Electronically Assisted Dialogues for Urban Planning

Jim Sheffield

Department of Management Science and Information Systems
University of Auckland
j.sheffield@auckland.ac.nz

Abstract

Previous research describes phases in the design of electronically supported meetings from a temporal perspective. Yet the epistemological status of each phase has not been identified. It is proposed that the pre-meeting phase should be evaluated from a positivist orientation while the meeting itself should be evaluated from an interpretive orientation. Results are reported from a case study in urban planning that provides empirical support for these propositions. Data was gathered during the design and implementation of a strategic evaluation meeting. The goal of this meeting is seen as building consensus via ‘rational communication’ (Habermas 1987). Participants’ performance and perceptions are reported. Observational evidence suggests that participants’ prior life experiences biased their interpretations.

1. Introduction to Comprehensive Urban Planning

Informed consensus for action is a goal shared by many of those involved in planning for the future. Yet conflict and confusion reign whenever the connection between information, consensus, and action are investigated in some depth. Nowhere is this more apparent than within the context of comprehensive urban planning.

The diversity and complexity of comprehensive urban planning has lead to a profusion of piecemeal approaches to the strategic (i.e. integrated or comprehensive) planning process. Technical and political processes are intertwined. Attempts to forge sensible linkages between empirical evidence, evaluation and policy setting are subject to attack from those unsympathetic to the outcome.

A ‘good conversation’ [33] or constructive dialogue [6] is essential to integrate different viewpoints. Supporting and structuring this dialogue is difficult because even the well-intentioned advocacy of alternative futures may lead to polarization. In this situation, communication tends to become adversarial and dysfunctional, degenerating into expensive and time-consuming litigation.

In the absence of a clearly articulated purpose the planning process itself becomes the cause for conflict, and momentum for change is lost [16].

This paper explores approaches to comprehensive urban planning and the design of the meeting or meetings that are held to evaluate strategic options. Propositions are developed on the philosophical orientation that best supports the pre-meeting and meeting phases of strategic evaluation. Empirical data is reported from a case study in which these proposals are implemented in conjunction with the design of an electronically assisted dialogue.

2. Urban Planning Approaches and Meeting Design

This section describes two approaches to comprehensive planning – expert and consensus – and two phases of meeting design – pre-meeting and meeting. It is proposed that the expert approach and the pre-meeting phase should both be evaluated from a positivist orientation. It is also proposed that the consensus approach and the meeting phase should be evaluated from an interpretive perspective.

2.1 The Expert Approach

The Expert Approach recognizes that subject matter experts are the best source of information on technical issues. The goal, strategy and procedure associated with the Expert Approach to comprehensive planning are summarized in Table 1.
The Expert Approach may be differentiated from other approaches by evaluating its epistemological status or philosophical orientation. The Expert Approach adopts a *positivist philosophy*, i.e. one that presupposes that: (1) a reality exists independently of our knowledge of it; (2) the objective structure of this reality is capable of being discovered and measured using researcher-devised constructs.

Issues in evaluating the Expert Approach focus on the neutral role of the expert, the validity of the measures and the replicability of the findings, and the certainty (i.e. falsifiability) of the linkage between cause and effect. It is widely recognized that objective, valid, replicable and certain conclusions are only possible within a relatively narrow sub-discipline. A dominant paradigm [22] and a common analytical apparatus [5] must inform this sub-discipline. Unfortunately important elements in urban planning remain fragmented and ad hoc. This presents a problem in that no analytically sound method exists to aggregate the opinions of experts in different planning sub-disciplines. This sets theoretical limits to the practical value of computer-supported modeling.

