July 23rd, 2012

346

AMQ International's

STRATEGIC ASSET MANAGEMENT

Assets are there to provide a service

In this issue

New demands for dialogue with users are being made in transport planning. Transport planners no longer just build roads. Nowadays they also must listen to the users, and the wishes of the users have an impact on the design and maintenance of the road transport system.

A game that facilitates change management and prepares staff for a new approach to asset management - this is change management in a fun, non-threatening way.

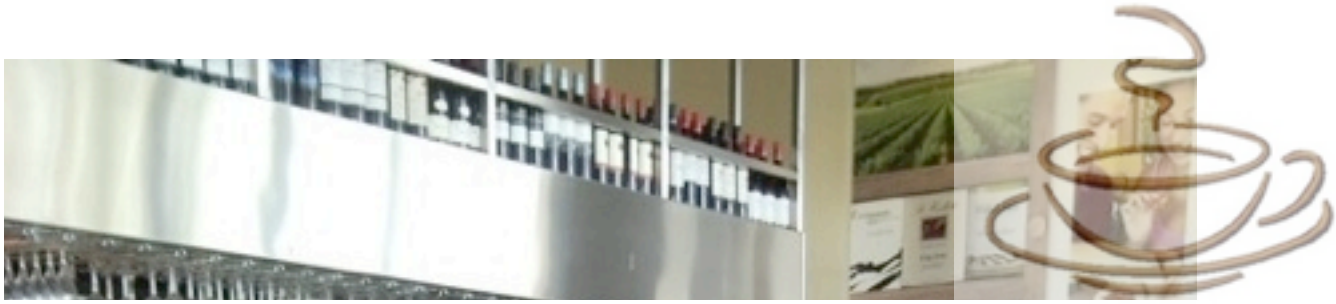
Do you understand the difference between a financial renewal model and an engineering intervention model (prescriptive modelling). Nor did the Minister in Holland who on being told that there was a strong probability that one of his dykes would fail in the next 3 years killing thousands, said: "That's no use to me, which dyke and when?" But you will know the difference when you read page 10.

The word from Europe

Most of our reporting is confined to Australia, NZ, Canada and the UK and it is very easy to believe that nothing much is happening elsewhere. Mostly we do not hear what is happening in Europe because it is reported in languages other than English. However, in this issue I am able to bring you some very interesting work from Sweden and from Holland.

So, do consider - and enjoy!
Penny

Dr Penny Burns, Editor, AMQ International, **www.amqi.com**
61 **(0) 8 8359 0559** **info@amqi.com**



Coffee Thoughts

My computer has been telling me for several weeks now that the printer cartridge is not working. I have ignored the messages. Printing for me is now a rarity. If it were not for the legacy papers from the 1980s and 1990s that I am using for my work on AM history, I would be close to reaching the nirvana of a paperless office. All bills, correspondence and all current projects are managed on line. My one concession to paper is the notebook that I carry with me everywhere and mostly use for ideas that crop up whilst out walking or in the coffee shop!

What has made all this possible is the iPad.

It is not just that the iPad (and by extension the iPhone and other mobile devices) enables us to do what we have always done - but to do it easier. It makes possible many opportunities that previously were undreamt of.

There are unprecedented opportunities for leveraging consumer and company iPad adoption through app development. Many utilities have already developed iPad applications allowing customers to track their power usage. Still other energy industry leaders are using iPads inhouse to streamline processes and empower their staff. And energy industry publishers are using iPads as a cheap and efficient publishing medium to reach busy executives.

In one case study included, General Electric reports distributing 2,000 iPads internally, and developing a series of applications both for its employees and customers. One app allows employees to approve purchase orders on the go, while another allows utility service personnel to monitor G.E. transformers in the field.

Similarly, in October 2011, Noveda Technologies, a supplier of web-based, real-time energy and water monitoring, launched its Building EKG energy and water saving iPad app, developed for enterprises to better manage renewable energy production, energy consumption and water usage in real-time.

How have you or your organisation used the iPad to improve performance and customer relations?

Sweden introduced a customer focus into its Roads Administration in 2003 and in 2006-9 carried out numerous studies to see how effective they are being. While it would be dangerous to think that all their findings would necessarily apply in other jurisdictions, the questions they ask and the processes they follow have a more general application.

ASSETS ARE THERE TO PROVIDE A SERVICE - BUT WHAT SERVICE AND FOR WHOM?

A Customer Focus

New demands for dialogue with users are being made in transport planning. Transport planners no longer just build roads. Nowadays they also must listen to the users, and the wishes of the users have an impact on the design and maintenance of the road transport system. This is true of other infrastructure providers as well.

