinking

Each of the five approaches attends to all three traps and associated purposes. However, while each of the five deals with all three purposes, historically each was born out of a particular emphasis on one over the other two purposes. This does not suppose that any one approach only fulfils one purpose to the exclusion of the other two. The maturing of each approach over 25 years has meant that they have evolved to serve all three purposes.

Your exploration of the usefulness of each systems approach in the Tools stream will be undertaken in an area of practice that is both appealing to you and rich enough in terms of comprising many variables and contrasting perspectives.

3 Your area of practice

Thinking strategically always begins with the situation – context matters. To appreciate the value of each approach it is helpful to have situations embedded in:

- a common area of practice for applying any or all five approaches
- an area of practice that is of particular interest to you.

In applying systems thinking in practice, you may like to choose an area of practice that prompts situations of interest to you.

Five important criteria can help you to choose an appropriate area of practice:

1. interest – the area must invite your own personal interest, which may usefully be an existing or aspiring professional area of practice, but which may alternatively be an area of more general interest
2. practice – the area must have an associated central element of practical change, signalled by an adverb or doing word such as control, regulation, management, or reduction
3. scope – don't define an area of practice too narrowly (perhaps use 'immigration control' rather than 'checking passports'), and try to include different hierarchical levels (practice may have local, national or international ramifications, or practice may include elements of policy planning, management planning and operational planning)
4. perspectives – the area of practice should invite different viewpoints
5. uncertainty – there should be significant possibilities of unforeseen change.

Some possible areas of practice are listed below, chosen because I think they match the criteria, but feel free to consider others that may be of more interest to you.

- local community service support
- financial regulation
- drugs control
- education assessments
- health support for the elderly
- reduction in child mortality
- poverty reduction
- ecological sustainable development.

Activity 5 Developing ideas for an area of practice

Nominate an area of practice, indicating why it is of interest, and then choose one situation of interest associated with the area of practice, and suggest two systems of interest that might be developed in order to strategically improve the situation.

Table 1 provides an example of the distinction made between 'area of practice', 'situation of interest' and a 'system of interest'.

Table 1 Areas, situations and systems

Term	Example	Definition
Area of practice	hospital management	generalised role or area of responsibility, identifying generic types of concerns
Situation of interest	current concerns about funding at Mouseville hospital	more specific area of concern, situation or event that is perceived by someone as calling for some kind of intervention
System of interest	system to manage resources at Mouseville hospital	particular arrangement of activities associated with a situation designed to achieve a particular purpose

The relationship between three factors associated with strategic intervention context, people, and tools – can be represented by a systems map that identifies boundaries between the three factors.

The diagram below illustrates the map in relation to the way in which The Open University course TU811 'Thinking Strategically: systems tools for managing change' was conceived. The course aimed towards taking participants on a Tools stream of learning based on gaining practical experience in using and adapting tools from the five systems approaches. A parallel People stream of learning was created enabling critical reflection in the use of the 'tools'.

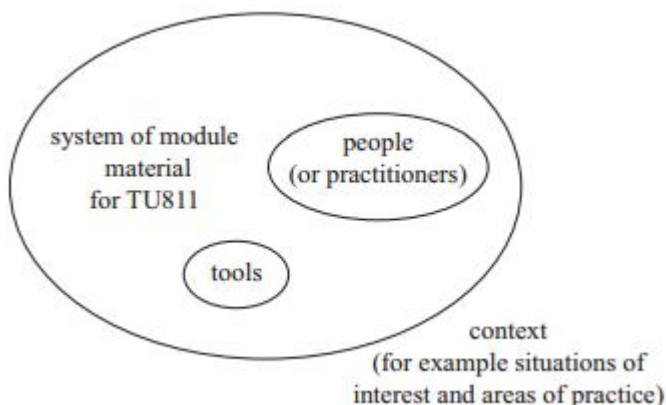


Figure 6 Systems map of Tools and People streams

Three important boundaries are located in the systems map:

- The major boundary is between the system of interest and everything else – everything else being the context. It is partly a marker to indicate the issue currently of interest. It is also a reminder that beyond it is a world of all manner of unpredictable influences, and the world is also likely to be affected by whatever the system of interest does. This outer area is often called the system's environment. Among many other factors the environment for this module consists of the area of practice that you choose to work with.
- Another boundary marks out the practitioners. I've placed it inside the system of interest. Of course any real human practitioner is part of a great many systems of interest, so I could have put the practitioner blob half in and half out of the system of interest, to indicate this other life out in the environment.

- The third boundary marks out the tools the practitioners use. Again, I could have put it half in and half out, because there are all manner of conceptual tools available, in addition to those associated with the five systems approaches.

The distinction between the two latter subsystems is reflected in the separation between the Tools and People streams.

