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A review of strategic planning practices that may be applied by the South African National Planning Commission

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Introduction

This review document is a contribution to an intensive planning exercise – the Long-Term Development Path (LTDP) project – currently under way in the Development Planning Division of the DBSA. The LTDP project involves developing a strategic plan within a long-term perspective that proposes a trajectory for South Africa's national development between the present and 2025.

Moves by the recently re-elected (2009) majority party, the African National Congress, to cast government firmly in the role of a developmental state and the installation of a National Planning Commission in June 2009 clearly indicate the increased importance of strategic planning for government. International events, in particular the international food/commodity crisis of 2007/8 and the global financial crisis of 2008/9, have exposed developing nations to challenges that the developmental state approach may best counteract.

This document aims to provide a generic overview of strategic planning that may be applicable to a government-driven planning process. The intention is to present a high-level overview of planning techniques and tools that may be applicable to, and may have the potential to add value to, a public-sector strategic planning process that must have short, medium and long-term time horizons. Drawing from the international literature, this review will give attention to the theory of strategic planning and to planning processes, techniques, methods and technologies, and challenges. In so doing, this document will explore the main features of 'strategic planning' practices that emerged in North America and Europe in private enterprises in the 1950s and then in government entities from the 1980s.

It does not attempt to design a strategic planning process for the Planning Commission. Such an exercise would not be appropriate because strategic planning processes are highly specific to the shape of the organisation, desired levels of consultation, size of the core group(s) engaged in the development process, the nature and frequency of desired interactions, the type of tools, the data required and the time available.

Strategic planning: A broad approach

The action of planning may be simply defined as 'devising a course of action'. Though simple enough, this definition does not hint at the time and scale dimensions that are associated with planning for large organisations or the units of planning of the magnitude most commonly found in governments.

For the purpose this discussion, we will use Young's (2003) definition of strategic planning as 'a formal yet flexible process to determine where an organisation is currently and where it should be in the future' (Young, 2003:4).

According to Young (2003:4), in the literature referring to the theory and practice of strategic planning, a strategic planning process usually involves the following six activities (my emphasis):

1. The formation of a *vision for the future* that defines the fundamental purpose of an organisation, its values and its boundaries
2. A *situational analysis* of the organisation; this includes a 'stakeholder analysis', which is an analysis of persons, groups or organisations whose interests and concerns are of key importance to the overall strategic process
3. The *development of general goals, specific targets or objectives*, and performance measurements to gauge organisational progress; this will involve forecasting developments inside and outside the institution and preparing scenarios of how to respond
4. Specification of *tactical 'action' strategies* to indicate what will be done to accomplish the goals and objectives
5. The implementation of detailed *operational plans*
6. An *evaluation component* to monitor and revise the overall strategic approach as it unfolds

There are many variants on Young's outline, such as the following two well known methods.

Example 1: An extension of the traditional SWOT model

1. Vision – Define the vision and set a mission statement with a hierarchy of goals and objectives
2. SWOT – Analysis conducted according to the desired goals
3. Formulate – Formulate actions and processes to be undertaken to attain these goals
4. Implement – Implementation of the processes agreed upon
5. Control – Monitor and get feedback from the processes implemented to fully control the operation

Example 2: The see-think-draw model

1. See – What is today's situation?
2. Think – Define goals/objectives
3. Draw – Map a route to achieving the goals/objectives

The main point is that there are many variants of the strategic planning process. It is important for a strategic planning process to be 'fit for purpose' in meeting the particular planning needs of an organisation.

Furthermore, Khakee and Stromberg (1993:218-220) argue that in contrast to the conventional view that planning should proceed in a linear, sequential fashion with strictly demarcated phases, it is better to understand the planning process as 'cyclical and continuous'. According to this interpretation, all stages in the strategic planning process are interdependent, but can be held in any order, depending

on how ideas and knowledge are put into the process. Value added in any particular stage in a planning process may influence activities and decisions in other phases.

We will return to the matter of designing the stages of a strategic planning process later in the discussion.

Characteristics of strategic planning

It is useful to consider the following characteristics that can contribute to making such a process effective (drawn from Boulter, 1997; Khakee and Stromberg, 1993; Young, 2003):

A strategic planning process

- is a learning process that can provide an opportunity for participants to understand more clearly what they want to achieve, and how and when they can do it
- is a discovery process because it can expose hidden opportunities and unseen solutions
- is a process in which openness to different perceptions and understandings are fundamental to finding solutions to problems
- focuses on matters of strategic importance – requiring the separation of strategic from other issues
- involves decision-making and –
  - selects a future course of action from amongst alternatives
  - is supported by priority-based resource allocations
  - is based on evaluating each set of interrelated decisions
  - is supported by a high-quality process as the plan has high stakes
- informs efforts to implement decisions, taking into consideration available organisational resources and capabilities
- adopts a realistic view of expectations
- takes into account contingencies and builds in flexible processes
- draws clear links between the outcomes of one stage that serve as key inputs into one or more other stages of the process
- establishes goals and arranges them –
  - in a logical hierarchy, nesting one or more goals within other broader goal(s)
  - taking account of the need for 'goal congruency', which refers to how well the goals combine with each other (e.g. does goal A appear compatible with goal B? do they fit together to form a unified strategy?)
  - bearing in mind the need to sequence goals logically over time
- is responsive and innovative rather than reactive.

Strategic planning will have different implications, depending on the organisational context in which it is undertaken. In this discussion, the planning context referred to is government macro-planning, which involves considerable challenges in terms of scope, scale and complexity.

In scanning these phases, it is clear that planning is knowledge and information-intensive, requiring inputs from external knowledge/information sources and internally from participants.

Scope, scale, complexity: How to conceptualise 'big' systems so as to change them

Planning for a nation state must involve attempting to understand and to deliberately influence the economic, social and political systems of the state as it articulates within global systems. In its own right the nation state is a very complex system.

