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The Prospective Process through Scenario Thinking for the Built and Human Environment: a Tool for Exploring Urban Futures

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FUTURES THINKING FOR THE BUILT AND HUMAN ENVIRONMENT

The Prospective Process Through Scenario Thinking for the Built and Human Environment: a tool for exploring urban futures

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ABSTRACT

We are currently living through an era where we can, and need to, create exciting new possibilities in the way we think about, plan, design and build new places and spaces for working and living. At the same time, two irresistible forces – change and complexity – face decision-makers charged with framing and executing future policy and practice for the built and human environment. This paper generally argues the case for employing a 'prospective' process through scenario thinking for strategic planning and management in the urban arena. It does not attempt to identify or explore the advances made in planning for built and human environment over recent years or the promise of those to come. Rather, it describes and promotes a methodology which helps organisations, such as those involved in the formation of the urban environment, to learn their way into the future in a complex and changing world of uncertainty and ambiguity.

Keywords - futures, scenarios, strategy, planning, prospective

THE CONTEXT

Complexity, Uncertainty and Change

It is an age of anxiety and a period of transition when society, institutions and industries of all kinds crave an insight into the future. Over the next ten to twenty years governments, companies and individuals will face increasing difficulties in an environment of growing complexity, heightened uncertainty and quickening pace of change. A range of remarkably different possible futures lies ahead, but the anticipation of these futures is sterile unless such an enterprise is accompanied by systematic, participatory, well-grounded, and comprehensive action plans. These action plans must, in turn, be based upon a process that helps all

concerned to think, plan and act differently and creatively, but ultimately in concert. Exploring the irresistible forces of complexity, uncertainty and change in such a rigorous, yet imaginative, manner calls for a very special methodology to aid decision-makers in their task of framing and executing robust, yet flexible, policy measures. The generic field of 'futures studies', with the particular method of the 'prospective process', through the associated technique of 'scenario thinking', is championed in this paper as just such a methodology. One well-suited, moreover, to addressing the challenge of how changing advances in technology, urban morphology, and good old-fashioned town planning can best be explored and exploited in strategic planning and management for the built and human environment.

The core issues most significantly impacting upon the built and human environment in the future, and the way in which it contributes to society and the economy as a whole, can be summarised as follows:

- Promote 'smart' environments
- Improve health and security
- Invest in people
- Improve existing built facilities
- Exploit global competitiveness
- Embrace sustainability
- Increase investment returns
- Plan ahead

Because the key to the future lies in achieving a holistic and integrated approach throughout the entire urban formation process, these issues, and the policies framed to address them, cannot be viewed in isolation, or with certainty: it requires a collaborative, imaginative and flexible response from every level of the industry, not just larger companies and enlightened thinkers. The 'prospective' provides this.

The Drivers of Change

If we are to get a vision of the built and human environment in the future, it is first necessary to gain a vision of society in the future. This, in turn, requires an understanding of the various forces – cultural, demographic, economic, environmental, governmental and technological – that are driving change. From these, various issues and trends at differing scales can be discerned that affect the quality, quantity and location of built infrastructural needs.

It is not the purpose of this paper to examine the driving forces of change in any detail, but to demonstrate that there is a dynamic which is dramatically reshaping the way we live, and the world around us, some of the following factors are worthy of consideration [IPTS, 2000].

Societally there are a set of value-changes which are contributing significantly to transformations in society. These are not always easy to quantify, but are nonetheless reflected very explicitly in some statistics such as rates of marriage, divorce, changing patterns of beliefs and religious practices, barometer surveys of aspirations and personal fulfilment objectives, as well as changing leisure and past-time pursuits.

Demographically the world's population is growing, moving and getting older. For the developed world there is the onset of stabilization in population size and the ageing of the population, especially the 'active' population. In the developing world there is the surge in numbers of young people in crowded cities casting envious eyes at standards they can never hope to attain. Then there is the worldwide unpredictability of migration and the intermixing of peoples with different backgrounds and cultures.

Economically the globalization of markets and business operations, of capital and investment flows, hyper-competition, and rapid technological progress, impact heavily on the world of work – increasing job flexibility and precariousness, skills obsolescence and unemployment – with knock–on effects on lifestyles and social conditions.

Environmentally there is still a tendency to underestimate environmental problems, under-appreciate their complexity, and postpone timely action. The notion of sustainability, however, has been introduced as a means of addressing the globality of these elements and a growing acceptance that a balance between concern for the environment and concern for the economy must be struck. Nevertheless, the rise of environmentalism is inexorable.

Governmentally the degree of direct influence that governments exercise over peoples' actions, social problems, economic performance and corporate power will lessen. Power will pass upwards to supra-national bodies and downwards to subsidiary authorities at regional, federal, provincial, state or city level. Fiscal and monetary policy will increasingly be determined by the world's financial markets. Free trade agreements, formal and informal, will limit the scope for governments to control domestic markets. And multi-national corporations will continue to exercise greater influence over business investment decisions.