Actions of the Swedish Road Administration

Like organisations in Australia, the Swedish Road Administration, intent on introducing a 'customer oriented' way of working, created institution-wide indicators or 'customer capture methods', e.g. market surveys and national measurements of customers' satisfaction with their roads and the actions of the SRA. Then, after giving their planners three or four years to get used to the new system, they set out to see how it was working.

How do planners use institutional data?

They interviewed 15 planners across three separate regions and they found that their planners were struggling to apply the broad, institution-wide measures to their day-to-day planning. The problem was that the planners knew from experience that communities were not all alike and that different community members had different aspirations for their roads. Which were 'needs' and which were 'wants'? Knowing that there was a CSI rating of, say, 70% for any particular aspect of the roads did not really help them in determining whether this average figure applied to any particular project and, if it did, did the 70% satisfaction need improving or was it OK? The planners found it difficult to pin down good representativity (which users best represented the overall needs of the community) and they therefore questioned the usefulness of the broad scale methods. In their daily work, the institution wide customer measures were not as useful, and therefore not as much used, as their daily personal contacts with customers, e.g. various meetings, written information, phone calls and emails. These contacts were used to operationalise and interpret the general surveys (and, often, in practice, to substitute for them).

As in the corporate planning story in the last issue, the policy directions implied by these broad scale, institution wide measures, needed to be 'translated' into operational terms for them to have any impact. The SRA realised that more effort needed to be put into practical on-the-ground knowledge including group dialogue with clients in the form of operation consultation boards and haulier consultation groups.

If you conduct market surveys or measure customer satisfaction how are the results used in decision making in your council or organisation? How do you know for sure that that is really how they are used?

Gender and Age equality

The SRA didn't stop here. As a result of the planners' inquiries about representativity, they researched two further aspects of community consultation, (1) - who turned up to their meetings (and how they were treated when they did come) and (2) - who seemed to be benefitting from the work that the SRA was doing.

Continuous public involvement

Public participation is a process that starts in the beginning of the planning of a road project and should run through the whole planning process. It aims at involving individuals and groups that are affected by a proposed action subject to a decision-making process or who are interested in it. Among the basic principles of public participation it is argued that public participation should be inclusive and equitable, i.e. to ensure that all interests and groups are respected.

Male dominance

Previous research had shown that men dominated the hearings and that the average age among the participants was high. The aim of the new research project was to investigate how the hearings in Swedish road planning are practiced, who attended the meetings and how did they express themselves at the meetings. The project studied participation of women and men on totally 16 meetings arranged by the Swedish Road Administration during 2007 and 2008. The aim was also to increase gender equality in the public participation process. There were three key findings:

1) **GENDER AND AGE BALANCE:** An explorative study which shows that 26 per cent of the participants were women. The women who attended the meetings were more active than the men; they asked more questions in proportion to the number of attending women. Both women and men said they were confident with the information at the meetings. Counting the spoken time (of questions and answers) in seconds shows that men who talked at the meetings did longer speech turns and argued a lot more for their opinions. However, both women and men got the same answer time from the road experts. The participants were characterized by higher education than the average of the nation. The explorative study showed that the recruitment to the meetings probably was one of the reasons that the meetings attracted some groups of people more than others.

Do women in your meetings have different interests from men? Are women's issues, or men's issues the same within their groups? Or does each group explore a range of issues with different emphases? This is the problem of representativity.

2) **THE NATURE OF THE ANNOUNCEMENTS:** A separate study was created to investigate the type of announcements for the meetings. This study showed that most of the announcements were created from a template that was rather technically oriented. The researchers hypothesised that changing the form of the announcements to one that was less technical, more 'human', would result in a different mix in the community meetings.

To test their hypothesis, the researchers interacted and changed the form of the announcements to a less technical, more dialogue oriented form. As a result more women - but only slightly - (32% as against 26%) attended and more middle aged participants took part.

3) **LOCATION AND TIMING:** The aim with the public hearings is also to take care of various arguments and ideas about the new road. The public hearings are often carried out as large information meetings or open house meetings. The research project suggested that more varied public participation hearings or meetings were needed to attract younger people and families with children, and also more women.

The location and time of the meetings may also be important for the participants. The meetings studied in this project were located in the neighbourhood of those who were concerned and in early evenings. Instead the meetings need to be located close to work places, schools or leisure activities that assemble a lot of people. The majority of those who participated in the meetings in the research project were travelling by car, and to the majority of the meetings it was only possible to go by car, bicycle or by walking, since no public transport was accessible. That is pointed out as a problem by the researchers. The researchers also pointed out that a gender equality perspective needs to be managed within the whole road planning process and not only with focus in the public participation process. At none of the meetings information was given about how the interests of various groups would be taken care of from the beginning of the planning.

