

VALUE MANAGEMENT: EXPANDING THE METHODOLOGY THROUGH FUTURES TECHNIQUES

Dr. David R. Stevens
Strategic Thinking Pty Ltd
Australia

ABSTRACT

Increasingly value management is expanding its traditional range of techniques which underpin the job plan methodology. There are three reasons for this.

- i) Practitioners anticipating the ever expanding needs of clients;
- ii) The highly competitive nature of value management delivery, requiring practitioners to constantly create "unique selling points";
- iii) The job plan always was the basis of common sense group problem solving and easily absorbs new techniques.

For all three reasons above, at least one consulting organisation has begun to incorporate futures techniques at the strategic level of consideration of major projects. Furthermore, at the tactical level, when carrying out value engineering exercises, simplified aspects of futures techniques can be used to test whether appropriate decisions are being made at a detailed design stage.

Futures information gathering techniques include passive and active environmental scanning. Trend analysis both looks at understanding existing trends and then seeks to extrapolate those trends into the future.

Techniques associated with forecasting include the future wheel and future webs and the cross impact matrix.

Perhaps one of the best known futures techniques is scenario planning. This starts with the identifying of focal issues, selecting scenario logics, fleshing out the scenarios, considering the implications of several scenarios and finally selecting leading indicators and

selected sign posts.

The imaging workshop is a way in which new possibilities for action and change can be carried out. In the workshop a specific issue is focused upon and situated at a specific future time. Participants become a part of that future and develop as clearly as possible a description of aspects of that future. Images are described and nurtured and explored, teasing out central themes. Consequences of the future are examined. Finally this future is evaluated as if it is now the present. The main features of that future are then translated back to the real present to understand the implications.

Can some of these futures techniques be successfully incorporated into the value management plan.

The Job Plan

Empirical evidence would suggest that the job plan, which is the methodology that drives value management, is little more than a common sense structure that holds effective group decision making together. In fact the basics of the job plan can be traced back thousands of years. I frequently cite the ethos, pathos and logos aspects of group problem solving (G.P.S.) at the introduction to my value management workshops. Steven Covey uses these three words in *The Seven Habits of Highly Effective People: Restoring the Characters Ethic*, (Business Library, Melbourne, 1991). In his book he talks about Greek philosophy which embodied the three words, *Ethos*, *Pathos* and *Logos*. He said that *Ethos* was to do with personal credibility and the faith people have in one's integrity. *Pathos* was to do with empathy and feeling and the ability of individuals

to align themselves emotionally with another person when communicating. *Logos* he saw as the reasoning part of the presentation or decision-making process.

Ethos

To understand ethos we also need to understand what group dynamics is. Group dynamics is very much the vibrancy that emanates from a group through the constant shifting of power bases in the group as a result of the statements made, comments offered and decisions arrived at by that group.

My interpretation of the term 'ethos' is the 'selection of that group of people who ultimately give rise to the best possible decision within the constraints of the resources they have available within their group'. 'Ethos' relates roughly to the 'ethics' of selecting the right people in the first place to work in the problem-solving group. This of course has significant implications. If, for example, a group of people are selected to be involved in a group problem-solving situation and they do not have the intellectual, technical or the creative resources, or indeed the 'ethical characteristics required', they will never realise a level of decision making that will promise the best possible decisions on that particular topic. Furthermore, a wrongly selected group of participants in 'a group problem-solving situation might render the decision that ultimately comes from that group as having little credibility to outsiders. Indeed the whole notion of the right selection of participants and the right number of participants for the effective exploitation of group dynamics must ultimately lead to a solution that is so influential, outsiders would not really challenge the decision made by that group.

Thus there are three characteristics associated with people who are selected as participants in group problem solving that correspond to ethos:

- (i) They have the technical, intellectual, creative, experiential and other resources necessary to tackle the problem effectively.
- (ii) They have credibility such that their decision making, being representative of people who are not present in the group problem-solving session, is of such influence that those people who are not present will accept the decisions of that group without further debate.
- (iii) The participants must be truly representative of all stakeholders who will ultimately be affected by decisions made by the group.

Pathos

The second stage in group decision making is what the Greeks called 'pathos'. To understand pathos we need to understand what is meant by the term 'stakeholder'. The stakeholder is an individual who has a vested interest in the outcome of a particular problem being addressed by a group. Such individuals, while representing their own needs, might also be representative of others who think similarly but who are not actually present at the GPS session. Hence stakeholder representatives must have 'pathos'. It is generally accepted that stakeholders also have responsibilities with respect to the outcome.