Planning analysts have identified how different complex systems exhibit different characteristics of complexity. Any one characteristic can make a system appear complex. This makes these systems difficult to understand and control (modified from Johnson, 2008:523). The following are examples of such characteristics:

- Many heterogeneous parts, e.g. a city, the climate
- Multilevel dynamics, e.g. companies, governments, the Internet
- Complicated transition laws, e.g. economic systems, disease transmission
- Self-organisation into new structures and patterns of behaviour, e.g. social groupings
- Unexpected or unpredictable emergence, e.g. natural disasters
- Adaptation to changing environments, e.g. biological systems
- Co-evolving subsystems, e.g. land-use and transportation
- Network connectivities and multiple subsystem dependencies, e.g. ecosystems
- Dynamics emerging from interactions of autonomous agents, e.g. road traffic
- Discrete dynamics with combinatorial explosion, e.g. communication systems
- Sensitive dependence on initial conditions, e.g. weather systems, investments
- Non-equilibrium and far-from-equilibrium dynamics, e.g. fighter aircraft, share prices
- Ill-defined boundaries, e.g. genetically modified crops, pollution

Systems complexity multiplies as increasing numbers of systems, each exhibiting many characteristics of complexity, interact. For example, some analysts refer to 'complex socio-technical[1] systems ... that ... have many heterogeneous human agents (thousands or millions of people) and extensive heterogeneous physical infrastructure' (Johnson, 2008:527).

A system such as the nation state contains multiple complex systems with multiple complex characteristics and their simultaneous interactions. Macro-planning for a nation state necessitates understanding that state, what its constituent subsystems are and how they interact.

In the process of developing a strategic plan, it is therefore necessary to be able in some way to understand and to represent such complexity. Johnson (2008:527) asks: 'How can models be built of such systems –what can be left out as irrelevant to the dynamics of interest? How can data be collected on such systems?'

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1   Socio-technical systems are systems that combine human beings and physical infrastructure (Johnson, 2008:521).

These are important questions because the adequacy of the models or conceptions of the 'system(s)' under the planning gaze will impact on the usefulness of the plans. Likewise, the availability, validity and reliability of data will also impact on the use value of plans. Bad data can make a plan irrelevant – even counter-productive – because it is not based on an accurate representation of the reality.

Theory of planning

Planning is not a unitary discipline in the sciences or the social/human sciences. Contributions towards our understanding of planning, and to building the theory of planning, are made from a range of major disciplines such as economics, sociology, political science, urban and rural studies, public administration, operations research, statistics, organisational development, business science and so on.

Tewdwr-Jones (2002) proposes that the theory of planning deals with three main questions:

- Of aims – what planning should try to do
- Of procedure – how it should be done
- Of social criticism – how planning should be called to account

This discussion is not intended to address the theory of planning in detail, but these key questions are valid at all times and participants must be kept aware of this by the facilitator(s):

- What are we trying to do?
- How should we go about our planning process?
- How should we make our planning process accountable?

Why plan? The literature on planning

How important is planning? A popular source equivocates on whether it is worthwhile to plan: 'Preparation of a comprehensive plan will not guarantee success, but lack of a sound plan will almost certainly ensure failure.' (http://en.wikipedia.org/wiki/Planning; accessed 21 June 2009).

We take account of the private-sector literature on planning because planning as a corporate activity has a much longer history in the private than the public sector. Strategic planning came into widespread acceptance between the 1960s and 1970s in North American and European enterprises. By contrast, government take-up of strategic planning, especially sub-national planning, did not take place until the mid-1980s in the same regions (Blackerby, 2003; Poister and Streib, 2005:45).

Research on enterprise planning and its impact on performance in the private sector was also much better developed than in the public sector. It highlights the challenges in addressing a key question: is there a relationship between strategic planning and enterprise performance?[2]

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2   The focus of the literature survey was mainly on larger corporate and multinational enterprise planning, on the assumption that the large-scale enterprises were more comparable with government formations in terms of size.

Powell (1992, 556) observed that since 1970 more than 40 empirical studies have investigated the performance consequences of formal strategic planning, observing that this research 'produced confusing, apparently contradictory results' that were open to criticism on methodological grounds. Boyd's (1991) meta-analytical study described the relationship between strategic planning and performance as weak. On the other hand, on the basis of their literature review Miller and Cardinal (1994) suggested that strategic planning does positively influence firm performance.

More recent generations of studies have not produced a definitive answer. Devenish and Fisher's (2000) study of 77 Australian firms revealed no significant correlation between planning comprehensiveness and performance in Australia. Falshaw et al.'s 2006 study took into consideration the important contingent variables identified by previous researchers – organisational size, environmental turbulence and industrial sector – but observed no relationship between formal planning process and subjective company performance in a study of 113 UK companies.

The lack of consensus on the relationship between planning and performance in the private sector leads Powell (1992:556) to concede that 'it is somewhat disturbing, and a minor source of embarrassment, that the planning-performance relationship remains so poorly understood'. His observation is equally applicable today.

Why would this relationship appear so weak? One powerful argument is that factors of methodology are primarily responsible for inconsistent findings reported in the literature (Miller and Cardinal, 1994). Others point out significant difficulties inherent in investigating the relationship between strategic planning and performance, which include the fact that firm performance in the present is a function of past and not current, planning practices (Miller and Cardinal, 1994) and that hard-to-obtain [l]ongitudinal data would be required so as to control for time lag effects and to show that causal relationships do exist' (Falshaw et al., 2006). To these impediments must be added the challenge of establishing acceptable measures of (subjective or objective) performance (e.g. in the private sector these may include return on assets, return on equity, return on investment, return on sales, return on revenue, and others).

Measuring organisational performance in the public sector is quite tricky because a different set of indicators must apply: how to measure government performance is complex and politically sensitive. Secondly, there is the matter of unit of analysis, because government departments perform different functions, and outcomes/performance often depends on the interaction between different departmental outputs. It is clear that methodological difficulties would be encountered by an investigator who sought to investigate the relationship between strategic planning and government performance – only on a larger scale than found in the private sector.

In attempting to address the question 'Is there a relationship between strategic planning and national global competitiveness?' we must bear in mind that irrespective of the quality of the strategic plan, there are many factors that impact on the planning-implementation-performance relationship.