<table>
<thead>
<tr>
<th>Philosophical orientation</th>
<th>Expert approach to Comprehensive planning</th>
<th>Consensus approach to Comprehensive planning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positivist</td>
<td>Interpretive</td>
</tr>
</tbody>
</table>

| Goal                      | Rational decisions based on studies by subject matter experts | Enactment of the public interest via rational communication |

| Strategy                  | Reduce uncertainty via research studies within each planning sub-specialty | Reduce equivocality by means of sensibly interlocked behaviors of stakeholders |

| Procedure                 | Analyze performance of well-defined options against predetermined, objective criteria | Craft consensus in a face-to-face dialogue of stakeholder representatives |


| Available technology       | Linked computer-supported quantitative sub-models | Facilitated, electronically supported dialogue |

**Table 1. Two approaches to comprehensive planning**
In the urban planning community the limitations of
the Expert Approach are well known [2, 3]. These
limitations become apparent when the information
provided by experts must be aggregated and presented
in a form suitable for strategic planning. For this
purpose a grid or balance sheet format is commonly
used where the performance of well-defined options
(presented in columns) is evaluated against
predetermined, objective criteria (presented in rows).

Table 2 illustrates a not atypical Planning Balance
Sheet for comprehensive urban planning. The columns
are intended to provide a separate focus on three
reasonably coherent packages of policy options or
alternative scenarios for the future. The options are
developed to aid the decision making process and to
meet the legal requirements of local transportation and
environmental authorities. These options take some
years to develop, integrate and refine. They are
commissioned and assembled by generalist planners
with major input from experts in various planning sub-
specialties. The experts produce data using constructs
and measures many of which are unique to their own
sub-discipline.

Particular measures (e.g. average trip times,
pollutants in parts per million) may be accepted as
accurate by other experts in the same sub-specialty (viz.,
transportation, coastal water quality). However there
exists no purely analytical procedure for assessing the
performance of an option in a language useful to
‘foreigners’ who hail from another sub-discipline [8, 9].
This is because each option entails a conceptually loose
collection of different actions, and each action has a
broad array of social consequences. Some outcomes
(e.g. cost) may be quantified, some (e.g. many of the
outcomes related to amenity and landscape value)
cannot.

Quantities are often available only because they are
easy to measure (and internally valid) rather than
because they are of real interest (and externally valid).
For example, because an item of real interest (total
system wide costs, including both public and private
expenditures) is difficult to estimate over an extended
period of time, something that can be estimated
(estimated net, total known public costs, expressed in
current dollars) is used as a proxy.

To compound the confusion the choice of any
measure may be an occasion for partisan politics. For
example, cost (quantified as public costs) may be
acceptable to some stakeholders (e.g. the local
governments who pay for passenger transport and
water) but unacceptable to other stakeholders (e.g. the
public who pay for cars and houses).

For the same reasons, each row or evaluation
criterion is not analytically pure. Each criterion is
essentially a bundle of issues which, by necessity, can
only be represented in mixed descriptive, qualitative
and quantitative form.

From the perspective of the subject matter expert,
both the options and the criteria by which they are
evaluated are best described as a constellation of
analytical indicators which, in aggregate, are too rich
and intractable to be analyzed in an acceptable manner
[23, 32].

2.2 Requirements of the Pre-Meeting Phase

It is clear that the expert or positivist approach
cannot fulfill all the requirements for comprehensive
urban planning. To gain consensus in a strategic
planning meeting of those closely associated with the
planning process will require a different approach.

However the preparation for such a meeting is itself
the subject of intense debate. To obtain the necessary
political and financial support, the pre-meeting
activities must focus on rational decisions based on the
studies by subject matter experts. This in turn relies on
the evaluation of multiple attributes within a single
analytical structure (Table 2). In spite of the difficulties
described previously, the positivist approach still
provides the most robust method of preparing an
unassailable framework for a strategic evaluation
meeting.

The goal of the Pre-Meeting Phase is the
transformation of expert opinion into briefing
documents suitable for those who will attend the
strategic evaluation meeting. This may result in a three-
level analytic structure (Figure 1):

Level 1: This level has the highest level of
aggregation, and the lowest level of analytical accuracy.
Its main purpose is to directly support the ongoing
deliberations of planning generalists and others with
interests beyond that of a single planning sub-specialty.
It focuses on a non-technical description of the options
and a small number of key concepts, each supported by
a constellation of supporting indicators of cost or value.