Technologically the two key forces that will drive change are information and communications technologies [ICTs] and life science technologies. Interesting and powerful technological opportunities will also come from the convergence of these two families of technologies [bioinformatics, DNA chips, prosthetics] and their integration with other technology groups, especially smart materials. In addition, complex technology systems such as energy, transport and clean technologies are fast becoming areas in which there is increased use of hybrid technology systems. Interdisciplinary skills, therefore, will be crucial.

All in all, we are moving towards a Mosaic Society that is characterised by a high differentiation and sometimes fragmentation of the familiar features and institutions of society, the way we work and the way we live [*ibid*]. This requires a serious prospective analysis of the many cross-impacts that ensue as a critical input to the policy debates in all sectors, and at all levels. For the human and built environment more specific drivers of change have been identified as follows:

- Demographics, population change and ageing.
- Climate change, sustainability, environmental pressures.
- Urbanisation, growth of cities, transportation.
- People and quality of life.
- New materials and technologies.
- Vulnerability and security.
- Globalisation of economics and business.
- Information, knowledge and communication.
- Governance, legislation and government intervention.

Futures Thinking and Strategic Planning

The focus of this paper, and that of the prospective process through scenarios, is the capability of organisations to perceive creatively what is going on in their environments, to think imaginatively through what this means for them, and then demonstrate the readiness to act decisively upon this new knowledge. It has been called 'adaptive organisational learning' [van der Heijden, 2002], and argued that being skilful in this capacity constitutes the ultimate competitive advantage [de Geus, 1998]. Then importance of futures thinking is again highlighted

when the number of cities which actively 'compete' against each other (for City of Culture, Commonwealth Games, the Olympics and the like) are considered.

Planning has long meant conceiving of a desired future as well as the real means required to achieve it [Ackoff, 1970]. The concept of strategic planning was launched in the mid-1960's, notably by Ansoff [1965], to refer to the fact that corporate planning should take turbulence in the company's environment (often called strategic environment) into account much more and adapt its goals accordingly. Likewise, strategic management was promoted in the late 1960's and early 1970's in order to emphasize the conditions that enable structures and organisations to adapt to that increasingly turbulent world [Ansoff, 1976]. More pertinently for this paper, the concept of the 'strategic prospective' was developed by the French School in the 1990's, led by Michel Godet [2001], and based upon the earlier futures work of pioneers such as Bertrand de Jouvenal [1967] and Gaston Berger [1967], in which 'la prospective' is applied to strategic action and the corporate vision. In this way, 'strategic prospective' acts as a management tool from anticipation to action through appropriation. [Figure 1]. For, according to Godet [*op cit*], and following the ancient Greek concept, the interconnectivity between 'Logos' (thought, rationality, discourse), 'Epithumia' (desire in all its noble, and not so noble, aspects) and 'Ergo' (action or realisation), producing the marriage of passion and reason, of heart and mind, is the key to successful implementation and individual fulfillment.

