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June 16
2014

AMQ International's **STRATEGIC ASSET MANAGEMENT**

SO MANY OPPORTUNITIES FOR GROWTH!

Never have there been so many opportunities for personal, organisational and social growth in asset management as there are today and we would be crazy if we didn't take advantage of this abundance. A recent issue of 'The Times' in the UK had a special report supplement on Asset Management, which is a clear indication that Asset Management is now a profitable growth industry in the UK since the subject for such reports is largely determined by the number of companies wishing to sponsor them. Another indicator is the Delft University's MOOC (massive open online course) on Next Generation Infrastructures which is attracting thousands of interested students worldwide. Closer to home we have the Australian Prime Minister declaring he wants to be known as the 'infrastructure' Prime Minister. Admittedly he is currently interpreting infrastructure rather narrowly as just roads, but it is a start. Not only are we are witnessing this broadening of asset management interest, we are also seeing a 'deepening'. No longer is asset management merely technical, it is increasingly being recognised as both behavioural and cultural which maybe why there is growing interest from senior management levels. It is good time to be an asset manager!

In this issue, we look at a number of these opportunities including a new online venture by CAS, in the UK by which we can examine the culture of our organisations, some of the interesting ideas and techniques coming out of the Delft online lecture series and, importantly, we look at a series of workshops to be held in Australia and New Zealand that focus on developing strategies to overcome the maintenance skills crisis. Without the skills to follow through, our policies and strategies are just so many words!

Please consider and enjoy! *Penny*

Dr Penny Burns, Editor, AMQ International
08 8359 0559 **www.amqi.com**

ASSET MANAGEMENT CULTURE WATCH

For those asset managers who are now realising the critical role that culture plays in the development of asset management, and are perhaps considering how they may affect that culture, there is a new and unique service now available, easily and online.

You are invited to complete a small (7 question) level 1 survey about the attitudes to asset management in your organisation. In return you will be given the combined responses of all participants and thus can see where you stand. You will then be invited to take part in a level 2 survey, again with combined results presented to you. These surveys are free. If you like what you see and want to find out more about the role of culture in developing sound asset management you will be able to take part in further levels with surveys and webinars.

Find it at:

www.amculturewatch.com

I can personally vouch for the quality of the team responsible for this development, Chris Lloyd and Charles Johnson of CAS (Competence Assurance Solutions) in the UK. Chris is the Editor of "Asset Management: whole-life management of physical assets" published by Thomas Telford, London, 2010 and a second volume, "International Case Studies in Asset Management" ICE Publishing, 2012, (which were reviewed in SAM)

Dr Charles Johnson has a brilliant movie on YouTube called "The Competent Asset Management Organisation" (check it out!) Charles has a long standing interest, as has Chris, in the competence of organisations, which is really what culture is all about. Both Chris and Charles took part in the small scenario workshop that I ran in London a few years back looking at the seven ways in which asset management might develop in the future.

Charles was an early entry in the "How I got started in Asset Management" profiles on the **amqi.com** website. HIs entry was the one that I found the most fascinating and it gives you a good insight into the way he thinks - and thus what you may be able to obtain from CAS' new venture.

From the "How I got started in Asset Management" Profile of Dr Charles Johnson.

I am not, nor have I ever been, an asset manager. So, how did I get started in asset management? The answer, of course, is chance. About 16 years ago I was doing some consultancy work on competence management with the Human Resources Director of a chemical company. This company is responsible for manufacturing and transporting some seriously dangerous chemicals around Europe. The HR director asked one day if we could put together some training for their senior managers in crisis management. They had plenty of experienced staff who could deal with emergency planning and emergency incident handling but no-one at the top of the organisation had had any training in corporate response or business

continuity planning. So, after some discussion, we agreed to build a computer simulation which could be used for training the senior team in media response and business crisis management.