Level 2: The purpose of the material at the middle
level is the mapping of the somewhat general concepts
and indicators (from level one) to the analytically sound
criteria for each sub-model map (at level three).

Level 3: As a base for requirements at higher levels
of aggregation, empirical data from planning sub-
models are presented. This data is accurate, narrow and
detailed. By virtue of at least some common constructs,
operational definitions and measures [45], some data
items can be linked into a more holistic structure.
### Option 1: Consolidation
- more environmental, etc, planning controls
- higher density
- more passenger transp’t (light rail)

### Option 2: Composite of
- Consolidation
- Expansion options

### Option 3: Expansion
- less environmental, etc, planning controls
- lower density
- more private transport (cars)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Economic Values</th>
<th>Amenity and Landscape Values</th>
<th>Housing Choice</th>
<th>Access and Transportation</th>
<th>Coastal Water Quality</th>
</tr>
</thead>
</table>

**Table 2. The Planning Balance Sheet**

**Figure 1. Requirements of the Pre-Meeting Phase**
2.3 The Consensus Approach

The consensus building approach recognizes that consensus on political issues must be crafted in a face-to-face dialogue of stakeholders and/or their representatives. The goal, strategy and procedure associated with the Consensus Approach to comprehensive planning are also summarized in Table 1.

The Consensus Approach adopts an interpretive philosophy, i.e. one which asserts that: (1) reality and our knowledge of it are social products which cannot be understood independent of the social actors who construct and make sense of that reality; (2) a shared social reality is produced and reproduced through ongoing social interaction, and can only be interpreted, rather than ‘discovered’ [29].

Of course, constructed realities (sometimes called ‘perspectives’ or ‘images’) are often related to tangible entities. Cars, houses and grassy areas are indeed tangible entities. But the meanings and wholeness derived from or ascribed to these tangible phenomena in order to make sense of them, organize them, or reorganize a belief system are constructed realities. These constructions will differ between different individuals [15].

In the Consensus Approach the goal is to build consensus via ideal or rational communication (Habermas 1987) [20]. Rational communication among stakeholders is a strategy intended to reduce equivocality about the degree to which their interlocked behavior is ‘sensible’ [43] (i.e. other than chaotic or dysfunctional).

Innes [21] enthusiastically advocates consensus building as a cure for all of the ills exposed by Altshuler’s attack on the Expert Approach. Her argument is backed up by a lengthy list of the disciplines and techniques that are now available to support consensus building. These include: (1) the structuring of the group interaction process by the use of the Nominal Group Technique, or NGT [42]; (2) the implementation of concepts from the popular negotiation literature to reduce the risk of dysfunctional conflict.

Unfortunately Innes does not mention whether these approaches were used in the cases she describes. The suspicion remains that many of the practical issues surrounding consensus building remain unresolved, and that the management of conflicting interests is difficult and, in some cases, impossible.

For example, Forsyth [17] presents empirical evidence of the difficulty of building consensus. She describes a Sydney housing development and provides rich and detailed accounts of how stakeholders’ differing life experiences produce a pattern of conflicting responses that would be very difficult to shift towards a consensus position.

In totality, however, the arguments of both Innes and Forsyth support the notion that the ideal of communicative rationality [20] is best approached via the use of expert facilitators (rather than subject matter experts) and process structuring techniques like the NGT.

Table 3 illustrates how the NGT may be used in the Consensus Approach to comprehensive urban planning. Note the semantic form of the aggregation process. This extended form of the NGT is designed to structure debate on the performance of various planning options against a particular criterion. Participants complete the full cycle of NGT activities on each row of the Planning Balance Sheet (Table 2). If sufficient time is allowed so that each cycle produces the tangible outcomes listed in Table 3, and sufficient time is allowed for participants to review a permanent record of their performance on all cycles, then mutual understanding and some degree of consensus may be expected.