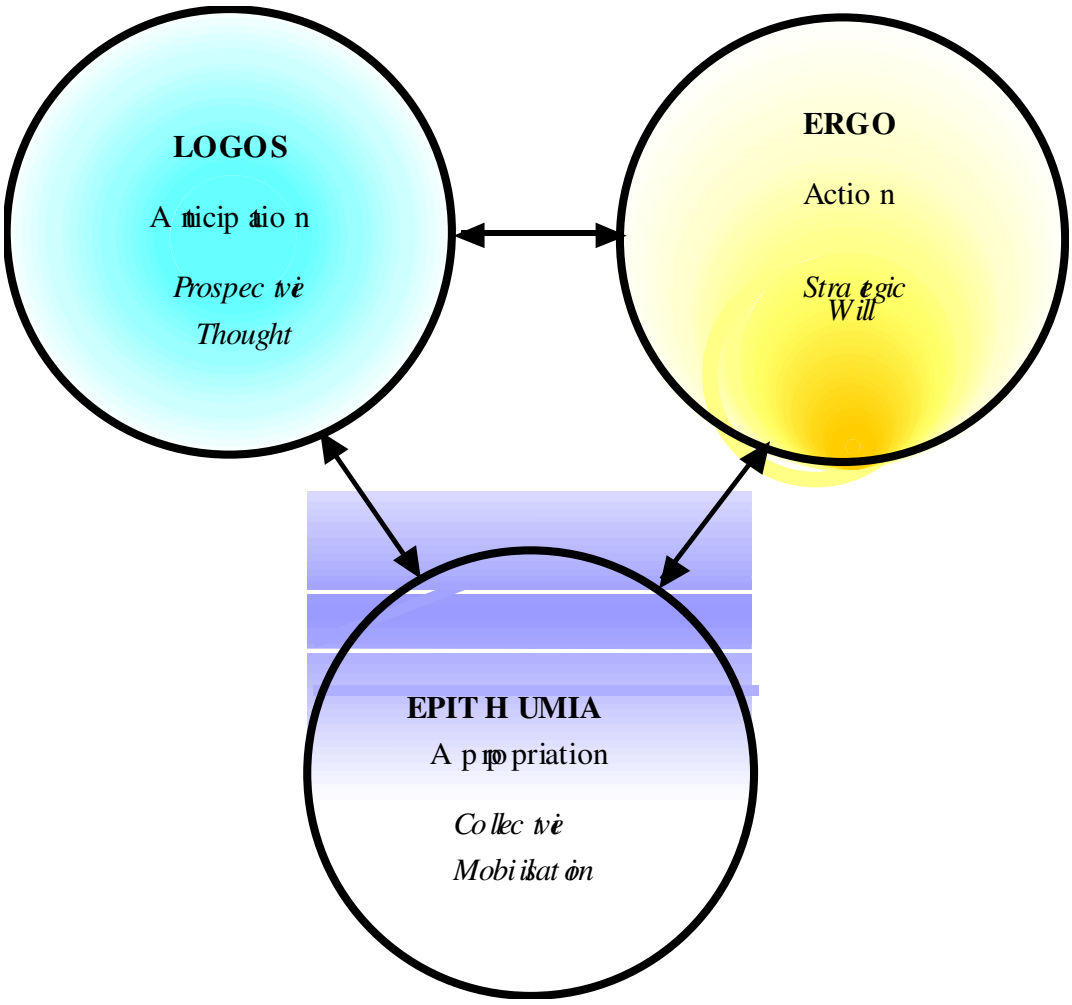

Figure 1: The Greek Triangle, Source: after Godet, M (2001) Creating Futures

It should be recognised that futures thinking through a prospective process using scenarios is linked inextricably with strategic planning and consequent organisational management. Good strategy, in fact, has been stated to be based on the following elements [van der Heijden, 1996]:

- Acknowledgement of aims, either through an external mandate, or through the organismic purpose of survival and self-development.
- Assessment of the organisation's characteristics, including its capacity to change.
- Assessment of the environment, current and future.
- Assessment of the fit between the two.
- Development of policies and, following from this, decisions and actions to improve the fit.

The prospective process through scenario thinking directly addresses all these five steps, but with an explicit attitude towards ambiguity and uncertainty.

It is important, however, to understand the relationship between the futures prospective process and the strategic planning process. Futures through prospective is a discipline with an intellectual domain and the tools, such as scenarios, to apply it. Planning is first and foremost a technique. Indeed, it is one of the tools or techniques that can be used in the prospective to implement a preferred future. Conceptually, moreover, prospective is a previous step to planning, so that strategic thinking should precede strategic planning. Planning, by definition, is to conceive an objective and the means to achieve it. It is less helpful when it comes to determining which is the best objective and how that objective can reasonably be attained. Planning, furthermore, will fall short of foreseeing the potential obstacles or pitfalls that might prevent the attainment of that desired future. This is because the prospective and planning have completely different theoretical approaches: the prospective wants to open the scope to look further into the future, and, in different mental contexts, to improve the chances of detecting all the conceivable variables and project them as far as possible: planning, on the contrary, aims to reduce and concentrate the scope, focusing efforts to converge in a concrete objective and place it near enough in the future so as to be quite sure of its accomplishment. This is probably why in the business world planning has a better image than futures through prospective.

It should also be appreciated that futures methods such as the prospective (or foresight) are different from long-range planning in at least three distinct ways.

- They recognise that the future will not be an extension of the past. Futures methods and techniques expect events that cause discontinuities to occur.
- There may be numerous possible futures. The future will be a function of various factors as well as various possible relationships among these factors.
- Innovation has the potential to accelerate the rate of change and to cause fundamental shifts in the nature of business and life.

Conventional planning techniques developed in a lineal and incremental world do not have the flexibility needed to address multi-faceted and rapidly paced change. They also fail to incorporate entrepreneurial forces that change what it takes for organisations to succeed and places to change. One leading management consultant has argued that in order to create a forward-focused organisation it is necessary to be committed to looking toward the horizon, championing breakthrough innovation, developing high-performance incentive systems, empowering people to do extraordinary things, supporting continuous improvement and fostering symbolic relationships [Harper, 2001]. A futures approach using the prospective process through scenario thinking facilitates this.

In advocating the adoption of the prospective process through scenario thinking it is worth pointing out that there is scarcely a major successful corporation in the business world that has not formally included some kind of futures dimension into its strategic planning process. Where this has been written-up, it has highlighted the fact that far from being 'fanciful', a futures based prospective approach has helped strategic planners and managers across all spheres of activity. The Shell experience is much quoted, but it is founded on a number of basic assumptions which are largely common sense (van der Heijden, 1996):

- Possessing sound strategies reduces the complexity of the task rather than adding to it.
- Discussing strategy is a natural part of any task, and not the exclusive domain of specialists.
- There is nothing unusually difficult in good strategy, based as it is on common sense thinking.
- Investing time in structuring the strategic debate will pay-off many times over in increased efficiency of dealing with the day-to-day issues to be faced.

Future methods, the prospective process, and scenario thinking all deal with how planners and managers can set out and negotiate a successful course into the future in the face of significant uncertainty.