At this point I will gloss over the problems of creating an interactive simulator that would work on old, 8-bit IBM PCs with only 64 KB of RAM or the extremely clever software that my fellow director wrote to make it possible. For me, the key thing was having to find out how their operation worked in sufficient detail to identify how a major accident might be caused, what the damage might be and the implications of the damage for other parts of the business, what would have to be done to recover from the accident, how much of their existing contracts they could still fulfil and how long it would take to get back to full functioning. Indeed, one of the scenarios the management had to contemplate was that they might never recover.

So, we had to discover or work out what design flaws might exist, where in the maintenance regime errors might arise, how production and transportation systems might be disrupted, the possibilities for moving production elsewhere or using alternative transport, the costs of repairing or replacing damaged plant, and so on. Then we had the pleasure of, virtually, blowing up a railway tunnel in the UK or, on another occasion, partially destroying a chemical plant in Germany, and watching how the management team coped.

In the next few years we developed similar systems for other chemical companies, a pharmaceutical company, the IT division of one of the UK high street banks and the military. So, I suddenly found myself as an occupational psychologist knowing more than, in some cases, I really wanted to about the management of all sorts of physical assets and about how processes and procedures should be designed and staff trained and developed to optimiser the use of those assets.

OTHER GROWTH OPPORTUNITIES

The 2014 International Symposium Next Generation Infrastructures will be held in Vienna in September. It is unlikely that many readers will be able to attend, but you can all put your mind to the Grand Challenge issued to 2014 participants:

"Can we imagine resilient infrastructure systems that can meet the needs of twice today's population with half today's resources while providing better liveability for all?"

And don't forget the IPWEA Sustainability Conference in July

By the time you read this, the **first Delft Course on Next Generation Infrastructures** will have been completed - and what a fantastic course it was! An announcement of this course was made in SAM Issue 389 (April 24) but if you missed it, keep your eye open for the next repeat (or see what else there is here that will enable you to grow as an asset manager - www.edx.org/course-list/allschools/allsubjects/

Here, as an example of what you will get, is an excerpt from the 4th lecture of Week 1, on demarcating an infrastructure problem. I have selected it for a number of reasons:

1) I so frequently talk to both asset managers - and consultants - who are unable to tell me what the problem was that they were addressing when they undertook their last project.
2) It is a fundamental technique that can be understood, used and appreciated without studying the entire course.
3) Given that this is in Week 1 of the 8-week course, imagine how much more you could learn! (Especially when presented in video, with transcript, downloadable slides, movie excerpts, and the benefits of a wider context).

Before you start to analyse your problem
- make sure you are working on the right problem!

What do you suppose is the probability that the problem you first thought of is not the most important for you to be working on? Would you believe close to 100%? Here is a systematic method from the Delft 'Next Generations Infrastructure' Course that could prove a life saver for you. Before you start the next big project or before you let the next consulting contract, consider the information in the next few pages. If you are a consultant working for a client, check that the problem already defined is in fact the client's chief concern. How? Read on.

PROBLEM DEMARCATION

Problems can be formulated at different levels. Choosing the right level from which to start the analysis is not always easy. But it is important because the level at which a problem is formulated largely determines the aspects/factors and possible solutions that are taken into account. A detailed analysis of the problems is necessary in order to define appropriate and the effective measures.

The following is from my notes from Delft's MOOC Course. Also see "Policy Analysis of Multi-Actor Systems" by Bert Enserink et al (Pieter Bots, one of the authors, presents the course)

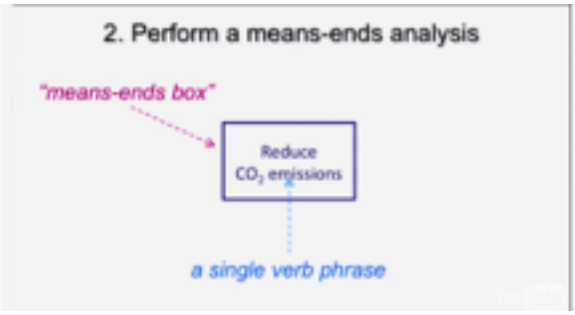
Firstly, **Why demarcate?**

1. It is in your client's interest that you establish what is the problem that is most relevant to analyse.
2. It helps you be efficient; a good problem demarcation helps you look only into the issues that matter and that you do your analysis in adequate detail
3. It helps you to be accountable for your findings.