2.4 Requirements of the Meeting Phase

An effective meeting process is one that fulfils the Habermas requirements of communicative rationality [20]. These requirements are expressed in terms of the types of validity claims that are consistent with a particular type of social action or outcome. For example, Habermas would characterize the validity claimed in the expert or positivist approach to urban planning as ‘objectified truthfulness’ and the outcome of communication as ‘representation of facts’.

In a strategic evaluation meeting attended by those (cognitively) able to understand the ‘facts’ the validity claims would include clarity, contextuality, efficiency, effectiveness and sincerity [30]. While such a meeting must establish legitimate interpersonal relations (i.e. the ‘ecological validity’ mentioned in Table 1) the scope for action is more limited than the totality of possibilities described by Habermas [20]. Consensus rather than emancipation is the primary goal. The appropriate philosophical orientation is interpretive rather than critical social theory [27].

A practical goal not inconsistent with Habermas is to empower participants (and therefore the consensus building process) by legitimating cooperative norms while discouraging ‘strategic’ (i.e. competitive) behavior. Examples of cooperative norms are: (1) reduced barriers to speaking and to receiving a
sympathetic hearing; (2) equal and active participation, (3) full exchange of relevant information, and (4) commitment to meeting outcomes. Strategic norms include manipulation, deception and systematically distorted communication [30, 31].

As was the case with the Pre-Meeting Phase, the requirements for success in the Meeting Phase may be evaluated at three levels (Figure 2): (1) overall effectiveness; (2) effectiveness of the resources; and (3) effectiveness of the process.

<table>
<thead>
<tr>
<th>Individual Activity</th>
<th>Tangible Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Construction of individual views of the performance of the three options against a criterion (½ page per participant)</td>
<td>1. Raw aggregation of individual views. A common framework may/may not emerge. (8 pages total from 16 participants)</td>
</tr>
<tr>
<td>2. Individual construction of issues important to the group as a whole</td>
<td>2. Group consensus on a non-redundant list of key issues (1 page)</td>
</tr>
<tr>
<td>3. Ranking of key issues</td>
<td>3. Group consensus on a prioritized list of key issues (1 page)</td>
</tr>
<tr>
<td>4. Relative assessment of the performance of the three options against a criterion</td>
<td>4. Preference ordering of the three options against a criterion (1 line)</td>
</tr>
</tbody>
</table>

Table 3. Dialogue on each row of the Planning Balance Sheet

![Figure 2. Requirements of the Meeting Phase](image-url)
2.5 Electronic Meeting Support

The possibility exists that the technology of facilitated, electronically supported dialogue provides a useful tool for building consensus.

Electronic meetings are supported by networked computers and specialized software for structuring group interaction (‘groupware’). Participants work simultaneously to create, manipulate and share text, lists and tables. Because participant’s comments are anonymous attention focuses on the message rather than the sender. Participants also take part in group discussions lead by a facilitator who is responsible for the overall design of the process. The combination of expert facilitation and electronic meeting technology resources is a potentially powerful one that may support many process designs. However these resources appear particularly well suited to designs based on the Nominal Group Technique.

The characteristics of electronic meeting systems have been captured in a small but growing literature. Some key findings are:

- The process support and the structuring capabilities of electronic meeting systems may enhance the gains while reducing the losses typically associated with interacting groups. [12, 13, 14, 25].
- The simultaneous use of keyboards and the automatic sharing of the group work product increases efficiency [18]. This effect is especially noticeable as group size increases [19, 41].
- The availability of a variety of communication media aids process design. Choice of communication medium enables a selective focus on strategies and procedures designed either to reduce uncertainty or to reduce equivocality [11]. (See Table 1.) Because of this and other characteristics, electronic meeting systems have been found useful in managing both cognitive conflict and conflicting interests [7, 28, 36, 37, 40].
- The role of the facilitator is important [1, 10, 26].