PROSPECTIVE THROUGH SCENARIOS

Objectives

Scenarios come in two forms – exploratory and normative. Exploratory scenarios depict self-consistent future worlds that would emerge from the present through credible cause, effect and feedback developments, reaching an end-point that seems plausible. They are generally developed in sets that span a space thought to contain a likely future, but each scenario is in itself unlikely. Normative scenarios represent desirable future worlds. They are also self-consistent and employ credible cause, effect and feedback relationships to get from the present to the future state, but that future state represents a goal rather than happenstance. Like Voltaire's character Candide, normative scenarios search for "the best of all possible worlds" that can be achieved with reasonable policies [Glen & Gordon, 1998], and, unsurprisingly, 'la prospective' approach falls within this normative category.

Scenario thinking specifically tries to conceive all possible futures and to explore the paths leading to them in order to clarify present actions and their possible consequences. The objectives of the scenario approach are described as follows [Godet, 1991].

- To ***detect*** the priority issues for study (key variables) by identifying relationships between the variables of the specific system under study through systematic analysis.
- To ***determine*** the main actors and their strategies, and the means at their disposal for bringing their projects to a successful conclusion.
- To ***describe,*** in the form of scenarios, the development of the system under study, by taking into account the most probable evolutionary path of the key variables and by using sets of assumptions about the behaviour of the various actors.

To coin a favourite phrase of the authors', the prospective through scenario process is about "future proofing present policy". In Godet's words [*op cit* , 2001]: *"Action is meaningless without a goal. Only an approach like scenario building. . . can point the way to action while giving it*

meaning and direction. Similarly scenario building cannot readily be dissociated from strategy, hence the term 'strategic scenario planning."

The Process

Though there are many variations on a theme, the stages shown in Figure 2 [below] are typical of a prospective process through scenarios. Given the restricted nature of this text, all that is possible is a brief note on each stage highlighting some of the techniques employed and issues that emerge.

1. Set the Strategic Question

This might be a general examination of the position of an organisation within its external environment, the more particular identification of a key gap in an organisation's knowledge, or the interrogation of a very specific business idea. Critical to this stage, and central to the whole prospective process, is the holding of 'strategic conversations' with key actors in and around the organisation and its sector of society. The purpose, process, participants, preparation, procedure and practicalities of such strategic conversations are discussed elsewhere [Ratcliffe, 2002], suffice to state that institutions and organisations are essentially networks of personal interconnections, and those interconnections are themselves mainly based on conversation. In enabling complex adaptive organisations to look ahead to the future, conversation in one form or another, becomes a key component of strategic planning. Strategic conversations are fast emerging as a central feature of the scenario process, and scenario exercises, in turn, are becoming a prime tool of strategic planning.

2. Identify the Driving Forces of Change

In practice, the driving forces of change are identified by: continuous monitoring through 'horizon' or 'environmental' scanning; in-depth interviews with acknowledged experts; targeted questionnaire surveys; and brainstorming workshops at the start of the prospective process. They are usually categorised by a technique like the 'Six Sector Approach' [Societal, Demographic, Economic, Environmental, Governance, Technological], favoured by the author, or similar such as PESTE or STEEP. Following popular parlance that 'everything affects everything else', one of the most important tasks is to investigate the interrelationship between various forces. Perhaps the two most challenging chores, however, are to ensure that sufficient divergent thinking takes place on the one hand, whilst common clichés are hunted down on the other. Ultimately, it is the driving forces of change that shape and propel the story lines described in a particular plot for a scenario. It is almost inconceivable to consider a scenario that does not incorporate major drivers from most, if not all, of the six sectors depicted above.

3. Determine the Main Issues and Trends

It has been found, in identifying the issues and trends relevant to the strategic question posed by the client organisation, that even the most radical of forecasts are usually too conservative in the long-term, and that some organisations unintentionally foster tunnel vision by paying too much attention to current trends, simply projecting the past forwards, and ignoring the unexpected [Shoemaker, 1998].