How the plan is implemented can amplify the positive benefits of the plan or negate the potential benefits. Some of these aspects identified in the literature are noted below:

- Effectiveness of planning can be conceptualised in terms of the intensity of usage of the planning system by the decision-makers (Ein-Dor and Segev, 1981, quoted in Sinha, 1990). Strategic plans may be developed but not be put into practice. This is especially a concern in smaller government planning units.
- Strategic planning influences performance positively but the effect is 'moderated negatively by the extent that decision making in the organisation is decentralised' (Eriksen, 2008:225). Decentralised organisations must therefore pay attention to communicating the details and the value of the strategic plan.
- The culture of the enterprise can influence the strategic planning-performance relationship (Hoffman, 2007). Government formations are very diverse and have different work cultures. This needs to be taken into account in obtaining buy-in.
- The impact of planning is affected by the dissemination of the strategic plan in the organisation over time (Powell, 1992). Organisations must therefore pay attention to communicating the details and the value of the strategic plan as early as possible.
- Many decisions affecting enterprise performance are made outside the formal planning process (King, 1983). The strategic plan will not dictate all decisions. It cannot take account of all exigencies, so managers must interpret the plan. By the same token, managers may from time to time ignore/discount the intention expressed in the plan for more or less good reason.

Though this review does not seek to address the matter of implementation directly, we will briefly return to the question of implementation in the concluding section.

Evolution of planning practice

It is useful to consider how undertaking planning at nearly the end of the first decade of the 21st century is different to the experience and approach adopted 50 years previously. This is because planning practice has evolved in terms of how to plan and the temporal scope of plans. Techniques and technologies to support planning have also changed with time – these trends will be addressed later.

In the 1950s and 1960s in the United States, long-range planning was considered to be valuable. In this period, US corporations and government entities allocated considerable resources to developing long-range plans with highly detailed sub-specifications and objectives stretching for 20 years or longer. Long-range plans were based on a key assumption – that conditions in the field are stable over time and therefore predictable. Thus long-range plans could be designed because current knowledge about the future was considered sufficiently reliable to assure the reliability of the plan itself for the duration of its implementation (Allison and Kaye, 2005:7-13). This was a period of confidence, but it did not last.

Grant (2003) explored characteristics of the strategic planning systems of multinational, multi-business companies faced with volatile, unpredictable business environments, and showed fundamental changes in the nature and role of strategic planning since the end of the 1970s. The dangers of using medium-term forecasts as a foundation for business and corporate plans became painfully apparent during the 1980s, when the accuracy of macroeconomic and market forecasts – especially of crude oil prices – declined precipitously. As late as 1992, BP was brought to the brink of catastrophe as a result of a strategy that had assumed an oil price of $20 a barrel (Grant, 2003:506).

As a consequence of this instability, the general tendency was for:

- reduced forecasting
- downplaying the role of economic inputs
- shifting emphasis from detailed planning to establishing strategic direction
- reducing the formality of the planning process
- shifting key responsibilities from planning staff to line, and from corporate to business managers
- shortened time horizons
- more highly structured performance targets and corporate guidelines

Consequently, e Cunha et al. (2006:946) argue persuasively that strategic planning has been 'changing from a detached, analytical, prediction-oriented endeavour, to a dynamic process that combines a vision of the future … and a combination of top-down and bottom-up processes'.

Clearly this shift from the earlier confident design-oriented to more recent process-oriented approaches to strategy formulation have emerged in response to volatile environments. The question is to what extent could government formations adopt this new, more dynamic tendency in strategic planning, dubbed 'planned emergence' by some? Can government afford to be too fashion-conscious? Two key considerations would be: Can traditionally hierarchical government bureaucratic structures adapt to a more fluid planning style? and; Do government formations have the requisite skills at different levels to sustain a more decentralised planning approach? Some observers of planning might argue that this approach has already been taken up in South African government formations – but how successful has this approach been?[3]

In the same period that the style of planning changed, so did ideas about the legitimate time scale for planning. As we have noted, global environmental turbulence was undermining confidence in conventional long-range planning.

Allison and Kaye (2005:7-13) suggest that the shift in emphasis from 'long-range planning' over a wide time expanse to 'strategic planning' that has a shorter time perspective occurred because each

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3   Classical contingency theory asserts that different external conditions might require different organisational characteristics, and that the effectiveness of the organisation is contingent upon the amount of congruence or goodness of fit between structural and environmental variables (Shenhar, 2001). Accordingly, government formations need to try to be more flexible in response to rapidly changing environmental conditions.

assumes a different environment. Assuming a stable environment, long-range planning predicted specific, year-by-year, concrete objectives in high levels of detail.

In contrast, it is argued that an organisation must be responsive to a dynamic environment. Strategic planning therefore stresses the importance of making decisions that position an organisation to respond successfully to changes in the environment. Allison and Kaye (2005:7-13) observe that in the private sector, 'while some organisations may develop visions that stretch many years into the future, most strategic plans discuss priority goals no farther than five years out, with operational objectives identified for only the first year'.

However, this reasoning is not appropriate for governments – or for that matter for enterprises working in sectors where a long-term view is essential (e.g. energy). Thus, in the case of government, strategic decisions that are deemed fundamental, directional or over-arching may in fact derive from medium-term and long-term views.

In South Africa, for instance, the bedrock of planning since 1994 has remained the five-yearly Medium-Term Strategic Framework and the three-yearly Medium-Term Expenditure Framework. But given the scope and scale of government operations, and in spite of the volatility of the global economic environment, governments need both to develop and to commit to a longer-term view. Clearly, prioritising and synchronising short-term (operational), medium-term and longer-term planning frameworks represent a key challenge.

Politics of planning

In a recent paper that explores the relationships between policy-makers, public sector managers and social scientists in the process of 'designing complex socio-technical systems' (read: long-term strategic planning by government), Johnson (2008:520) offers a harmonious and egalitarian ideal:

Design [read: strategic planning] is the process of creating visions of possible futures, making explicit the values underlying the preferences for particular futures, and establishing practical plans to achieve desired outcomes that are robust in the face of uncertainty and changes in constraints. This view transcends the usual compartmentalisation of disciplines and responsibilities. To varying degrees, everyone can act as scientist, policy maker and designer.

This vision is attractive, but it is remarkable for two key characteristics that distinguish it from real-world planning environments: first, it does not recognise power differentials between participants and, second, it assumes that it is only necessary to make the values underlying 'preference for different futures' (read: policy choices) explicit, whereas in reality recognising underlying values is only a step towards negotiation between groups that hold opposing – or even just different – values. Johnson's view thus elides the question of contestation over differences in power and position in a planning process.