Results from recent research also suggests that electronic meeting systems are likely to be useful when: (1) informed consensus for action is important yet difficult to arrange; (2) the issues are complex, and the stakeholder group is large and/or diverse.

These same conditions characterize strategic evaluation in comprehensive urban planning.

These findings motivate the research question: Can strategic evaluation in urban planning be supported by facilitated, electronically assisted dialogue?

3.0 Research Methodology

The research method is case study [24, 44]. Detailed information is sought on the preparation, implementation and follow-up of a facilitated, electronically assisted dialogue within an urban planning context.

The author was involved with all phases (Pre-Meeting, Meeting and Post-Meeting) of the strategic evaluation workshop. This research methodology permitted a rich array of data to be gathered:

- Notes on 50 hours of meetings and phone conversations with staff and consultants from a regional planning authority
- Observations during the workshop
- Audio and video records of the 8 hour workshop
- In depth study of the documented inputs (i.e. the briefing papers) and outputs (i.e. the electronic transcript) of the workshop
- Perceptions of workshop participants gathered at the end of the workshop in both free-text and questionnaire form
- In depth study of the report of the strategic evaluation of growth options published by the regional planning authority [4]
- Correspondence with regional planning authority staff

This data was supplemented by anecdotal and general background data gathered by the author in a related research project. The earlier research project involved planners from the same metropolitan area who interacted over a three-day period to produce plans for a key urban area.

The venue for the workshop was the Decision Support Center at the University of Auckland. The purpose of the Decision Support Center is to conduct research on electronic meeting systems. It features a meeting room in which 16 networked computers are arranged on two sides of a long conference table.

Data was gathered on a strategic evaluation workshop that attempts to build consensus in a situation that involves technical complexity and ongoing challenges from a diverse array of stakeholders. The objective of the workshop is to gain the informed, even enthusiastic, consensus of a panel of town planning executives on growth options for a metropolitan region over a 30-year period.

The meeting was sponsored by the Auckland Regional Council. This council has responsibility for comprehensive planning for a metropolitan area that encompasses five cities. The population of 1 million in 1997 is expected to grow to 1.5 million by 2021. The council owns a small library of planning reports. These reports have been compiled specifically for the current comprehensive planning exercise. The work was done over a period of six years by experts in various planning sub-specialties.
Three options for growth have been modeled in great detail and are to be evaluated against a profusion of criteria expressed in a variety of quantitative and qualitative forms. A Planning Balance Sheet approach was adopted (Table 2). In the pre-meeting phase, three sets of briefing papers were produced. Each set was about 50 pages in length and focused on a different level of aggregation and analytical accuracy (Figure 1).

Participants were members of a planning fraternity and had interacted on previous occasions. After they agreed to participate they were sent the briefing papers in the mail. A half-day briefing session was scheduled for the week before the workshop. The briefing session was intended to ‘warm-up’ participants by having them meet in a cooperative atmosphere and discuss the evaluation process and the role each participant would play.

Of the 16 participants whose consensus was sought, ten were planning executives recruited from the five cities in the region (two from each of the five cities). The remaining six participants were Auckland Regional Council planners and consultants.

Five other town-planning professionals took part in the meeting. These were the Auckland Regional Council planners responsible for coordinating the comprehensive planning process. Their role was to ‘host’ the workshop and to provide information as required.

The agenda for the one-day strategic evaluation workshop is reproduced as Table 4. The 11 step agenda reflects the use of the Planning Balance Sheet approach for interpretive rather than positivist purposes. Steps 2 through 8 address issues determined by the prior use of the Expert Approach. Equally significant, however, is the fact that consensus building starts (step 1) and ends (step 9) with statements by participants of their personal beliefs.