Stakeholders can also be internal or external. Internal stakeholders tend to be those people who are directly working on solutions associated with the problem. For example an internal stakeholder might be one of the engineers or another member of the project team who will ultimately build a bridge across a river. The type or the location of the river crossing might be the reason for the group problem-solving session. An external stakeholder would be a person who will be affected by the ultimate style or location of the bridge. For example, external stakeholders could include people who use the river for fishing and boating (pollution might run off the

bridge and affect fishing; the location of the bridge might be such that it restricts high-masted boats, and so on).

Pathos is very important for this is where the suspension of judgment takes place until all 'stakeholders' put forward their views, whether these views are based on prejudice, fact or mere speculation. The important thing: is for each individual member of the GPS session to be able to appreciate the values, the perspective, the differing points of view of every other member of the group.

Logos

This is when, after discussion, debate and consideration, a final logical decision or conclusion is arrived at within the context of the group that is involved in the problem solving.

People could draw parallels between this three-stage approach of the Greeks and other attempts over many thousands of years to come to grips with the best forms, or the most just forms, of decision making. Take, for example, our judicial system. There is the right selection (hopefully) of the group problem solvers (ethos - the jury); suspension of final decisions until all the stakeholders' points of view are put forward (pathos - Prosecution, defence, evidence); then finally a decision is made (logos - the verdict of the jury).

Unfortunately in business the tendency is to jump straight from the realisation that there is a problem to an impulsive 'logos' or solution. Missing out the ethos and pathos can cost billions of dollars, loss of government, loss of a business or other catastrophes. The stakes are high!

An expanded methodology

What is missing from this simple yet potentially profound approach to group problem solving? Two steps that seem obvious and make up the "job plan":

- (i) structured and focused creativity
- (ii) idea evaluation.

It is worth emphasising that these are the two crucial steps that distinguish our modern GPS methodologies from the basic three-stage approach just discussed.

Increasingly value management is expanding its traditional range of techniques which underpin the job plan methodology. There are three reasons for this.

- 1) Practitioners anticipating the ever expanding needs of clients;
- 2) The highly competitive nature of value management delivery requiring practitioners to constantly create "unique selling points";
- 3) The job plan always was the basis of common sense group problem solving and easily absorbs new techniques.

For all three reasons above, at least one consulting organisation has begun to incorporate futures techniques at the strategic level of consideration of major projects. Furthermore, at the tactical level, when carrying out value engineering exercises, simplified aspects of futures techniques can be used to test whether appropriate decisions are being made at a detailed design stage.

Futures Techniques

One of the compounding factors in any project is the notion of the "present". How do we define the present? Is the present five seconds, five micro-seconds, or even shorter. Elise Boulding suggests we have a 200 year present, that is we look back 100 years and forward 100 years. This would put a new perspective on many projects and the ways in which they should be carried out.

Is the notion "now" the same for the developer as for the contractor; or for the building user as for the government client who bases their business in the building. Indeed a careful examination of the con-

cept of 'now' from the perspective of differing stakeholders could well cast new light on the notion of functionality.

My first question then is, should the notion or the definition of "now" or indeed the whole notion of time underline any notion of functionality when doing functional analysis in value engineering exercises.

Moving on to other techniques that could be borrowed from futures methodology that could help to expand the notion of the job plan, let us look at trend analysis.

Trend analysis both looks at understanding existing trends and then seeks to extrapolate those trends into the future. Trend analysis asks four key questions:

- i) Can the causes of the trends be clearly identified?
- ii) Is the trend undesirable or desirable?
- iii) Will the causes of the trend change?
- iv) Is there any evidence that the trend is likely to reach saturation?

Techniques associated with "forecasting" include the future wheel and future webs and the cross impact matrix.

The futures wheel or web is a simple tool

which permits an almost unlimited range of speculation about future possibilities of a certain context.

To draw a futures wheel or web, participants think of a future possibility or event which interests them. This concept must describe something which has tangible consequences rather than an idea, judgment or a vague notion. The event or possibility is written down in the centre of a large piece of paper. Participants next consider what immediate consequences are implied. These are arranged in a circular pattern around the original assumption. Then each of these consequences are examined in turn. If this "... then what? Each "first order" consequence can be seen to give rise of consequences of its own. These are set out clearly. Participants then go onto second and third order consequences. They continue this process for as long as they like until they run out of space or this produces a pattern of possible outcomes originating with the first assumption.

When future wheels don't seem successful it is usually because the originators do not choose a real world possibility.

There are certain aspects associated with the futures wheel that need to be considered.