In addition, the status of the 'scientist' in the process must be unpacked. Planning processes have been – and still are from time to time – described in language implying that the process is 'based on scientific analysis/hard data/evidence' or supported by 'technical experts' and is therefore 'objective/ neutral'. However, planning is ultimately a management function that involves political questions of power, accountability and resource allocation. Tewdwr-Jones (2002) argues that planning is neither a mere a procedural course of action, and nor is it value free. Accordingly he observes that planning is an inherently political process that generates unequal benefits.[4]

'Values' refer to attitudes, beliefs or perceptions that humans hold more or less strongly and that influence their behaviour. Importantly, value orientations are culturally produced and can be expected to vary between groups (Redmond, 1978:22). How will values influence people's responses to government planning? Strategic planning involves decisions and trade-offs between different options, which may create the perception of unequal allocation of resources or opportunities to one or more social and/or economic groups in a heterogeneous society.

It is in this context that the concept of the 'wicked problem' has been coined. It refers to the seemingly intractable problems of social and economic policy that are present in the macro-planning pursued by governments. Rittel and Webber (1973:155) conceived of 'wicked problems' in this way:

> The search for scientific bases for confronting problems of social policy is bound to fail, because of the nature of these problems. They are wicked problems, whereas science has developed to deal with tame problems. Policy problems cannot be definitively described. Moreover, in a pluralistic society there is nothing like the undisputable public good; there is no objective definition of equity; policies that respond to social problems cannot be meaningfully correct or false; and it makes no sense to talk about optimal solutions to social problems unless severe qualifications are imposed first. Even worse, there are no solutions in the sense of definitive and objective answers.

Tewdwr-Jones (2002) and Rittel and Webber (1973) emphasise the importance of problematising power and values in government planning processes. Nevertheless, it is necessary to accept that government planning is political, as Young (2003:10-11) observes: 'In government, much that is decided … is tied to political decisions. Budgets and appropriations are likewise made by elected officials and are political in one way or another.' Bryson (1995:20) likewise believes that strategic planning 'accepts and builds on the nature of political decision making'.

Clearly power and values influence every phase of the planning process:

- from the development of the strategic plan
- to the participation of government formations in the planning process
- to the participation of civil society in the planning process
- to what parts of the plan are enacted and how

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4   In recent years, the concept of 'evidence-based policy-making' has been invoked to appeal for policy-makers to refer to evidence (for the moment leaving aside the status of scientific evidence itself as contestable) as a point of reference that balances-off politically driven allocations of resources and opportunities.

In the process of national macro strategic planning, government will seek to maximise buy-in to their plan from major stakeholders. Thus a major element in the evolution of the national plan will be to mobilise support from civil society and manage expectations. Consequently, questions of accessibility, consultation, transparency and communication, and perceptions of inclusion/exclusion, are of critical importance. Indeed, it is important for government to galvanise popular support for a plan, even on a symbolic basis. Recognising the power that can be released, Brunsson (1982) has argued that *ideologies* may serve as effective strategy substitutes.

Designing the planning process

In constructing a strategic planning process, the designers need to pay attention to the structure of the planning process, which refers to the preferred activities, their sequencing and the associated tools. Then there is the matter of time made available for the entire process and for each phase in the process. The allocation of time overall and to the various planning phases can substantially affect the quality of interaction and outputs.

The 'soft' structure of the planning process is of critical importance. For instance, it may also contain embedded within it a dominant conception of what a strategic planning process 'should be/is'. This dominant conception may be assumed or it may be an openly stated intention. For example, the guiding intention may be to create:

- a 'blueprint' or a strategic plan that assumes a fixed end state
- a comprehensive strategic plan based on systems analysis and rational design
- a decision-centred strategic plan that functions as a guide with opportunity for incremental change/ongoing adjustment
- a 'Libertarian' strategic plan that sets only broad rules or limited frameworks (adapted from Tewdwr-Jones, 2002)

The position taken will significantly influence the approach and the outcome of the process. Equally important is how the participants communicate and how conflicts within the group or deadlocks are resolved. As a result of these choices and also the influence of the facilitator, reflection may show that the planning process was characterised by:

- 'a more focused and a more synoptic treatment of the scope
- a more simplifying and a more elaborating treatment of complexity
- a more reactive and a more interactive treatment of conflict
- a more reducing and a more accommodating treatment of uncertainty' (Khakee and Stromberg, 1993:218)

On the last point, uncertainty is an inherent element in the planning process. This element must be acknowledged and engaged with, especially because of the very high-stakes nature of planning. With uncertainty, levels of tension are inevitable, but interference with debate should be limited.

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Planners must be aware that they need to make choices about how they undertake strategic planning that is either fixed or adaptable, comprehensive or allows space for interpretation/innovation, closed or open to consultation. The question arises: what character will the South African Planning Commission adopt to inform its processes?

The process design choices – and also the orientation or personal approach of facilitators in each phase – will more or less subtly influence how the planning process proceeds. Khakee and Stromberg (1993:218-219) stress the importance of a 'process leader' who is capable of coordinating the entire process.

Large-scale strategic planning necessitates the use of tools and devices (e.g. software, facilitated processes) that can capture the key elements of complex realities to enable thinking and decision-making. In the sections that follow, these aspects will be addressed in some detail.

Methods, tools, techniques and data

As we have observed, the technical structure of the planning process is centrally important. The literature reveals that the creation of models, techniques and methods for the purpose of strategic planning was, and still is, a growth industry. For some researchers and practitioners, this is an unwelcome situation. Yewlett (2001:1311) firmly warned against developing new methods as follows: 'It is important, through technical and historical education, to avoid both pointless reinvention of the wheel, and aimless scrabbling for "new" relevant methods, especially for strategic planning, to the detriment of the utilisation of what is already known and tested.'

As a result of an 'overabundance' of alternative methods and models in the area of scenario planning, it seems that there has been little progress towards distinguishing the more or less viable methodologies from the hundreds out there in the market. Bradfield et al. (2005:796, citing Martelli, 2001) complain that that there is a plethora of scenario development models and techniques, the result of which is that the 'present methodological chaos … will not fade away in the foreseeable future'. Unfortunately, practitioners are least able to assess such a high volume of available products, the danger being that they become wedded to a few models with which they are familiar and remain unaware of improved products and approaches in the market. The same challenge applies to practitioners who use or sell a model/technique that they themselves have developed.

