Effective Engagement: building relationships
with community and other stakeholders

Book 3
the engagement
toolkit

Victoria
The Place To Be

3.52 Simulation (electronically generated)

Description:

Simulations attempt to display the outcomes of particular choices through changing the inputs to a computer model that simulates the likely outcomes of a system with choices. Simulation can also be set up as games (e.g. the Quest Envision programs that encourage community participation through games where they make choices, are then given feedback on the consequences of those choices).

This participation method uses mathematical relationships to explain a system (e.g. the regulations to do with vegetation clearing and proposed changes to legislation) and then when it is understood, extrapolations into the future can be made. The overriding consideration is that you 'know and understand' the system you are trying to model. In relatively simple systems, or those that have been used a long time and have many revisions from experience (like current economic forecasting), the relationships can be modelled fairly accurately.

Two major components are:

- Knowing the relationships relative to what event is connected to what other event(s).
- The relative magnitude of that relationship.

In anything but a very simple model, the interactions and feedback loops (results of one step affect an earlier step) are very difficult to determine. This is especially true for models that predict more than a few years. For complex situations, it is nearly impossible to model accurately both the relationships and their magnitude when appropriate feedback loops are considered.

Electronically generated simulations can be set up in such a way that they are accessible and understandable to the general public, or may be designed for technical and professional use in determining the consequences of a projected change in regulations or laws.

Objectives:

Electronic simulation allows broad scenarios to be given a 'virtual trial run' on a computer that allows the consequences to be observed and considered, and decisions made.

Simulations can allow testing of the environmental consequences of choices and decisions to an entire catchment area.

Outcomes:

Electronic simulation gives a chance to 'trial' a change and its consequences prior to implementation of those changes, without affecting the community or environment. Testing the consequences allows modification of suggested changes or innovations to produce a better outcome for the environment and community.

Uses/strengths:

- Gives better results, even with limitations, when you cannot make simple extrapolations or modify trends or non-linear processes.
- Offers the option to change the conditions and see what would happen under a variety of assumptions. The latter are `what if' options, and you learn a great deal about the subject and its future possibilities by determining which changes cause what type (and how big) of an effect.

Special considerations/weaknesses:

- Model results are only as good as the model and the assumptions on which it is based.
- Very expensive to set up, including data for validation.
- Assumes an understanding of all variables.
- Need trained programmers and technical staff.

Resources required:

- Staff, computers, specialists
- Publicity
- Venue rental
- Catering
- Staffing
- Moderator/facilitator
- Experts
- Recorders
- Gophers
- Artists/photographer
- Audiovisual recording equipment and amplification
- Overhead projectors
- Data projectors
- Video
- Slide projector/screen
- Printed public information sheets
- Response sheets

- Props for working in groups (pens, paper, pins, etc.)
- Furniture
- Children's requirements

Can be used for:

- Showcase product, plan, policy
- Engage community
- Discover community issues
- Develop community capacity
- Develop action plan
- Communicate an issue

Number of people required to help organise:

- Large (> 12 people)

Audience size:

- Large (> 30)

Time required:

- Long (> 6 months)

Skill level/support required:

- High (Specialist skills)

Cost:

- High (> AUD$10,000)

Participation level:

- High (Stakeholders participate in decision)

Innovation level:

- High (Innovative)

Method:

1. Collect background information on issue or scenario.
2. Determine as many factors and influences as possible, and possible/probable outcomes of changes.
3. With the assistance of programmers, set up model to allow simulations.
4. Invite representatives of relevant groups to view and discuss the scenarios.
5. Discuss understanding and insights gained.
6. If relevant, develop future planning options based on preferred scenarios.

References:

- Hasell, MJ (1987) 'Community design and gaming/simulation: comparison of communication techniques for participatory design session', *Simulations and Games*, 18 March: 82-115

- http://www.iap2.org [accessed 07/06/2005]