<table>
<thead>
<tr>
<th>The Agenda for the Strategic Evaluation Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction (including initial invocation of each participant’s individual views on the three options and the differences among them)</td>
</tr>
<tr>
<td>2. Performance of Options 1, 2 and 3 against Criterion A: Economic Values</td>
</tr>
<tr>
<td>3. Performance of Options 1, 2 and 3 against Criterion B: Amenity and Landscape Values</td>
</tr>
<tr>
<td>4. Performance of Options 1, 2 and 3 against Criterion C: Housing Choice</td>
</tr>
<tr>
<td>5. Performance of Options 1, 2 and 3 against Criterion D: Access and Transportation</td>
</tr>
<tr>
<td>6. Performance of Options 1, 2 and 3 against Criterion E: Coastal Water Quality</td>
</tr>
<tr>
<td>7. Provide each participant with the aggregated group relative assessments of Options 1, 2 and 3 against each of Criteria A, B, C, D and E</td>
</tr>
<tr>
<td>8. Rank the interpretive power of these five criteria</td>
</tr>
<tr>
<td>9. What is it like to live in Auckland under Option 1, Option 2, and Option 3? Compose own vision, read others, assimilate, value.</td>
</tr>
<tr>
<td>10. Feedback (free-form and questionnaire) on the strategic evaluation workshop</td>
</tr>
<tr>
<td>11. Conclusion (including awards for ‘best’ vision statements, thanks)</td>
</tr>
</tbody>
</table>

Table 4. The agenda for the strategic evaluation meeting
4. Results

The strategic evaluation workshop was held in April 1997 on the day planned. The half-day briefing session scheduled for the week before had been cancelled due to resource constraints.

4.1 Participant’s Performance

Most of the dialogue was electronically assisted. The electronic transcript grew at the rate of about 10 pages every 50 minutes (Table 5). By the end of the day an 80-page document was available for further study. This document has a strong organizing structure at both the macro (Table 4) and micro (Table 5) levels. However like any raw transcript of a constructive process the content of the document appears incomplete or unfinished.

Table 5 summarizes participant’s performance on the activities completed on each row of the Planning Balance Sheet (that is, on each of agenda items 2 through 6).

<table>
<thead>
<tr>
<th>Individual Activities</th>
<th>Typical Duration</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Silent reflection interleaved with 1b. Silent typing (½ page per participant)</td>
<td>8 minutes total for both</td>
<td>1a. Construction of individual responses 1b. (8 pages total from 16 participants)</td>
</tr>
<tr>
<td>2a. Silent reading of the comments of all other participants to identify key issues 2b. Oral statement to surface a key issue not yet identified by other participants</td>
<td>12 minutes</td>
<td>2a. Individual construction of group’s response 2b. Consensus on a non-redundant list of key issues (1 page)</td>
</tr>
<tr>
<td>3a. Silent and individual preparation of relative importance of top five key issues (5 = most important, ..., 1 = 5th most important) 3b. Facilitator aggregates the votes and reorders the issues in descending order by importance</td>
<td>8 minutes 5 minutes</td>
<td>3a. Construction of individual responses (5 lines) 3b. Consensus on a prioritized list of approx. 20 key issues (1 page)</td>
</tr>
<tr>
<td>4a. Participation in an oral discussion on the interpretation of patterns, linkages, issue structure, lessons learned, etc. 4b. Relative assessment (either ++, +, 0, - or –) of options 1, 2 and 3 against the criterion 4c. Facilitator aggregates the relative assessments and reorders them (left--&gt;right) in ascending order of preference</td>
<td>5 minutes 1 minute 1 minute</td>
<td>4a. Construction of individual and group responses 4b. Construction of individual responses (1 line) 4c. Preference ordering of 3 options on a criterion (1 line)</td>
</tr>
<tr>
<td>5. Break</td>
<td>5 minutes</td>
<td>5. Mental sharpness and enthusiasm retained throughout the workshop</td>
</tr>
</tbody>
</table>

Typical time spent on each agenda item = 50 minutes

**Table 5. Participants’ performance: Duration of activities and their tangible outcomes**
The activities and outcomes reflect the themes important to the Nominal Group Technique. These include equal participation, separation of divergent and convergent processes, a balance of individual and group work, a mix of communication media, and the creation of a transcript that is owned equally by all participants. A full 50% of the available time was spent on the silent construction of one’s individual thoughts.