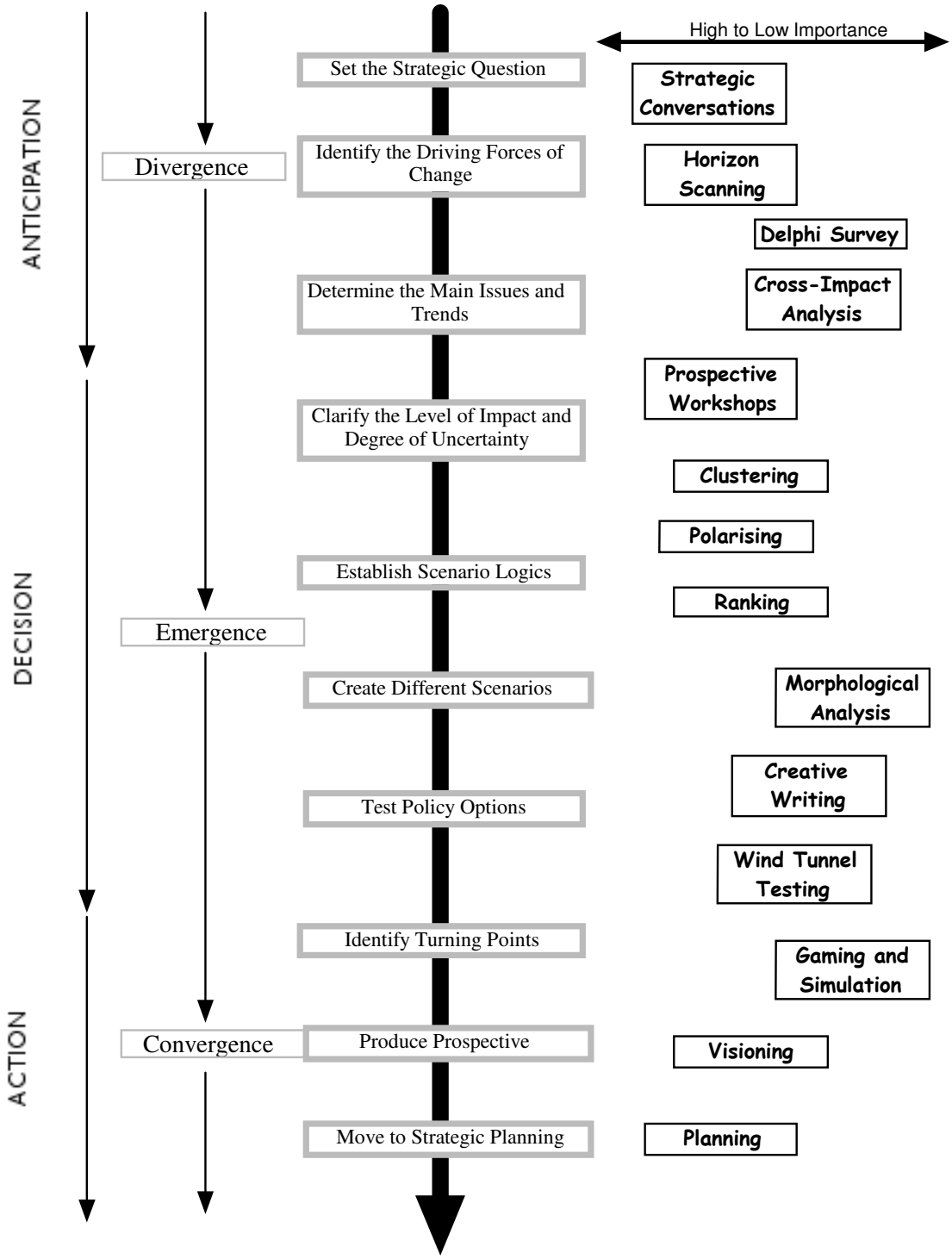

Figure 2: "Prospective through Scenarios'
Source: Ratcliffe and Sirr (2003) The Futures Academy

The key elements of 'future worlds' are 'predetermined events' and 'critical uncertainties' [Wack, 1985]. Predetermined events are those forces, issues and trends that are already evident and are unlikely to vary significantly in any of the scenarios. They might be slow changing phenomena, constrained situations, trends already in the pipeline or seemingly inevitable collisions. These issues and trends should be reflected, implicitly or explicitly, in each of the scenario plots. Critical uncertainties are the forces, issues and trends which are most likely to define or significantly change the nature or direction of the scenarios. They are contributing factors that will have material consequences that cannot yet be measured. For the purposes of constructing future worlds it is important to focus on a relatively small number of critical uncertainties that could fundamentally alter the environment. A critical part of this stage is the process of clustering whereby the number of forces, issues and trends are grouped into a manageable number of high-level concepts.

4. Clarify the Level of Impact and Degree of Uncertainty

A common approach towards determining the key areas of critical uncertainty that will form the central themes of the developing prospective is to rank the issues and trends according to their:

- Level of impact upon the strategic question.
- Degree of uncertainty (likelihood) of occurring within the given timeframe.

Some exercises then aim to identify the two general areas believed to have the highest impact upon the strategic question and the highest level of uncertainty over the potential outcome so that a quadrant matrix can be constructed using the two areas identified as axes forming dimensions, within which four possible scenarios can be built. This again involves clustering as a temporary means of handling the complexity of the 'bigger picture' encapsulated by the full set of forces, issues and trends and polar outcomes. Later, specific issues and outcomes can be reintroduced for actually constructing the scenarios.

5. Establish Scenario Logics

This stage lies at the heart of the prospective process. Here is established a logical rationale and structure for the scenarios, and it is when intuition, insight and creativity play the greatest role. The logics provide the themes for a scenario's plot or story. They connect the present to a specific scenario end-state or outcome, for any 'future history' must make sense 'today'. Put another way, they are the organising principles around which the scenarios are structured. They focus on the critical or pivotal uncertainties for the organisation concerned and present alternative theories of the way the world might work. These alternative future states are logical in the sense that a persuasive and rational case can be made for each of the outcomes.