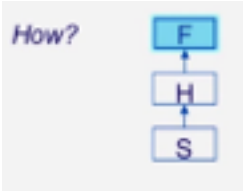
By demarcating the problem you make clear to your client what will be the scope of your analysis, in other words, the things that you will consider and also the things that you might have considered, but decide to ignore. This allows both you and your client to reflect on how this will eventually limit the conclusions that you can draw and the recommendations that you can make.

1. **Start with something that your client wants to change or considers doing.** For example, the Port of Rotterdam may wish to (1) Reduce CO2 emissions (2) Increase capacity of container stacks or (3) deepen the harbour. Pick one, any one! The process is the same for each objective and you will eventually do all in order to settle on what is most important.

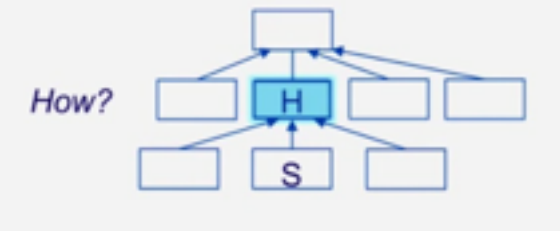
2. From this starting point **S** perform a **means ends analysis**. Start with a 'means-end box' using a single verb phrase. This is something that the client wants to do, such as 'Reduce CO2 emissions'. **Then ask 'Why?'**



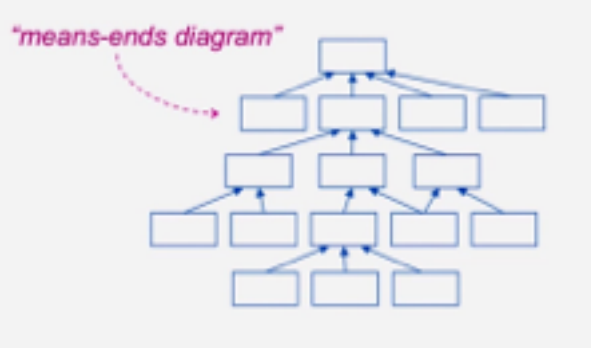
3. By answering your "why" question for your starting point S, you get a higher level "means-ends box". You draw an arrow to indicate that using means S will help achieve the higher level end H. You then ask "why does my client want to achieve H?", which will produce again a higher level means-ends. You repeat this until you reach your clients' fundamental objective -- label that F. You can now start to ask the "how" questions.Start from the top, that is from objective **F** (because lower order objectives are in fact means to this end)



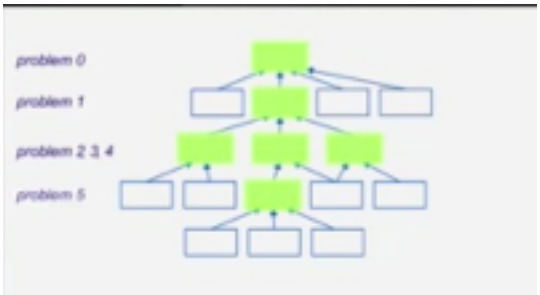
4. Asking "**How** can my client achieve this?" for each means-ends you have discovered forces you to consider alternative ways in which your client may achieve its ends. There may be other means, in addition to H, by which your client can achieve F. Likewise, there may be more ways, in addition to S, to achieve H, and possibly your



client should focus on these. By continuing to ask "how?", you may discover that your client has a wide range of means to achieve its ends. At some point, you should stop, typically when the means become very detailed and operational. By that time, the boxes and arrows that you have drawn form **a means-ends diagram.**