In work reported in an earlier SAM, in New Zealand, road consultation meetings were held in private houses at which tea, scones and cakes were served. This turned the meetings into a friendlier spot that meeting in the local, and usually draughty, town hall. While the gender balance was not reported on in that study, it was noticeable that the road recommendations that came up were very different from the projects suggested by the road planners' models.

What work have you done - or know of - that:

Examines the effect of gender and age balance on community perceptions

Examines the factors that create a more equitable representation of males and females, young and old, employed and unemployed?

Has experimented with different meeting times and locations and recorded the results?

From Holland and the water industry comes

The Management Game - Asset Management

In my PhD work I ran over 240 experimental games in market behaviour and pricing with both students and market representatives. The most notable thing that I observed was that there is no such thing as 'it's only a game!'. People tend to approach the game conditions much as they would approach those conditions in real life. This makes a management 'game' a good way of experiencing new conditions in a non-threatening situation.

As you can see I am a game enthusiast. And this looks like a particularly interesting game, one moreover that you can customise to your own circumstances. If you are about to engage in (or revitalise) your change management, it could be exactly what you need.

This particular game was reported at Third International Engineering Systems Symposium CESUN 2012, Delft University of Technology, 18-20 June 2012 by Martine van den Boomen, Johan Duifhuizen, and Thomas Staverman.

This is just a brief description. If you are interested you can get more information about the game from Martine at vandenboomen@colibri-advies.nl, and you can access the full paper at *cesun2012.tudelft.nl/images/0/02/Boomen.pdf*

Playing the game in Mongolia

1. The Management Game Asset Management has been developed to support the change process towards a full asset management implementation in the Dutch Water Sector. It brings employees together and helps them to understand different asset management roles and responsibilities.

The game highlights the specific asset management development issues of the organisation and encourages employees to find solutions that work.

1.1 Game Roles

Five players represent a management team that consists of:

- an Engineering Manager
- an Operation & Maintenance Manager
- an Asset System Manager
- an Organisation Manager (CEO)
- a Customer Service Manager

The Organisation Manager and Customer Service Manager both represent *the strategic asset management role*, generally referred to as the Asset Owner. The *tactical asset management role* is played by the Asset System Manager or Asset Manager. Finally, the *operational asset management role* or Service Provider role is played by the Operation & Maintenance Manager and the Engineering Manager.

The responsibilities are summarised by:

Asset Owner: responsible for the translation of stakeholders" interests into strategic business objectives and a strategic organisational plan that contains a solid framework for the organisation-wide implementation of asset management. The asset owner is responsible for the provision of the asset management enablers and controls.

Asset Manager: responsible for the management of the asset portfolio and asset systems in line with the organisational strategic plan. The Asset Manager will set out an asset management policy, objectives and strategy. A long term asset system plan, including a capital and operational expenditures decision strategy, is part of the Asset Manager"s responsibility.

Service Provider: responsible for the effective and efficient operational life cycle activities. This is simulated in the game by the functions reliability engineering and reliability centred maintenance.

1.2 Maturity Scale

The purpose of the game is growth, individually for the respective roles and collectively for the team. Five game axes are reserved for the five game roles. Collective growth is measured at the sixth game axis which represents stakeholder value. Stakeholder value will grow as individual players grow. The game board is presented in figure 1.

Fig. 1. Game board with five asset management roles axes and a sixth shared axis
At the start of the game, each player receives a growth path chart or maturity scale (available in the on line paper - please see). Players start to determine the current growth position for their role and put their game piece on the number of choice on the game board. The Management Team discusses all positions. The player"s own organisation is often taken as a point of reference. The final start position of the game pieces is determined by the majority of votes.

In this phase of the game lively discussions arise as players need to explain to their colleagues why they value the maturity of roles differently. Often, knowledge is shared that some people were not aware of. These discussions are important for a common understanding of what is meant by asset management.

1.3 Balanced Growth & Board Meetings

Players are expected to grow. Buying a growth card simulates the investment in development

programs such as ICT-Development, Training and Communication, Risk Management and Performance Management. A growth card costs 2 coins. Money for growth cards is obtained in several ways. In each game round, the Organisation Manager shares 6 coins amongst the players and himself. The Organisation Manager cannot satisfy all players. The Organisation Manager aims for a balanced organisational asset management growth.

A second way of gaining money for growth can be found at board meetings, where all kinds of typical asset management challenges arise.