The electronic transcript provides a chain of evidence that strengthens the consensus building process and links the participants and the meeting with the pre-meeting and post-meeting activities.

The time required to achieve these outcomes reflects the automatic and instantaneous sharing by electronic means of the work done by individuals. The electronic dialogue appears to have enhanced participant’s performance.

4.2 Participants’ Perceptions of Efficiency and Effectiveness

At the end of the workshop each participant completed a questionnaire. One item asked “You spent 8 hours in the Decision Support Center to achieve today’s result. How many hours would you expect to spend to achieve the same result by conventional means?”

The median response was 16 hours. (Because the distribution of responses is positively skewed the median is considered a better measure of central tendency than the mean.)

That is, participants perceived that the facilitated, electronically assisted dialogue was twice as efficient as conventional means.

The questionnaire also contained contains multiple items on each of the seven constructs consistent with the Habermas concept of communicative rationality (Figure 2). These scales have been tested with a variety of groups of size 10 to 40 participants, some of whom were engaged in strategic policy evaluations in science [36] and economics [38].

The average results are shown in Figure 3. On each of the seven scales participants perceived that facilitated, electronically assisted dialogue is effective. The average of all seven scales is 5.9 (7 = Effective, 1 = Ineffective).

4.3 Observations

The video record of the meeting shows that the walls of the meeting room covered with posters and all available desk space was covered by briefing documents. Throughout the meeting the hosts’ explanation of these was the occasion for questions and challenges. These briefing papers were attacked from a variety of viewpoints. Partly this was because the papers were complex and not well understood by all participants. Partly, this was because participants disagreed with some aspect of them (content, timeliness, etc.) A majority of participants appeared to accept the briefs as an adequate framework or starting point for interpretation and consensus building.

A minority of participants appeared to regard the decision framework as seriously flawed. To these participants the outcome of the pre-meeting phase of the strategic evaluation meeting was a ‘pathological cultural reproduction’ [20]. It is not clear whether the objections of this minority (whose response had been
predicted by the hosts) would have been significantly changed by a half-day briefing session.

The video record also shows long periods of silence in which participants worked between briefing documents and keyboards with intense concentration. Participants seemed to enjoy using the electronic meeting technology. With some enthusiasm they appropriated it to their individual efforts to express themselves on issues the resolution of which would affect them in many ways.

Anonymous feedback collected via the keyboards at the end of the workshop was overwhelmingly positive ("An excellent technique and fun too"). Any remarks made in casual conversation and overheard by the facilitator (i.e. the author) were favorable. Formal and informal feedback about the process that participants communicated to the 'hosts' was also positive. The facilitator also received (unsolicited) formal communication from regional planning staff indicating that the day had been successful from their point of view. Based on observational evidence and participants' performance and perceptions, the electronically assisted dialogue was a major factor in the success of the meeting.

One question that remains is whether the consensus approach may be expected to achieve complete success (as claimed by Innes) or only partial success (as suggested by Forsyth). The electronic transcript provides evidence on this question. In total, participants' qualitative evaluation (steps 1-6 in Table 4) showed no pattern of evidence in favor of any of the three options. However 13 out of 16 individuals' aggregate numerical assessments showed that, when all criteria were included, option 1 was preferred over options 2 and 3.

Because participants appeared to have a good understanding of the decision process, this result can only be attributed to bias. This interpretation is strengthened by observations on the 'dramaturgical' action that accompanied the sharing of each participant's vision [20]. Nearly all of these visions were strongly supportive of option 1, were received with acclaim and were unrelated to a sober reading of the 'facts' as the group saw them. This group of planning executives had built a strong numerical consensus in favor of option 1 ('more planning controls') because it matched their life experiences ('planning is important'). As Forsyth [17] predicts, consensus-making processes are unlikely to overwhelm the evidence of prior life experiences.