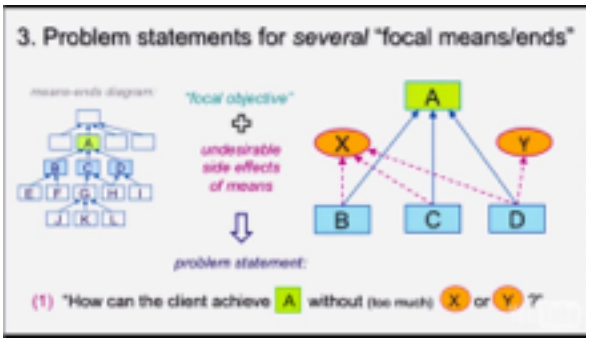


5. The next step is to **use this diagram to systematically develop alternative problem statements.** In principle, you should consider each box in the diagram that has boxes connected to its bottom, because that indicates that your client has the means to achieve the end in this box.In this example, there would be six. These six then give six alternative problems.



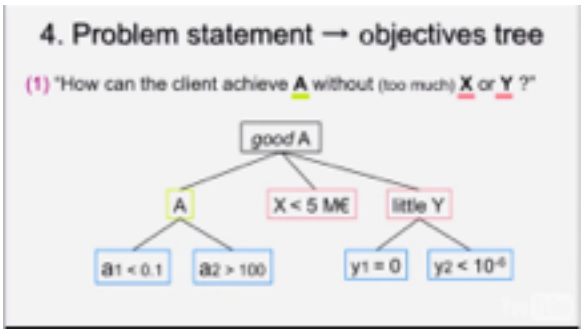
6. A good problem formulation expresses a dilemma or trade-off. In a means-ends diagram, however, every box is an end, that is, something desirable for your client. So we must now also look for bad things.The way to do this is to ask yourself "what are the undesirable side-effects of my client's means?" First, you pick a box in the means-ends diagram and take this (for now) to be the client's focal objective.The diagram will then give you the means that your client may use to reach this objective. For each means, you then consider what side effects may occur when your client would use it. Means usually cost money, but you will often find other side effects as well: there may be safety issues, environmental issues, and so on.

7. The focal objective together with the undesirable side effects of the means to achieve this objective will produce a **good problem formulation**: "How can your client achieve one without causing too much of the other?" You can do this for each box in your diagram, provided that it has boxes connected to its bottom. Maybe B has the same two undesirable effects as A, or maybe it has others. These need to be identified. Each time the question is: "How can the client achieve B without too much X or Z (or Y)?" We can do exactly the same for the other means to achieve A. Each time we look for undesirable side effects to identify the tradeoffs involved.



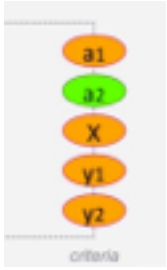
8. Each of the boxes that have other boxes linked to the bottom of it - thus showing that there are the means to achieve the ends stated in the box - lends itself to a 'problem statement' of the nature "How can we get the end without too much of the undesirable side effects'.

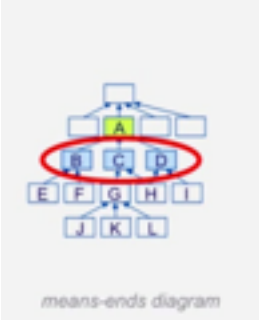
9. Some may be more pertinent than others and you may, at this stage, decide to put some aside till later. For each of the problem statements that remain, the next step is to operationalise what we mean by 'too much'. This is the construction of an '**Objectives Tree**"



10. Here the goal is to achieve A without too much X or Y. How do we know when we have achieved A? What is too much X and Y? If these cannot be measured directly we will need to find proxies. Good A is the end, it is what we want. Let us assume here that our proxies are a1 and a2. To be successful we want a1 to be less than 0.1 and a2 to be greater than 100. Let us say that our two undesirable effects in this case are X, which is cost and can be measured directly while Y will again need proxies.