Activity 6 Context Matters

Read the beginning of section 1.2 and continuing into 1.2.1 in '[Introducing Systems Approaches](#)'. Then read the final section of 7.3 '[Context Always Matters](#)'. The first reading provides a description of three media stories of 2009 – the Hillsborough football stadium tragedy in the UK, sea piracy in Somalia, and protection of Orangutans in Indonesia; all three of which encapsulate 'messy' situations. The second reading provides a brief sketch of possible uses of tools from each of the five systems approaches in dealing with each of the three situations. The reading describes the three stories in terms of:

- key inter-related variables
- different perspectives
- boundary conflicts.

In reflecting on your own area of practice (e.g. your own professional practice or an area of practice that you may have an interest, such as health, business management, education, sustainable development, family welfare etc.) make some brief notes on:

- some key interrelationships between variables
- some contrasting perspectives
- some possible tensions among practitioners regarding levels of uncertainty or conflict in perspectives.

From your brief introduction to systems thinking in practice in this course, describe how systems approaches might offer support towards designing systemic strategies to improve the situations that you have noted.

Discussion

In this introductory course you will not be expected to have gained know-how in the application of any of the five systems approaches introduced. But generically, you hopefully will have gained some appreciation of the potential in your chosen area of practice for systems tools to provide:

- a more holistic picture of the variables and their inter-relationships
- a means of depicting perspectives as systems of interest using different modelling techniques (SD, VSM, SSM, cognitive mapping, CSH reference systems...)
- a means of resolving issues of conflict by making boundaries of what's in and what's out explicit – countering claims of holism, and making boundaries of perspectives (viewpoints) explicit – countering claims of pluralism.

The context of using systems thinking in practice involves not just the variables (complicatedness), perspectives (complexity), and boundaries (conflicts) in the area of practice, but also your own experiences and enthusiasms drawn from whatever

background or tradition of practice that you may come from. Systems tools – whether from the five systems approaches or other approaches – are not necessarily introduced as yet another alternative set of tools, but rather a complementary set of ideas that may help enhance your existing practice.

4 Summary

Ring the bells that still can ring
Forget your perfect offering
There is a crack in everything
That's how the light gets in

(Cohen, 1993)

The Leonard Cohen verse was used at the beginning of the first part of this course. I thought of the bells that still can ring as tools collectively constituting the five systems approaches. To some extent they are disembodied and externalised. You can learn the techniques of 'bell ringing' through practicing with the use of systems tools in your own area of practice, and in so doing make use of them as a practitioner.

But behind the techniques in any situation there are the bell ringers. Not only do they have the experiences that they bring to bear on the skill of bell-ringing (tool use), but also the uniquely human qualities that determine how and why they do it as they do, and that allow them to enjoy and appreciate it. Such practitioners are the users of the tools – including myself, you and others studying this course. Practitioners are what the People stream is about, as it takes a look at how people think, how their thinking differs, and how they wield the tools.

Thinking strategically in practice requires prime attention to the present context and the foreseeable future. I have emphasised the importance of relationship between:

- situations of interest (in areas of practice) as raw material for using tools
- practitioner or tool user attempting to improve the situation
- actual tools used.

The term 'tools' is used in a generic sense to incorporate the systems thinking and systems practice ideas embodied in the systems approaches introduced in this course. Other ideas from outside the systems approaches can provide an additional source for reflecting upon the use of systems tools. Systems thinking and systems practice provide conceptual tools for dealing with three features of complex situations of change encountered when thinking strategically:

1. making sense of countless interrelated and often interdependent variables
2. engaging with multiple contrasting and often conflicting perspectives
3. dealing effectively and constructively with boundary tensions arising from inevitable uncertainty about interrelationships and interdependencies and conflicts between contrasting perspectives.

The five approaches were chosen because of their respective pedigrees in supporting strategic decision making in different and changing contexts. Each approach embodies all three imperatives of systems thinking and systems practice summarised above. But each approach also has an historic slant towards one imperative. System dynamics and the viable system model are particularly significant in dealing with interrelationships among variables. Strategic options development and analysis, and soft systems methodology are particularly significant approaches in dealing with multiple perspectives. Critical systems heuristics is particularly significant in dealing with boundary tensions.

The important point to take forward if practising any of the five systems approaches is to continually reflect on how the approaches and their respective tools can enrich your existing capacities for thinking strategically in dealing with present messy situations in order to improve them for the future.

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Part 2

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Part 1

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Box 1, Box 2: Open Systems Group (2004) Systems practice: a distinctive competence with the Open University. Unpublished discussion paper containing notes by Morris, D. about the Anglia Schumacher Conference in 2003.

Box 3: extract adapted from: Chakravarty, M. (2005) *The 10 schools of strategic planning* [Online]. Available at <http://www.rediff.com/getahead/2005/sep/01strategy.htm>

Part 2

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Box 1: extract from: Box 4: Cabinet Office (2004) Systems Thinking in Practice, [online], Prime Minister's Strategy Unit,
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