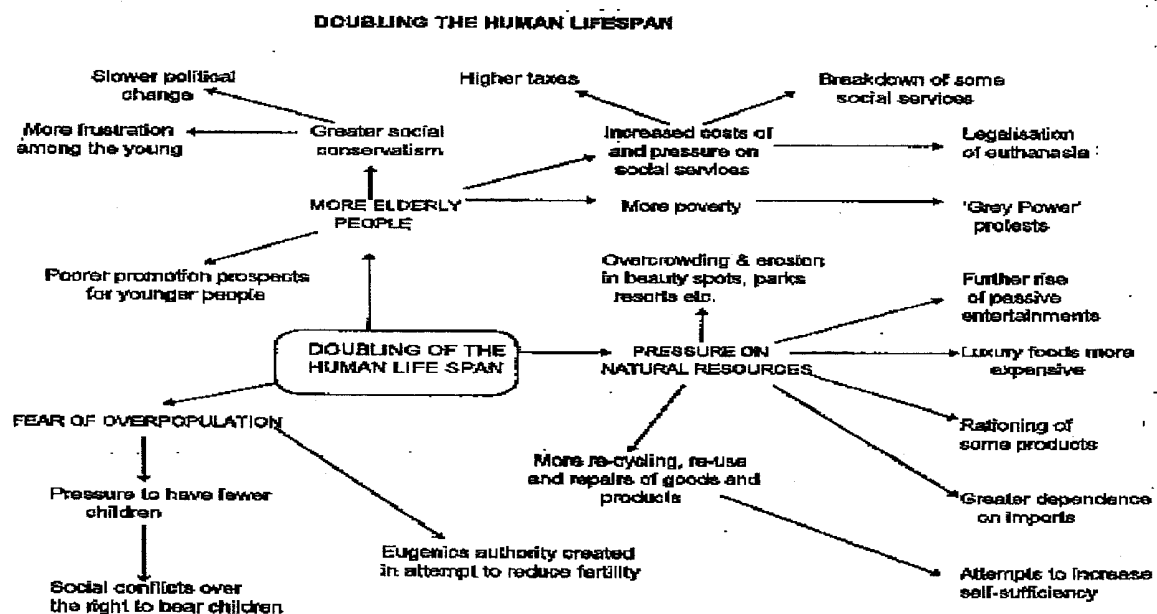


Figure 1: Doubling the Human Life span

- i) It is a exploratory tool, there are no right or wrong answers;
- ii) It can be used at any level of sophistication;
- iii) The wheel can be re-run according to different assumption (ie., negative or positive aspects of the topic);
- iv) If the wheel seems unproductive the focus or assumptions can be changed;
- v) The exercise promotes a high level of dialogue and negotiation (usually between partners).

Figure 1 gives an example of a futures wheel on "doubling the human lifespan".

In the Cross Impact Matrix a list of future events, which can be derived from the outer edges of the future wheel, is written down vertically and horizontally as a matrix.

Each interaction is looked at in turn and then scored. Participants decide if one factor has a positive, negative or neutral effect on the other. A plus sign, a minus

sign or zero sign is put in the appropriate box. When the matrix has been completed the results are totaled and analysed.

In Figure 2, slow political changes accumulated 6 positive signs and therefore reveals a dominant factor.

Part of the value of the cross impact matrix is the way that a framework is provided for the analysis of possibilities and the 'teasing out' of assumptions.

Perhaps one of the best known futures techniques is scenario planning. This starts with the identifying of focal issues, then selecting scenario logics, fleshing out the scenarios, considering the implications of several scenarios and finally selecting leading indicators and selected sign posts.

The factors associated with putting together scenarios are listed over the page.

	Slow Political Change	High Taxes	Rationing	Attempts to Increase self-sufficiency	Conflicts Over Child-Bearing	Totals
Slow Political Change		0	+	+	+	+++
High Taxes	+		-	-	+	++
Rationing	+	+		-	0	++
Attempts to Increase Self-sufficiency	-	+	+		+	+++
Conflicts Over Child-Bearing	+	0	0	0		+
Totals	+++	++	++	+	+++	

- = Negative impact (inhibiting or less likely); 0 = No significant impact; + = Positive impact (accelerating or more likely);

Figure 2: Cross Impact Matrix

An accumulation of + signs identifies major change factors. Here, slower political change (6 + signs) is revealed as a dominant factor and therefore worthy of further investigation. Differences of opinion about the sign in each square can reveal different values and assumptions. These are 'brought out into the open' in this exercise and hence made accessible to understanding and debate.