Given this background, it is not feasible to explore the 'methodological chaos' in depth. Instead, what follows is an attempt to provide a framework for understanding how different models, techniques and methods can be used. It does not seek to design the strategic planning process or to recommend any particular product.

The following riders should be taken into account: Strategic planning for government formations is a high-stakes process that should not be risked through the use of untested or untried tools of indeterminate value-add. A set of robust tools and a replicable planning process are needed so as to

provide a confident basis for ongoing development of the strategic plan over successive iterations – whether these iterations are every year or every three or every five years.

Data quality and information quality in the strategic planning process are critical. The quality of data in terms of validity and reliability is important. Records need to be kept of the handling of data through its importation into particular tools in the planning process and any other subsequent manipulation. Steps must be taken to archive/store all datasets used in the process. These aspects are fundamental to systematic treatment of data and replication of data management and analytic techniques over time. Systematic and consistent use of evidence is important for modelling purposes in particular.

Application of tools and data to different phases of the planning process

Earlier in the document a generic set of phases associated with most strategic planning processes was presented, with the proviso that there are myriad variations on the phases of such a process, depending on its purpose.

In this section, we show how undertaking a particular phase in a strategic planning process may require data/intelligence and/or one or more tools. We borrow an outline of the phases in a strategic planning process from Tomlinson and Dyson (1983:775) as an example (see the table below).

Their example usefully demonstrates the different 'types' of tools that they required across the whole process. They have used a simple typology: models (of behaviour), projections and decision aids.

First, we note the use of data/intelligence in most phases of a planning process. Data/intelligence may (also/rather) be considered as an input rather than a tool. For instance, data will almost certainly be needed for developing projections of trends (e.g. the size of households in South African provinces).

Second, we note the use of projections. For example, in the phase 'option formulation' South African planners may require projections of numbers of unemployed people based on different combinations of government intervention (e.g. subsidised training, EPWP employment, community service schemes in rural areas, investment in commuter transport networks, subsidy to labour-absorbing industries).

Projections can be considered one form within a broader category of scenarios or scenario-building. We will discuss scenarios in a little more detail below. Other related techniques include Delphi, cross-impact analysis, intuitive logics, probabilistic modified trends methodology, simulation modelling and trend-impact analysis (Bradfield et al., 2005:805)

Third, 'decision aids' is an extremely broad category that may contain devices as simple as a list (e.g. list the arguments for and against administering condoms in schools). A widely used, simple yet powerful decision aid is the 'decision tree analysis' referred to in more detail below.

The following business analysis techniques are frequently used as decision aids, particularly for the 'situational analysis' phase of the enterprise/institution's strategic planning process:

- SWOT analysis (strengths, weaknesses, opportunities and threats)
- PEST analysis (political, economic, social and technological analysis)
- STEER analysis (socio-cultural, technological, economic, ecological and regulatory factors)
- EPISTEL analysis (environmental, political, informatic, social, technological, economic and legal)

Fourth, 'models of behaviour' involve the systematic mapping of a more or less complex set of behaviours for the purpose of predicting the likelihood of particular outcomes (e.g. modelling water supply networks, alternative transport systems, etc.). A widely used approach to modelling behaviour in structured business environments in particular is known as operations research (OR). This approach is described in more detail below.

Economic models will be used to quantify the direct and indirect economic effects on the South African economy of the projects and programmes that government finances. On a larger planning scale, this kind of modelling could be done to 'test' various scenarios for the overall South African growth path to assess the possible growth and development impact of proposed growth trajectories. Customised macro-econometric and computable general equilibrium (CGE) models for the national level will make this kind of exercise possible. Of course, quantitative/statistical models are not the only methodological approach available in scenario development, as we observe below.

The relationship of analytical tools to the elements of the planning process

Phase in the strategic planning process	Tools applied			
	Data and intelligence	Models of behaviour	Projections	Decision aids
Objective setting and review	x	x	x	x
Gap analysis				x
Option formulation	x	x	x	x
Feasibility	x		x	
Resource assessment	x	x	x	
Impact assessment	x			

Source: Tomlinson and Dyson, 1983:775

Fifth, the designers of the strategic planning process should not assume that one type of tool will suffice for each phase in the strategic planning process. This is because the process concerns a highly complex environment, and those involved in the planning process may not be satisfied with the output(s) of particular tools and seek further input. In such a situation, the only route may be to take a heuristic approach, which would be to proceed 'by trial and error or by rules that are only loosely defined' (OED, 2006:669).

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According to Cole (2008:777-778) a heuristic approach would justify considering data and/or views and/or scenarios deriving from several sources. The example in Figure 1 shows a situation where various data and analytic input are utilised (e.g. historical text, trend analysis, Delphi method and a scenario). A heuristic model is built on the basis of evidence/knowledge extracted from all sources.
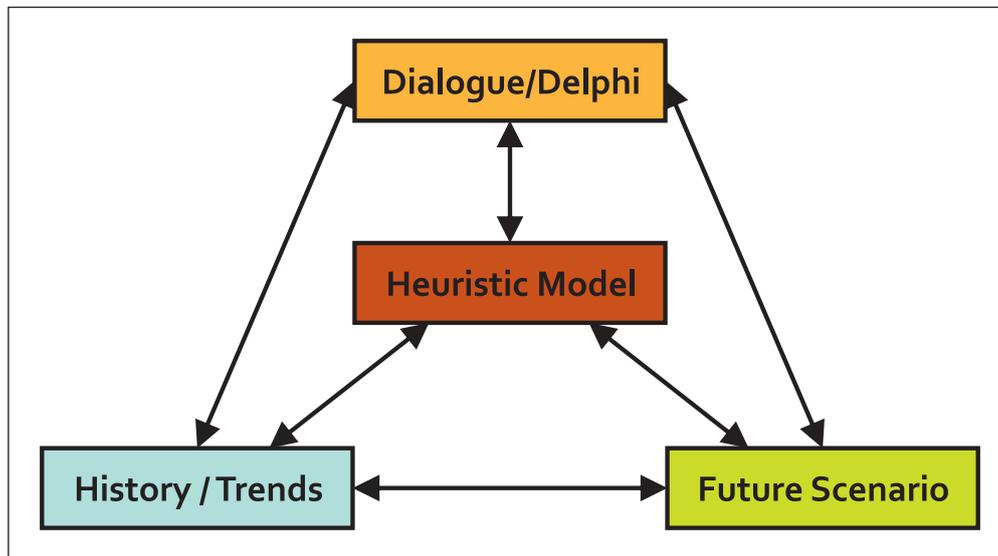

Figure 1: Heuristic modelling in its futures context

Source: Cole, 2008:778

A heuristic approach to futures studies involves seeking insights into the variety of possible outcomes based on consideration of a broad range of variables. The challenge is to integrate knowledge in a coherent way without the necessity to make firm predictions.