These logics can be articulated and elaborated in a number of different ways. Most usually, by either laying-out in simple narrative form, or by using the 2 x 2 matrix approach, or by depicting the logics and their interactions or relationships diagrammatically showing causal connections. Figure 3 [below] shows various approaches to devising alternative scenario logics.

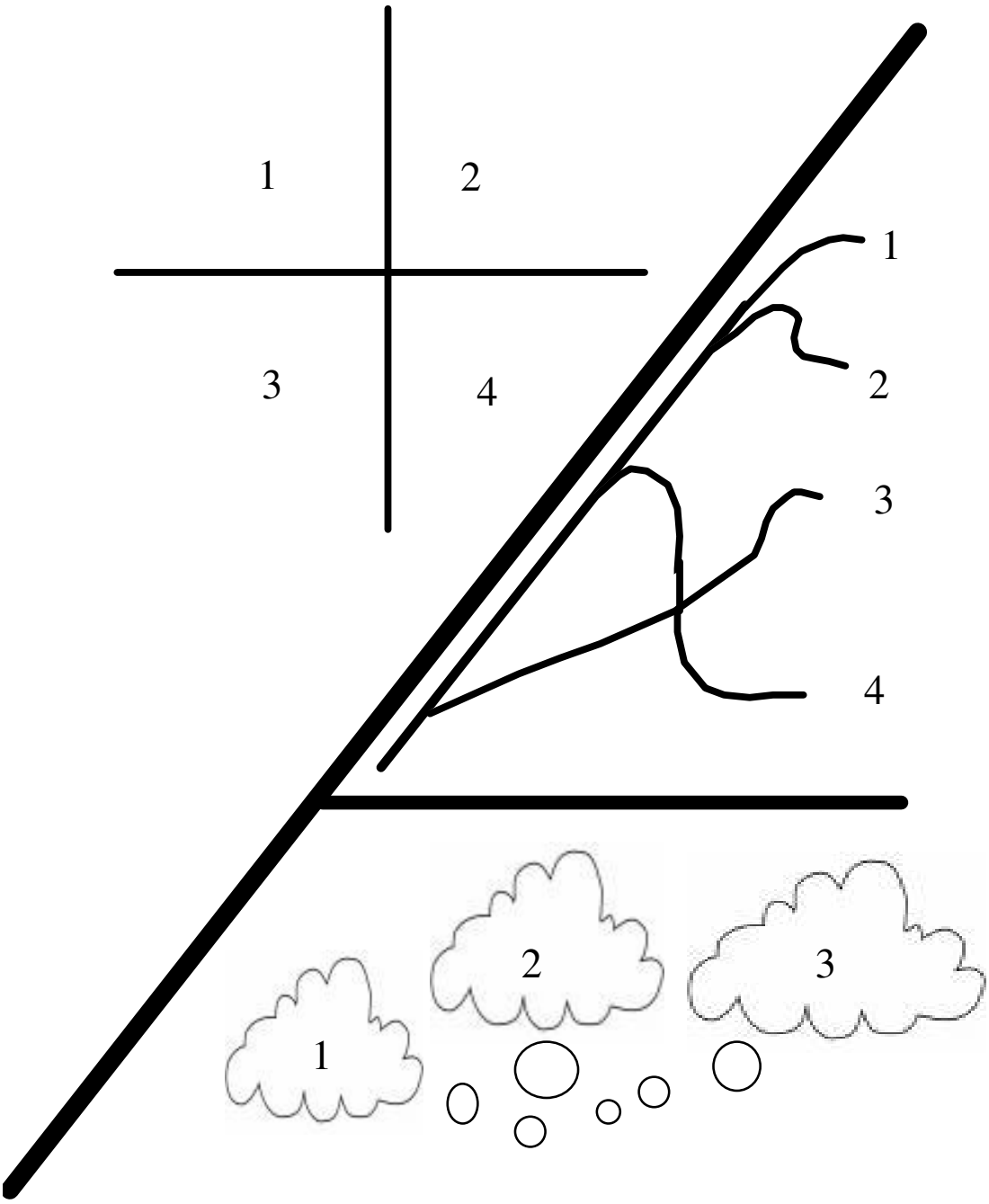

Figure 3: Alternative Scenario Logics
Source: Outsights Futures Consultancy London

In corporate style scenarios the number of logics is normally restricted to five or six, but in broader more complex public policy kinds of scenario exercise the number may well be ten or a dozen.

6. Create Different Scenarios

There is no single right way to create scenarios. Different circumstances, timescales, organisational cultures, facilitation methods and available resources will dictate the use of one or another approaches for developing a few alternative pictures of the future. An inductive approach, conducting an open-ended debate aimed at reaching consensus, can work well in situations where there is really only one key variable that drives the difference between a few scenarios – price of a product or service at some future date. This is not normally the case when the built and human environment are considered.

In public policy oriented scenarios, where there are many key variables, a deductive approach, using simple principles of prioritization to construct a quadrant matrix based on the two most critical uncertainties is preferred.