11. **By defining the criteria, we actually define part of the boundary of the system** that we should consider when analysing this problem: In our analysis, we should establish how strongly the means of our client will affect the criteria. So our objectives tree provides the right-hand side of a system diagram - the criteria by which we will evaluate. Remember that the sole purpose of an objectives tree is to define crisp, **measurable** decision criteria for the client. A good objectives tree thus operationalises the desirable and undesirable factors in the problem statement. In this example: A, X and Y.





12. Likewise, the means-ends diagram provides the left-hand side - the options we have for achieving our goals. If we do this for each of the alternative problem statements, we get an overview of alternative ways of demarcating the client's problem.

13. **The task is now to compare and choose.** Starting from one salient issue, means-ends analysis reveals a broad range of problems that you could focus on. By doing a quick scan of each problem, you can then make an informed decision about what is most relevant for your client. Remember: you do your analysis for your client. After all, it is all about your client's problem! If you are an asset manager, the client is your own organisation. If consultant, then a client is a client!

14. **WARNING** Even if you intend to call in a consultant to do the project you have in mind, it pays to do this preliminary analysis first to avoid wasting valuable time and money. If you are unable to do it yourself, consider a small consultancy to do it for you. To avoid conflict of interest and a tendency to choose the means with which the consultant may be most comfortable, do not use the same consultant to determine the problem as you plan to use for the analysis itself.

15. Although the process can be explained quite simply in a few pages, in practice, it will take several days of iterative discussions between you and the client to develop the full range of information that you need. But if you are going to spend several weeks (or longer!) analysing the problem, it pays to take those few days to make sure that you are analysing the **right problem.**

This may give the impression that problem demarcation is easy, but what can be explained here in a few moments can take days of close and iterative discussion with your client.

Here, to put a bit of flesh on these bare diagrammatic bones, is a part of the example that the course provides for the Port of Rotterdam. At the beginning we suggested that the Port might be looking at one of three opportunities; it might wish to (1) Reduce CO2 emissions (2) Increase capacity of container stacks or (3) deepen the harbour.

Starting with the initial aim to reduce CO2 emissions, we ask Why? Why would the Port of Rotterdam seek to reduce its CO2 emissions? Well firstly, the Port wants to gain recognition as the world's "greenest" port. Becoming CO2-neutral is instrumental in obtaining this "eco-image". But at the same time, assuming that industries have to pay for their CO2-emissions, providing CO2-neutral services will also reduce the cost for new companies that consider making large capital investments the Port area. So why would the Port of Rotterdam want to improve its eco-image and reduce cost for investors? Simply: to attract more business to the Port of Rotterdam. That is, after all, their main concern.

Now you can start asking 'How' questions. How can the Port of Rotterdam make itself more attractive, in addition to being the world's greenest port and offering the prospect of low CO2 emission costs? The Port then tells you that potential investors also want the prospect of ample space for expansion, and - of course - that the port can provide industrial services that meet the highest standards. To create space for future expansion, the port not only develops new areas, such as the second Maasvlakte, but may also consider redeveloping existing industrial sites that near the end of their economic life span. To improve its eco-image, the Port may also try to phase out polluting industries. To reduce costs for investors, the Port may also lower the rent and fees it asks from companies, or increase efficiency by investing in upgrading its infrastructures, such as quays, roads, and pipelines. You then observe that improving infrastructures will also improve the quality of service. But the Port will say that in addition to the "hardware" it also needs to improve logistic services.