Sixth, the above examples should not be taken as representative. Another major source of support to strategic planning that must be considered is geographic information systems (GIS) software. This set of technologies will be critical in assisting in the development of a national strategic plan that has to be spatially referenced.

Seventh, and most important, is that this account of a strategic planning process cannot show how to make the transition from one phase to the next (e.g. how to move from scenarios to strategies, to plans and to budgets). Just because the strategy development phase follows on sequentially from the scenarios phase does not mean that the conclusions of the one phase automatically translate into the starting point for the next phase. It is critical to visualise how the data/findings/conclusions from one phase will inform the next phase.

Similarly, the problem tree/analysis method is a planning method based on needs, but it is not a mechanical translation of identified needs into objectives. One approach would be to follow on immediately with actual project planning, such as with the logical framework approach. These transitions need to be considered and planned for.

Eighth, the question of financing the technical aspects of a strategic planning process needs to be put on the table. 'An important and fundamental difficulty of decision analysis is that it is expensive,' argues Bordley (2001:1321). 'Only a tiny fraction of decisions will ever be aided by professional decision analysis; we can only hope that among them will be the most important decisions.'

The sections below will offer brief overviews of the key models/techniques named above.

Scenarios

The term 'scenario' has many meanings, and there are many methodologies that can be applied to develop scenarios, ranging from the use of mathematical techniques, including stochastic modelling, on the one hand to the use of purely qualitative techniques such as the Delphi method on the other. Some view scenario development as a means of identifying drivers of change before they manifest themselves in near-term events (Burt, 2006); others see the scenario approach as a vehicle for social learning.

Scenarios are used to achieve different objectives: to make sense of an issue, or to anticipate changes in the environment, or to develop a strategy, etc.

Stochastic and related methods

Scenarios can be distinguished from more 'deterministic' techniques such as single-line forecasting or fully estimating probability distributions. Scenarios are more preoccupied with 'bounding and better understanding future uncertainties' that 'can range from loose projections to statistical representation of combinations of uncertainties' (Schoemaker, 1993:194-196).[5]

Developing mathematical scenarios involves confronting two key characteristics of variables (Schoemaker, 1993:197; refer also to Figure 2):

- Uncertainty: '[C]oncerns the extent to which the causal structure of a strategically relevant variable is unknown. The complexity dimension captures the extent to which the causal structure is unique to that variable, i.e. independent of the causal structures of the other strategic variables."
- Complexity: '[D]oes not refer to the intricacy of the underlying causal structure, but rather to the degree to which the underlying factors overlap with the causal structures of other strategic variables."

When faced with high complexity, the challenge is to construct models that can reveal the relationships among the variables . When uncertainty is low, deterministic models may be adequate, as in the case of linear programming, inventory/production models or econometric equations. However, deterministic models seem to perform less well at macro levels, as evidenced by the failures of econometrics (Leamer, 1983) and global models in general (Page, 1982).

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5   Scenarios should not be confused with 'visioning'. The central assumption of the latter approach, popularised from the mid-1990s, was that organisations should build their future through a compelling vision instead of trying to predict it (Collins and Porras, 1996).

When both uncertainty and complexity are high, we may have to employ stochastic models (in which some variables are treated as being random). Although an academic ideal, stochastic models likewise appear not to have worked well in practice in the field of strategy. Their use is usually limited to operational management (e.g. inventory-production models, queuing simulations, financial modelling and marketing), entailing well-structured problems. Scenarios offer a compromise between the theoretical ideal of completeness, formalism and objectivity on the one hand and most managers' desire to keep matters concrete, manageable and relatively simple on the other (Schoemaker, 1993:199).
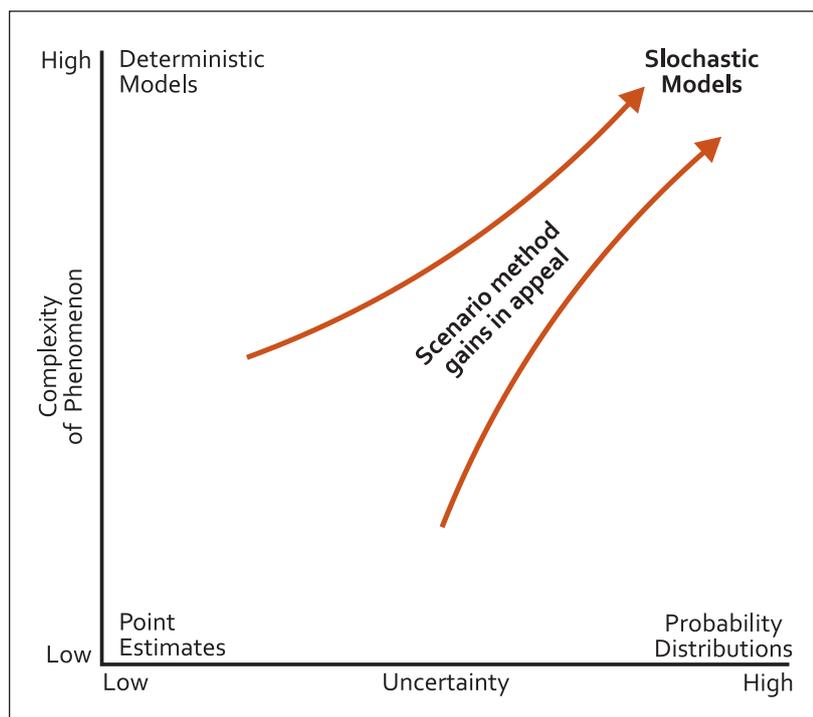

Figure 2: Approaches to planning

Source: Schoemaker,1993:198

On the other hand, scenario development can be undertaken through qualitative approaches.