The following criteria are suggested as helpful in constructing scenarios. They should each be:

Plausible	-	*credibly capable of happening*
Robust	-	*internally consistent and coherently defensible*
Divergent	-	*structurally differentiated, not simply variations on the same theme*
Challenging	-	*testing the conventional wisdom of the organisation and providing novelty of thought.*
Useful	-	*contributing specific insights into the future that help tackle the strategic question.*

Each scenario should also have: a beginning, a middle, and an end; an approximate time-line; key events that make it happen; early indicators of change; and an evocative title. Elaborating or fleshing-out the scenario can best be accomplished by: returning to the driving forces, issues and trends; inventing an 'emblematic event' that symbolises the scenario; talking about the end-state; composing a story-line that is dramatic, forceful, logical and plausible; anchoring the scenario in the past, with the future emerging from the past and the present in a seamless way; eliciting a 'gestalt', an integrated structure that can be understood as a whole rather than as disconnected parts; letting the imagination run riot – control can come later!

7. Test Policy Options

This step poses the fundamental question of how the task, issue or decision identified as the strategic question looks in the light of the scenarios constructed. What are the strategic implications? How does the decision fit into each scenario? What options are suggested? Are any particular vulnerabilities exposed? Is the decision or strategy robust enough? Does it seem to work in only one scenario and thus qualify as high risk? How can the strategy or decision be adapted to make it more robust? In this way, what is sometimes called the 'Wind Tunnel Test', enables decision-makers turn policy options into strategy through adjustment in scenarios.

Indeed, the central challenge of this part of the process is to identify a set of robust core strategies that are capable of adoption in a wide variety of alternative possible futures. In addition to this is the need to develop contingent strategies to combat the 'unthinkable' or 'unpredictable' future. The core strategy alone is not normally sufficient, and those contingent strategies will be necessary to face such eventualities as significant legislative changes, momentous economic fluctuation or dramatic political swings.

It should be stressed, however, that the development of an effective and robust strategic prospective requires far more than scenarios alone. Additional elements include a strategic vision, clear goals and objectives, competitive analysis and an assessment of core competencies. This stage in the prospective process does, however, permit the development of some vital strategic insights, for even scenarios that seem familiar can spring surprises.

8. Identify Turning Points

A major product from the interpretation and testing of policy options should be the ability to translate movements of a few key indicators into an orderly set of signposts or triggers which identify turning points having serious implications for the field in question. The logical coherence that was built into the scenarios should allow logical consequences of leading indicators to be drawn out of them [Schwartz, 1998].

From the authors' experience, however, this is probably the stage most fraught with difficulty. Nevertheless, it is also the stage which if properly conducted can pay the highest dividend. Sometimes the signals of impending change can be relatively weak, or the turning points to alternative futures pretty obscure. Once the different scenarios have been fleshed-out and their strategic policy implications determined, then it is worth spending some considerable time, and applying some appreciable imagination on identifying a few material indicators or triggers to monitor in a continuing way. Developing this collective intelligence is really where efficient 'competitive advantage' or effective 'contingency planning' really lie.

9. Produce the 'Prospective'

Following the adage [Handy, 1989]: *"The future is not inevitable. We can influence it if we know what we want it to be",* the 'prospective' approach is becoming more popularly applied across Europe in a variety of strategic settings. It is a quintessentially 'normative' method in that it concludes by describing a single preferred future. In the French context, from whence it originates, the prospective refers to a much wider exploration and much longer time horizon than conventional strategic planning. It comprises, moreover, not only the study of the future, and an evaluation of alternative outcomes against given policy decisions, but also the will to influence the future and shape it according to society's wishes. It is similar to 'foresighting', more familiar in the Anglophone world, but can be contrasted as: foresight would be the capacity to hear, but prospective would refer to the proficiency to listen [Serra, 2001]. Put another way, prospective covers the concepts of 'preactivity' (understanding) and 'proactivity' (influencing), whereas foresight concerns itself with 'preactivity', but the idea of 'proactivity' is missing [Godet, 2001]. Thus, unlike many futures-thinking exercises which might have motivated large numbers of people in a rich, collective process, the prospective takes this a stage further by proposing a path towards real, implemented action.

10. Move to Strategic Planning

Traditionally, strategic thinking through scenarios has been separated from strategic planning, and quite deliberately so. This has often been a strength, in that is has allowed creative exploration untrammelled by the need to take action. But is has also been a weakness, because it has isolated imaginative thinking and curtailed continuing 'future proofing'. In one way, the prospective provides a bridge between strategic thinking and strategic planning across which ideas and actions can continue to pass. In another, it builds a kind of 'scaffolding' within which a strategic plan can be constructed and refurbished.

In terms of 'making-it-happen', the prospective process through scenarios contributes to strategic planning and management by [van der Heijden, 2002]:

- creating wide awareness of the environmental imperative requiring change;
- guiding the formation of operational plans;
- enlisting the people in the organisation who have the power to act; and
- establishing coherence in management action through development of a shared view.