Information Gathering

1. Target specific research topics to which there should be constant attention:
 - a) Science and technology - keeping track of biotechnology, computer science, ecology, engineering;
 - b) Perception sharing - Identify public perceptions especially where it is changing. Changing public beliefs, pivot the direction of history;
 - c) Music types - represents public feeling and is a window to the future;
 - d) Fringes - scenario research looks for new knowledge developing at the fringes.
2. Where to Look:
 - a) Remarkable People - Remember Ethos;
 - b) Read outside your immediate specialty;
 - c) Filters - every good magazine is a filter. Look to specific journals. The Economist is the best single source of information in the world;
 - d) Network Sensibilities - obviously using networks wherever possible to check out global business network and in particular learning conferences.

Driving Forces and Pre-determined Elements

1. Look for the driving forces - these have specific categories including society, technology, economics, politics and environment.
2. Predetermined Elements
After identifying the driving forces one must uncover the predetermined elements. These are elements that we know. For example:

- i) Slow changing phenomena such as growth or population, building of physical infrastructure;
- ii) Constrained situations e.g. the Japanese must maintain a positive trade balance because they don't have the resources to look after themselves;
- iii) In the pipeline today, e.g. the world will have a population of 2 billion teenagers by the year 2010;
- iv) Inevitable collisions, e.g. American public refusal to provide government with higher taxes but also refusing to forego the public benefits.

Critical Uncertainty

These are intimately related to predetermined elements. You find them by questioning your assumptions about predetermined elements. What might cause the price of oil to rise again.

Forming Plots

1. There are only a few plots relevant in scenarios mostly coming from real life economy, political systems, technologies and social perceptions.
2. In scenarios for a company, design at least one or two alternatives that frighten the management enough to think but not to close the business down.
3. Characters for scenarios tend to be either driving forces or institutions, nations, companies, or regional bodies.

The Plot Types

1. Winners and Losers: In this plot the perception is that there are limited resources. They are scarce and as one side gets richer the other side gets poorer. It is called the zero sum game.
2. The Challenge and Response Plot: In this plot as new problems come up, investors and countries learn to adapt.
3. Evolution - Evolutionary changes are biological in nature, as an analogy.

The most common evolutionary plot in the world today is technology.

4. Other Plots:

- i) Revolution: every now and then there is a sudden dramatic change usually unpredictable in nature;
- ii) Cycles: economic matters often occur in cycles. It is good for a scenario builder to be familiar with some economic theory;
- iii) Infinite possibility: Infinite possibility starts with the public perception the world will expand and improve infinitely. It is a seductive perception;
- iv) The Lone Ranger: here we dismantle the existing system eg., Margaret Thatcher

Scenario Numbers

Present scenarios (no more than three) to a variety of people. Avoid the temptation to choose one scenario over another.

Summary Steps to Developing Scenarios

1. Identify focal issues or decisions;
2. Identify key forces in the local environment;
3. Identify driving forces;
4. Rank key factors by importance and uncertainty;
5. Select scenario logics;
6. Flesh out three scenarios;
7. Consider the implications;
8. Select leading indicators and signposts;
9. Additional considerations:
 - i) Avoid designing probabilities to different scenarios;
 - ii) Name scenarios with graphic input.

The Imaging Workshop is another powerful futures technique and the steps involved in developing the imaging workshop are as follows:

1. Decide on the focus;
2. Situate this at a specific future time;

3. Be in that future;
4. Allow the image to become specific;
5. Outline it as clearly as possible, with written or drawn description;
6. Describe the image to a partner and nurture the image by asking questions;
7. Explore the meanings of the preferred future, teasing out central themes;
8. Examine consequences of the future with a future wheel;
9. Evaluate how this future happened as it is now the present;
10. Translate the main feature of the future back to the real present;
11. Look for settings, points of leverage, key people which move towards the preferred future.

Conclusion

In this paper I have put forward a particular view suggesting that the job plan methodology could remain intact but, with futures techniques incorporated either into the idea generation stage, or with some imagination, the evaluation stage.

Alternatively there could be added a new step in the methodology after the information stage but before the idea generation stage and we would call this "the temporal context". I would strongly urge this "temporal" context where the significance of time is appreciated. A variety of futures techniques could be incorporated here to not only add richness into the impending idea generation stage but to also address the differing "temporal requirements" of the stakeholders.

References:

- Schwartz, Peter: *The Art of the Long View* (Currey Doubleday New York, 1991)
- Slaughter, R.A.: *Futures Tools and Techniques*, Futures Study Centre, Melbourne, 1995.