Scenarios can be viewed as reflexive learning processes that involve contemplating possible futures that are nevertheless anchored in the present. In this approach, scenarios 'may be viewed as processes of thinking through alternative stories about how an organisation's environment might evolve in the future. With scenarios, managers are not trying to predict the future but are rather looking for a deeper understanding of the forces operating in the organisation's environment' (eCunha et al., 2006:949).

Furthermore, this approach to scenarios seeks broad substantiation rather than predictive specificity: '[they] do not seek to predict futures but to envisage how some present key variables may evolve to create the future. In this sense, scenario thinking fundamentally rests on macro-analysis' (eCunha et al., 2006:949).

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Delphi technique

The Delphi technique is a way of obtaining group input from a panel of independent experts for problem-solving. It does not require face-to-face participation. It uses two or more rounds of carefully designed questionnaires to the panel that address a predetermined issue/question. Close attention needs to be paid to designing a research question or proposition in such a way that it elicits the very best thinking that experts can bring to bear (Novakowski and Wellar, 2008:1487).

Each set of responses from the panel is followed by anonymous summaries and feedback from a moderator. Experts are encouraged to revise their earlier answers in light of the replies of other members of the panel. It is argued that during this process the range of the answers will decrease and the group will converge towards the 'correct' answer. The Delphi technique provides an equal opportunity for participants to express their opinions, since responses are neither ranked nor weighted according to participant and are anonymised (http://en.wikipedia.org/wiki/Delphi_method, accessed 21 July 2008; Michigan State University Extension, 1994).

Linstone and Turoff (1975a:4) state that the Delphi technique is particularly useful when the research problem 'does not lend itself to precise analytical techniques but can benefit from subjective judgments on a collective basis'. Richey et al. (1985:142) observe that the Delphi technique 'lends itself more readily to conceptual or philosophical issues than to issues that require exact, or quantitative, answers'. Similarly, as Ying and Kung (2000:1487) suggest, use of Delphi is suitable when objective observation of data is neither feasible nor possible. Delphi seems to hold advantages over traditional forecasting methods (e.g. theory-based approaches, quantitative models, trend extrapolation) in areas where scientific laws have not been – or are unlikely to be – established to describe behaviour.

The Delphi technique is therefore pertinent to a variety of planning needs, and has evolved into different 'types' with particular purposes:

- Normative Delphi: Involves exploration of what 'should be', in the context of current knowledge (Martino, 1999).
- Forecasting Delphi: Is concerned with predictions about future events about which existing knowledge is minimal and/or diverse and/or conflicting knowledge (Albright, 2002). While there are four primary approaches to forecasting (extrapolation, leading indicators, causal models and stochastic methods), the Delphi panel may intuitively use one or all four of the approaches (Martino, 1999)
- Policy Delphi: Explores matters of political gravity and contestation (Coates, 1999; Critcher and Gladstone, 1998. The purpose is not expert consensus; rather, it is concerned with ensuring that the range of politically relevant variables and contextual parameters is identified and explored.

Decision tree analysis

Problem tree analysis (situational analysis/problem analysis/decision tree analysis) is a structured approach to analysing an issue/problem. It involves mapping the cause and effect relations around an issue/problem. The approach is similar to 'mind mapping', but with more structure, and is useful in identifying problem solutions (MDF, 2005; Veselý, 2008) and visualising the components of a problem.

The following are some of the advantages:

- 'The problem can be broken down into manageable and definable chunks. This enables a clearer prioritisation of factors and helps focus objectives
- There is more understanding of the problem and its often interconnected and even contradictory causes. This is often the first step in finding win-win solutions
- It identifies the constituent issues and arguments, and can help establish who and what the political actors and processes are at each stage
- It can help establish whether further information, evidence or resources are needed to make a strong case, or build a convincing solution
- Present issues – rather than apparent, future or past issues – are dealt with and identified
- The process of analysis often helps build a shared sense of understanding, purpose and action" (MDF, 2005).

Some decision support software packages – or 'toolkits' – incorporate the problem tree/decision tree technique alongside other tools. In these instances, the problem tree approach is linked to a spreadsheet that makes it possible to model sequences of events, assess which factors in a decision are most important and generate risk profile graphs and other quantitative data. Also, once the 'tree' is captured electronically, some software will provide advanced features, including linked trees, logic nodes and reference nodes.

Operations research

Operations research (OR), or operational research, is an interdisciplinary subdiscipline of applied mathematics that uses various methods (e.g. mathematical modelling, statistics, algorithms) to derive optimal or optimised solutions to complex problems. It is used as an aid in decision-making and is most often used to analyse complex real-world systems, with the goal of improving performance. It is most typically concerned with determining the maxima (of profit, assembly line performance, crop yield, bandwidth, etc.) or minima (of loss, risk, etc.) of some objective function (http://en.wikipedia.org/wiki/Operations_research accessed 20 July 2009; http://en.wikipedia.org/ wiki/Category:Operations_research, accessed 20 July 2009).

Although mathematical operations research (i.e. hard OR) can support well-defined problems involving a small decision-making group, it is less suited for complex difficult-to-define, dynamic and multi-stakeholder problems. This concern led to the development of 'soft OR' methods to help stakeholders

develop a common understanding of a problem. For example, 'cognitive mapping' and 'soft systems modelling' both involve stakeholders in defining the problem situation.

Another variant, 'decision conferencing', is quite widely used for adapting decision analysis to organisational decision-making. In decision conferencing, through an interactive process with stakeholders, an analyst helps to formulate conceptual model situations using systems concepts. The analyst/technical specialist – from outside the organisation – assists a diverse group of clients/ decision-makers to interactively and iteratively construct a model of their shared view of the reality associated with some problem (Bordley, 2001:1316-1321).

Strategic planning software tools

The market for software[6] to support 'strategic planning', 'business planning' and other variants is very large.

There is a large variety of 'one-stop-shop packages' in which software vendors bundle multiple applications. Naturally these range tremendously in terms of power and utility. In many cases the applications may involve not much more than a basic planning exercise based on a simple spreadsheet. However, there are a number of powerful specialist applications that are built for strategic planning in particular industrial sectoral activities (e.g. logistics, supply chain, manufacturing, mining, transport systems, construction). In the service of larger corporate clients, some vendors can also provide web-based and serviced strategic planning utilities. Also, strategic planning tools and functionality are frequently built into enterprise resource planning systems (e.g. SAP, PeopleSoft, BAAN).