PUTTING 'FUTURES' INTO THE FUTURES ACADEMY

So, does this theory translate into practice? At the DIT we have been running futures exercises for over a decade, and on a more formalised basis in the last 18 months with the creation of The Futures Academy. Theory is beginning to become practice, and ultimately policy. We see the fruits of our futures labours through the actions, long-term strategies and policies of several of our clients, some of whom include:

- Dublin Chamber of Commerce;
- Department of the Tanaiste (Deputy Prime Minister)
- Carlow County Council

The translation of futures thinking into strategic planning in Dublin has been an enlightening process, with the overall result being a degree of creative thinking and imagination being used to shape and re-shape the urban environment. Stakeholders who have participated in our futures workshops have not been solely those charged by legislation with altering our built environment, but, arguably more important, have also been those whose actions have a direct and indirect affect on our built and human surroundings. Visioning exercises have been conducted in order to ascertain exactly what kind of Dublin we want to see in 2020 or 2025, and then to plan how we are going to get there. This final aspect of the process is the key to the success of futures thinking - the results must be implemented into action, where the benefits can be seen by all.

CONCLUSION

Some key themes of major importance for the future of the built and human environment have been identified through these exercises. Recurring themes raised issues such as the following:

- Creating sustainable communities
- Healthy environments
- Excellence in building
- Our built heritage
- Imagining the future
- Building communities
- High level of innovation
- Inclusivity in decision-making
- Design for all

Most of all, however, the future of the built and human environment is about:

- Visualisation – in order to achieve a preferred future, it is important to be able to imagine it. Rushing towards a hazy ideal is wasteful of energy and resources, and to that end, the visual conceptualisation of the future in which we wish to live and work is vital.
- Intelligence – smart use of our resources, time and personnel paves the way to achieving our preferred future.
- Communications - the realisation of our goals for the future of the built and human environment is only of value if all are willing to support and encourage the process. Effective communication of ideas between, and from, people and organizations is strategically crucial in creating the broadest base from which to achieve the best future.

- Integration – a preferred future which is exclusive and selective should not form the basis of a 'prospective'. Selectivity leads to the creation of a preferred future for some, but not for all. Integration of people and ideas at all stages and all levels is a key factor in determining the long-term success or failure of the built and human environment.

These are complex fields of endeavour but the prospective process through scenario thinking provides a means of approaching complex problems with simple tools so as to ensure that the complexity stems from the problem and not the tool. Twin concepts are central to the process – the need initially to recognise a range of alternative futures, and the desire ultimately to construct a single preferred future. The process fosters innovation and promotes thinking 'outside-the-box'. It can be used to resolve organisational conflicts and confusions by stimulating strategic conversation. Above all, perhaps, the methodology can be incorporated into a wider strategic and organisational framework, producing that increasingly necessary competitive advantage for cities so essential for survival. Remembering, the while, the Darwinian dictum:

"It is not the strong who survive but the most adaptable"

REFERENCES

Ackoff, R. 1970, *Concept of Corporate Planning,* John Wiley, New York.
Ansoff, I 1965, *Corporate Strategy,* Mc Graw-Hill, New York.
Ansoff, I 1976, *From Strategic Planning to Strategic Management,* John Wiley, New York.
Berger, G. 1967, *Étapes de la Prospective,* PUF, Paris.
Construct IT. 1997, *"The Armathwaite Initiative".* University of Salford.
de Geus, A. 1988, "*Planning as Learning",* Harvard Business Review, 66(2), 70-74
Glenn, J. and T. Gordon 1998, *1998 State of the Future,* AC/UNA Millenium Project, Washington.
Godet, M. 1991, *From Anticipation to Action,* UNESCO, Paris.
Godet, M. 2001, *Creating Futures,* Economica, London.
Handy, C. 1989, *The Age of Unreason,* Arrow, London.
Harper, S. 2001, *The Forward Looking Organisation,* AMACOM, New York.
van der Heijden, K. 2002, *The Sixth Sense,* John Wiley, Chichester, UK.
IPTS, 2000, *The IPTS Future Project Synthesis Report,* European Commission, Joint Research Centre, Seville, Spain.
de Jouvenal, B. 1967, *The Art of Conjecture,* Basic Books, New York.
Ratcliffe, J. 2002, *"Scenario Planning : Strategic Interviews and Conversations",* Foresight, Vol. 4, No. 1, 19-30.
Schwartz, P. 1998, *The Art of the Long View,* John Wiley, Chicester, (4th ed).
Serra, J 2001, "*Territorial Foresight : More than Planning, Less than Prospective",* Paper presented at Conference Creating and Applying Vision in the Regions, Dublin, December.
Shoemaker, P 1998, "*Twenty Common Pitfalls in Scenario Planning",* Fahey, L. and R. Randal (eds), 1998, *Learning from the Future*, John Wiley, Toronto.
Wack, P. 1985, "*The Gentle Art of Reperceiving",* Harvard Business Review, September/October and November/December.