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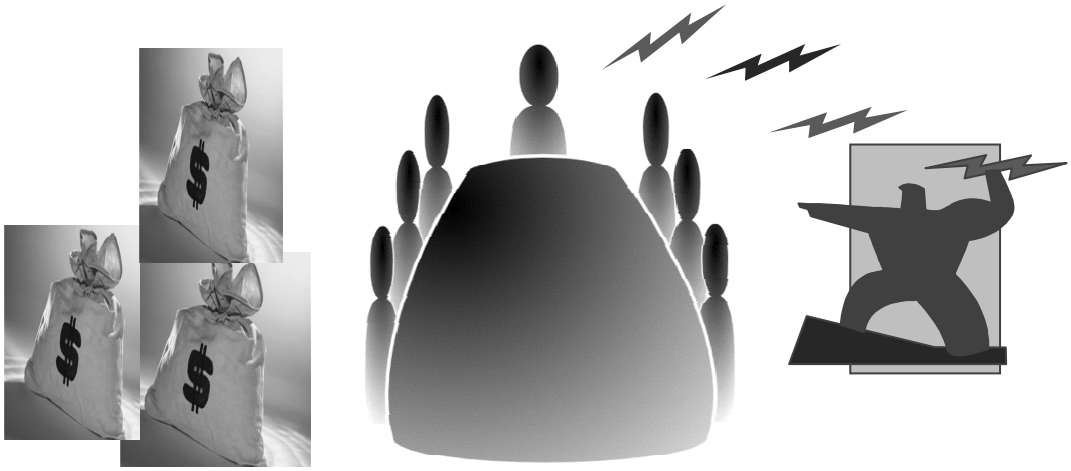
Good Governance and Good Engineering
– do they really go together?



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1. Introduction:

A key issue for engineers is to understand what the board does, how it should operate and how to communicate meaningfully with directors though the senior management (CEO) of their organisation. I believe that engineers need to understand the "language" of governance and thus be able to present their engineering problems and solutions for considered review and to respond to directives/proposals so that the impacts are fully understood.

This paper considers the issue of Corporate Governance of a company and the relationship and impact this has on the activities of the engineer(s) working in that company.

The focus is companies in the electrical power industry, recognising they have their primary investment in "engineering works" be they generation plant: lines and substations; or metering and associated equipment.

2. Defining Good Engineering and Good Governance:

2.1. **Good Engineering** (More than doing for $1 what any fool can do for $10)

Over time there have been many attempts to define "good engineering" or "good engineering practice" however examination shows that rather than there being an absolute fixed definition there is an evolving one, generally becoming more complex, but primarily reflecting changing societal expectations. For example, an early definition of good engineering for a road bridge would cover only a few issues – carrying the specified load: bridging the required gap and being built to the agreed budget. Today there will be additional factors such as minimal impact on the environment, not damaging culturally sensitive sites, aesthetics (blending into the landscape), "whole of life" costs (both financial and environmental), all aspects of safety – during construction and operations, both for the public and workers, etc.

2.2. Good Governance (More than extracting the biggest dividends)

The same is true when trying to define "good governance"; the earliest definition would have simply identified ensuring the investors (shareholders) got the best return for their investment. Current definitions reflect societal expectations and are more complex. The following is taken from the Business Dictionary[i]: -

> *"Traditionally defined as the ways in which a firm safeguards the interests of its financiers (investors, lenders, and creditors). The modern definition calls it the framework of rules and practices by which a board of directors ensures accountability, fairness, and transparency in the firm's relationship with its all stakeholders (financiers, customers, management, employees, government, and the community). This framework consists of (1) explicit and implicit contracts between the*

firm and the stakeholders[1] for distribution of responsibilities, rights, and rewards, (2) procedures for reconciling the sometimes conflicting interests of stakeholders in accordance with their duties, privileges, and roles, and (3) procedures for proper supervision, control, and information-flows to serve as a system of checks-and-balances."

The development of a separate board of directors to "manage" the company has occurred incrementally and indefinitely over legal history. Originally all "powers" were viewed as being held by the shareholders and exercised at shareholder meetings, primarily the AGM. However legislation has gradually changed this approach and responsibilities are spread across the board, management and individual professionals including independent advisors.

The Institute of Directors in New Zealand (Inc) (IoD) in its publication "The Four Pillars of Effective Board Governance[ii]" ("The 4 Pillars") puts forward the proposition that corporate governance is "all about value"[iii]. The IoD defines good corporate governance as; -

> *.....for boards and directors as the effective separation, management and execution of the relationships, duties, obligations and accountabilities that constitute an entity's existence such that the entity is best able to fulfil its fundamental purpose. Corporate governance for boards and directors does not exist as an end in itself; it exists for a purpose. This purpose must be to make the entity's attainment of its fundamental purpose (articulated by the company and subscribed to by its shareholders and other stakeholders) more likely in prospect or greater in deed[iv]"*

It also states; -

> *....good governance exists to add value. Without it an entity is unlikely to survive or fulfil its purpose[v].*

Of particular note is the inclusion of stakeholders, not just shareholders, which significantly broadens the responsibilities of the board when discharging its duties by requiring the board to consider the wider implications of any decision on all parties impacted by the decisions. (See footnote 1 for definition of Stakeholder") .