Post-meeting activities focussed on the production of a document that summarizes the strategic evaluation of the six-year planning cycle [4]. This report gave equal weight to the consensus reached via the electronic dialogue and a subsequent 'analytical review'. The latter was required to address the perceived bias of participants in this strategic evaluation meeting. Both positivist and interpretive perspectives were required to guide the Post-Meeting Phase.

5. Discussion and Lessons Learned

Findings from a case study were presented which suggest that consensus building within the context of comprehensive urban planning can indeed be supported by facilitated, electronically assisted dialogue.

A workshop was held to evaluate comprehensive plans for the major urban area in New Zealand. Informed consensus for action was important yet was expected to be difficult to arrange. From a positivist or expert viewpoint the difficulties lay with the complexity and scope of the technical issues and a cost for resolving them which was estimated at more than a billion dollars. From an interpretive or consensus viewpoint the difficulties lay with shifting alliances and interests, both within and among city jurisdictions.

By necessity the workshop had to reflect factual, personal, social, political and legal agendas. The strategy adopted was a one-day evaluation workshop, facilitated by a neutral person, where much of the dialogue was supported by electronic meeting technology.

Key issues in the design of this dialogue were identified at the macro and micro levels. At the macro level these issues centered on a Planning Balance Sheet where the columns represented options and the rows represented evaluative criteria. At the micro level (e.g. discussion on an individual criterion) these issues centered on an extended form of the Nominal Group Technique. The facilitated, electronically assisted meeting provided process support and process structuring functionality at both of these levels. The tangible work product was an 80-page, electronic transcript which, while highly structured still appeared in some sense to be 'unfinished'.

Participant's perceptions in both free text and questionnaire form were elicited at the end of the workshop. Participants perceived some inadequacies in the timeliness and quality of the briefing documents. Nevertheless they perceived that the workshop was both efficient and effective.

The main reason advanced to explain these results was the support that the new electronic meeting technology provides to time-honored techniques for structuring group interaction. Without electronic assistance it is likely that structuring techniques such as
the NGT would have taken more time and produced a less satisfactory outcome. Momentum (i.e. informed consensus for action) would be lost.

The electronically assisted NGT process appears successful in:

• reducing barriers to communication
• enabling high and uniform (democratic) participation
• motivating participants to freely exchange information
• motivating participants to commit to meeting outcomes.

Prior research suggests that the perceived efficiency and effectiveness of this process permit participants to learn in situations that could otherwise become chaotic. In the economic policy planning area, prior research [39] showed that electronically assisted meetings promoted inter-organizational learning [34, 35] and were effective catalysts of industry-wide change in situations previously characterized by dysfunctional conflict.

In the current study, facilitated electronically assisted dialogue may also have enhanced the ability of participants to learn in the presence of potential conflict. At a personal level, relationships among participants were mostly cordial. However in their ongoing professional life, participants represented employers whose interests were often opposed. Every day participants worked in an environment where their work was open to technical, political and legal challenges. The participants provided anecdotal evidence to support their belief that many of their prior professional exchanges were marked by a limited ability to harness their professional skills to simultaneously solve technical problems and resolve political conflict.


6. Conclusion

Comprehensive urban planning is complex. A clear rationale is required to guide the design of strategic planning meetings. Evidence from a successful meeting suggests that the pre-meeting phase should be evaluated from a positivist orientation while the meeting itself should be evaluated from an interpretive orientation.

The goal of this meeting is seen as building consensus via ‘rational communication’ (Habermas 1987). This outcome may be supported by facilitated electronically assisted dialogue.

7. References

16. Dutton, Jane E., Duncan, Robert B. ‘The Creation of Momentum for Change Through the Process of