You can see that by asking many Why and How questions you have gained a much better understanding of the many ways in which the Port of Rotterdam strives to be Europe's preferred port. It puts the issue of reducing CO2 emissions in perspective, and it may lead to a change of focus for your analysis. **OK. Try it yourself for your organisation!**

THE IMPORTANCE OF A MAINTENANCE SKILLS STRATEGY

If you don't have a strategy for managing the ongoing development of your maintenance skills, just about anything else you do in asset management will be just so much empty words! Maintenance Skills Crises around the world are becoming endemic and we need to address them urgently.

I can't think of anyone better for this task than **Joel Leonard, known in the USA, as the "Maintenance Evangelist"**. There is surely no-one who has so passionately devoted his life to the improvement of maintenance skills across the world and I guarantee that once you have met him, you will never forget him - or his ideas!

His expertise in the field of maintenance & strategic direction setting is such that the White House are actively working with him to develop strategies for their approach to this serious issue across the USA. And now you have an opportunity to see why.

SIRF Round tables
present
Joel Leonard
in a series of workshops
"Fighting the Maintenance and Skills Crises"

Auckland, Monday,18th August 2014	https://www.sirfrt.com.au/booking/3844
Hobart, Tuesday, 19th August 2014	https://www.sirfrt.com.au/booking/3867
Broadmeadows, Wed 20th August 2014	https://www.sirfrt.com.au/booking/3866
Adelaide, Thursday 21 August 2014	https://www.sirfrt.com.au/booking/3845
Perth Friday 22 August 2014	https://www.sirfrt.com.au/booking/3868

8:00 for an 8:30 start, concluding at 16:00

FOR: Asset Managers, Operations Managers, Plant Managers, Maintenance Managers, Human Resource Managers, Business Owners, Quality Managers, Economic Developers, Workforce Developers

Purpose of Workshop:

Fighting the Maintenance and Skills Crises is a course designed to identify and prepare for maintenance skill and personnel gaps in your organisation. This course will help you to forecast your needs, attract a new workforce and transfer the existing knowledge to the new workers…..before its too late.

Whether you are already challenged by finding qualified workers or just needing to understand what future problems you might be faced with, this no-nonsense course will help you develop a plan to retain your valuable assets and develop a new team to assure your facility or plant continues to run smoothly.

Agenda

The Real Purpose of Maintenance
The Maintenance & Skills Crisis
Impact of Poor Maintenance
The Ageing Workforce Dilemma

- Corporate Lifecycles
- The Difference Between Ageing and Growing Environments
- Understanding our workforce and getting the best out of it

Forecasting & Planning Maintenance Workforce Needs

- Reactive vs Planned maintenance & matching workforce capability
- Tools for Forecasting & resource balancing

Transferring Knowledge to the New Workforce

- How to set up Break Through Training to help advance current workforce
- Managing effective knowledge transfer to new employees

Identifying and Attracting the New Maintenance Workforce

- Where is the New Workforce Today and What Do They Want?
- Where will they come from? Traditional trades training, other non-traditional fields?

Developing a Maintenance Plan for an Uncertain Future

- The Role of the Maintenance Manager
- Customised Plan Development for each attendee
- Help attendees work to implement strategies to build the next generation of skilled technicians.

About the Instructor:

Joel Leonard is the Chairman of the National Defence Manufacturing Workforce Committee. He also holds the positions of International Vice President of Membership of the Association for Facilities Engineering and serves as a Council Member for the Council of Competitiveness. He has spoken at US Congressional Briefing on Workforce Skills in Washington D.C.

Joel is a graduate of Elon University and founder of SkillTV. With over twenty years experience in the maintenance and workforce development sectors, he is passionate about the need for companies to promote maintenance as sound career choice for young workers. He has spoken at many maintenance conferences and assisted many companies to improve their strategic direction with respect to employee recruitment, development and retention programs. His knowledge of engineering systems and best practice / direction setting is extensive so it's a great opportunity to learn from and interact with a global expert in the field.

Investment: $900 member rate. $1,200 non-member rate (25% discount for 3 or more)

For further details contact: Jeff Naylor 0409 535 239 jeff.naylor@sirfrt.com.au