The majority of off-the-shelf software products provide an unconnected set of software tools (e.g. budgeting, SWOT exercise, etc.) that are not conceptually or programmatically linked to each other in ways that could support a logical planning process.

There are such programmes that embed a series of tools in a linked (yet adaptable) process. For example, Thinktools is quite strong because it provides a framework for linking various tools together in a strategic thinking process. However, Thinktools may not suit all planning environments and needs in spite of its relatively high levels of flexibility. Also, programmes like Thinktools require a trained facilitator (trained in the software and as a facilitator) and a familiarity with the public service planning environment, which are not freely available. See below for further discussion of the role of consultants.

Consultants/experts/scientists

Those responsible for coordinating the design of a strategic planning process and for managing the process itself must be aware of the role and potential influence of 'consultants' on parts of the strategic planning exercise or even on the whole process.

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6   This is not the same as project management software such as scheduling, budget management, resource allocation, quality management, documentation or administration systems.

Reference to a consultant is mainly in their role as technical experts and/or analysts who support the use of technologies, models and methods such as those discussed above. Clearly, where the designers of the strategy elect a particular model/technology, this may require the presence of an external consultant who will operate the technology/model and also contribute to and possibly influence the discussion.

The traditional attitude to using fairly complex models/technologies is that the model should not be separated from the analyst. This is because no matter how technically sound the model built by the analyst is, serious mistakes can arise from incorrect use of the model, or because the person using it lacks sufficient knowledge either of the decision situation or of the assumptions that are built into the model (Tomlinson and Dyson, 1983).

Strictly speaking, it is argued that the consultant/analyst must take responsibility for the application of the model/technology. Many such consultants have claimed that their models can only be used by themselves, but this approach necessitates closer involvement with the affairs of the department concerned than it may be prepared to concede to a consultant.

In the ideal situation, the model/technology is best applied by someone who is working on a continuing basis in the decision-maker's or planner's organisation. This is important in relation to sustaining continuity in availability of expertise, so that over time the same person can replicate the application of the model and its assumptions, thus ensuring that results can be assumed to be 'correct' and consistent outcomes of the model rather than intentional or unintentional changes to assumptions, etc.

On the other hand, there have long been pressures from the global strategic planning 'industry' to make 'analyst-free' models available for general use. These kinds of technology/models are valuable because they remove from the decision equation any bias that a consultant/analyst might have brought to the process. This effectively takes power back from the 'expert/scientist'.

In the United States of America, the use of this type of free-standing (unsupported/unserviced) model is quite widespread. They are legally incorporated into certain public planning processes and every model used in a major policy analysis has to be stated and identified and must be made available for general criticism, analysis and debate. If this type of model is built for government agencies, they are commonly created by consultants whose task is formally completed once the model is tested and running. However, the large number of unique free-standing models has created serious problems for model validation. One response from government has been to require specifications/parameters that must be satisfied to become eligible for use (Tomlinson and Dyson, 1983:776).

But a fundamental problem remains. Even if validated free-standing models are available, in large-scale and high-stakes projects such as macro-strategic planning, the planning team is highly likely to need advice and assistance from an analyst for a number of reasons. First, the models used are usually sophisticated and complex, are based on many (hidden) assumptions and require very large amounts of data. Second, the unique macro-conditions under which the model is to be applied probably

differ substantially from those which the model-maker assumed would be in force. Under these circumstances, the modification and use of the model would best be undertaken by a professional analyst (Tomlinson and Dyson, 1983:776).

On balance this discussion of the pros and cons of analyst-serviced models seems to suggest that there is a case for employing analysts subject to certain conditions.

Planning and implementation

In this concluding section, some reference must be made to the environment within which the final plan will be actualised.

Earlier in this document, reference was made to the need for realism in the planning process and for understanding the impact of contextual factors on implementation. Rather than looking at what factors may retard implementation, Bryson and Bromiley (1993) have asked the question the other way round: what kinds of environment hold the highest potential for successful implementation and good outcomes of major projects? They argue that the contexts which hold the highest potential for success appear to have the following characteristics:

1. Stable general political and economic environment.
2. Little change from existing technology is required.
3. The lead organisation has experienced, skilled and numerically adequate planning staff.
4. Potentially affected groups are aware of the project, concerned about it and give it high priority, as well as having understanding of the cause-and-effect relations in the substantive area that prompts the project.
5. Enough but not excessive time is available for the project, since too much time tends to make lead organisations try to force their wills on others, instead of attempting to problem-solve.
6. The affected groups are not part of stable prior coalitions (Bryson and Bromiley,1993: 319-337).

It would be useful to consider these characteristics with reference to the environment in which the new Planning Commission will be intervening.

The reader will be aware that this document has focused entirely on the challenges for strategic planning by a senior group of decision-makers from government formations. It has not given attention to the question of planning within the scope of a finished version of a macro strategic development plan for the country.

How the overarching national plan will articulate with planning in the underlying spheres of government is a very important question. It is therefore vital for the senior planning commission to give attention to how 'bottom-up' planning can innovate and yet still 'mesh' with the big picture expressed by the national plan.

On an equally important note, it will be valuable to look not only at whether the plans of the different planning entities mesh but also at ensuring that a planning culture continues to grow within the provincial and especially local government levels.

Based on their work in Swedish local government, Khakee and Stromberg (1993) point out that government must try to foster an innovative and open-minded approach to planning and to beware of the danger of slipping back into the practices of what we could call 'planning business as usual':

1. 'New methodologies may be applied in special situations, such as a new administration; or an unusual planning challenge; in which something extraordinary has to be done. When the situation normalises, planning processes return to the conventional.
2. New methodologies may require special skills not required in the organisation before. These skills may be brought into the organisation from outside (e.g. consultants, researchers) or drawn from specialists within the organisation. When such people leave the organisation they also take the skills with them. Continuity in high-level planning capability is disrupted.
3. New methodologies may call for more resources. In times of resource scarcity, the organisation reverts to more traditional routines, which are assumed to use less resources.' (Khakee and Stromberg 1993:223).

Finally, obtaining worker support is particularly important within government formations. Ketokivi and Castañer (2004:337-365) show how, in the private sector, it is important to counteract the potentially adverse effects of employees' pursuit of subgroup goals over organisational goals through participation and communication. This finding may be equally apposite to government formations.

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