During the game, players are confronted with asset management challenges (debate cards) that belong to their roles. These challenges are to be answered in such a way that a player convinces as many of his fellow management team members as possible. It is not only a question of what to answer but also of who to involve. This challenges players to empathise with the position of the other players. The more team members who are in favour of a player"s solution, the higher the chance of gaining the additional money which is necessary for growth.

1.4 Game Evaluation

At the end of the game, the results are wholly evaluated. Often the game is played by several teams at the same time. The winning team is the team which has achieved the largest growth in the allotted playing time. It is also possible to look at the efficiency of a team; this is measured by dividing total growth by the number of game rounds. Some teams take more time for discussions. Other teams like to win and keep discussions short (time is money). The Organisation Manager plays a distinctive role in the group process. In the evaluation, differences in the starting positions of teams, which indicate differences in perceptions or knowledge on asset management, are plenarily discussed. The growth steps are a rough roadmap for the further development of asset management. The participants discuss where the organisation stands today, where it aspires to stand in a couple of years and what the necessary enablers and critical success factors are. Participants express their ideas on the different asset management roles.
The direct fruits of playing the game are view sharing, a better understanding of asset management responsibilities and a shared vision on how asset management should be developed within their own organisation. Playing the game directly supports the preparation of an asset management implementation plan and communicating this strategy to the entire organisation. As the organisation grows, so will the game. Debate cards and the maturity scale are easily adjusted to meet the specific needs of the organisation.

See how others have implemented this game. Read the online paper at *cesun2012.tudelft.nl/images/0/02/Boomen.pdf*

I am always delighted to receive feedback on the articles in SAM - whether you agree or disagree. It enables me to see whether I have hit the nail on the head, or smashed my thumb again!

Ian Greenwood, Opus International, writes:

Penny,

Not sure I fully concur with your write-up on renewal modelling. I agree that pure aged based models have lots of issues, and I have equally had quite amusing discussions with folks in the UK when I explain to them that the maths must be wrong when you are still happily driving down a road that you claim has got a less than 15 year residual life left.

Where I diverge from your write-up is that there are some very good renewal models that have more explanatory factors than just age, and which as a consequence the variation in predictions becomes suitably small that they can indeed predict the when and where.

I think there is a risk that giving a general blanket write-off of renewal models does a disservice to those who have put the effort in and can reasonably link their modelled FWP, with LOS and other good AM tasks.

The challenge in positioning a renewal model is two-fold in my view:
1. Not over-claiming the model ability to predict – which is where I think many get in to trouble (either the model or the base data don't justify the conclusions drawn); and
2. A general desire that the model should be improved over time to make it useful as a management tool (which tends to require a complete over-selling of what the model will do, such that management gets behind the approach).

It would be a much healthier modelling world if there was an acceptance as to what the model can/can't do now, and just what it is that they want the model to do – and in turn put improvements in place to achieve it.

A few years back I was supporting one large council in NZ when the auditors came along complaining about all the roads that were past their expected life, as though that was an indication of bad AM. I explained (as you did) that on average about half should go beyond. I also pointed out that a large %age didn't get to half their expected life, and that as an auditor they should be worried about that – not the worrying about the assets that are lasting well. Needless to say the next question was "why are these assets not lasting as long as expected?"

RENEWAL - PORTFOLIO AND INDIVIDUAL ASSET MODELS

Ian,

Always a delight to hear from you and in this case you give me the opportunity to clarify the difference between **portfolio modelling** (the renewal models that I was describing in the last issue) and **individual asset prescriptive modelling** (the detailed work that you refer to) which I didn't do in the last issue.

There are two dangers to watch out for here.

One is that engineering asset managers may fail to understand the long term financial planning nature of the portfolio, age-based, models and seek information for current intervention points.

The other is thinking that it is possible to add extra data to the age-based models and in this way turn them into a detailed prescriptive model that can be used for determining intervention points. It would be nice if this were true, but it isn't. And the reason is that the two models are based on *completely different premises*.

Renewal Modelling

- **Portfolios**
- Primarily aged based
- Simple projections
- Minimum data requirements
- Used for long term financial planning and strategic direction finding

Prescriptive Modelling

- **Individual assets or asset systems**
- Many factors involved
- Complex algorithms
- Heavy demands on data
- Used for short term physical intervention and action

An example of the difference:

Renewal Modelling (based on portfolios and age-based) can tell the asset manager in charge of dykes in Holland that there is a 90% probability that one of the dikes will fail within the next 3 years with a loss of life in the many thousands.

But it takes **Prescriptive Modelling** for *each individual dyke* to be able to tell you WHICH dyke, WHEN and WHY.