3. Best Practice for Asset Management:

Originally published in 2004 the document PAS 55-1 "Asset management. Specification for the optimized management of physical assets" and its associated guidelines for application - PAS 55-2, have gained increasing acceptance around the world from all types of physical asset owners and operators. Developed in the UK it had substantial input from the power industry, including their regulator. The original document is still current but was updated in 2008 and there are current proposals to change it further to develop the PAS (Publically Available Specification) into an ISO Standard.

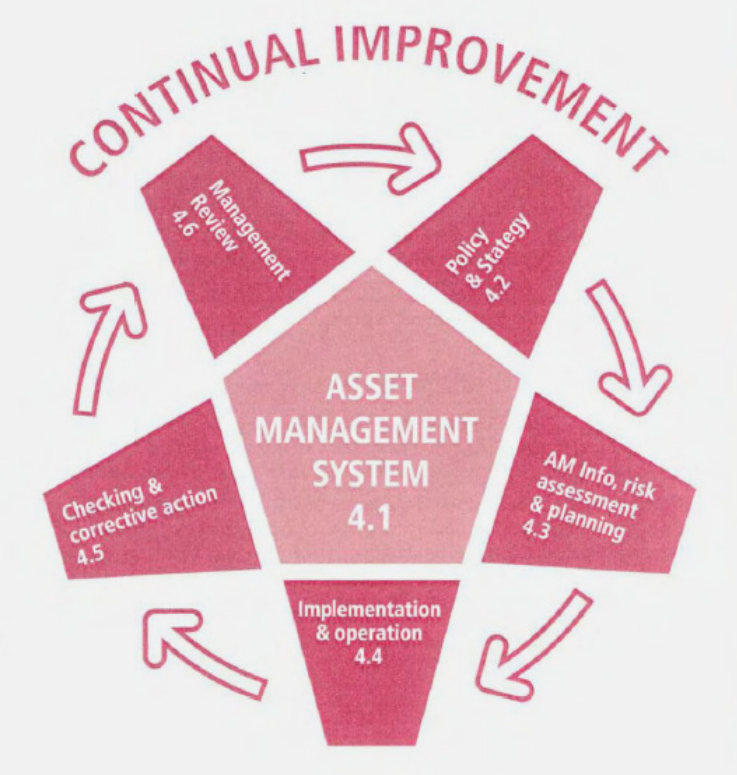
The key points to note from this document are their definitions of Asset Management and the associated definition of the organisational strategic plan[vi]:

[1] Key stakeholders in a business organization include creditors, customers, directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community from which the business draws its resources.

"Asset Management is defined as the systematic and coordinated activities and practices through which an organisation optimally manages its assets, and their associated performance, risks and expenditures over the lifecycle for the purpose of achieving its organisational strategic plan"

"The organisational strategic plan is defined as the overall long-term action plan for the organisation that is derived from and embodies its vision, mission, values, business policies, objectives and the management of risks"

It is particularly worth noting that the underlying approach is one of continual improvement as illustrated by their diagram[vii]: -



The Board is responsible for setting Strategy and Policy (i.e. section 4.2in the diagram) .The continuous improvement approach clearly establishes that the ongoing setting of Policy and Strategy should take account of the (management) feedback generated from the implementation of the previous Policy and Strategy through the planning, implementation, operation, and checking, etc, on the assets and their performance.

4. Best practice for Governance - The Four Pillars - How the Board adds value:

The Four Pillars of Effective Board Governance (and thus adding value) promoted by the IoD are; -

1) Determination of purpose – i.e. what the company exists for – goals and strategy.

2) Governance culture – dealing with the right issue at the right time.

3) Holding to account – ensuring purpose and strategy are understood by management and holding them to account for delivery – but not doing management's job.

4) Compliance – including ensuring risks are identified and managed.

Each of these will be considered in turn, identifying how they relate to the engineers[2] in the organisation.

5. The "Four Pillars" and Engineers:

5.1 Determination of Purpose: - Pillar 1

Whilst boards can adopt a wide variety of processes in developing the company strategic direction and what its goals should be, best practice encourages a wide view and wide range of inputs to the chosen process. Particular emphasis is placed on "stakeholder interests" with a comment that "*a company's long term survival and prosperity are closely intertwined with the environments and markets with which it operates*[viii]"

PAS 55 notes that it is *"specifically intended to cover.....where the success of an organisation is significantly influenced by the stewardship of the assets*[ix]".

It identifies the need for "top management" to develop the Asset Management Policy and associated strategy. However whilst "top management" may be charged with developing the material it is clear that endorsing them is part of the governance role under determination of purpose.

For an engineer this means that, for whatever area of responsibility they have, they need to review and develop material to feed into the strategic development process. Presenting the "big picture" issues and opportunities associated with their area, i.e. to inform the process.

Whilst trying to do this in isolation, from scratch, is difficult, most power industry organisations have already been through the process several times and the engineer has available previous versions of documents, etc which can then be reviewed. Making it possible to identify the impacts on the given engineering area and thus develop proposals for improvement in the policy, goals and strategy. PAS 55 give good advice and suggestions for content, see sections 4.3.4 and 4.3.5.

Note that whilst this area of input is critical it will not guarantee that when you put your pet project forward it will instantly get the big tick to proceed! The focus of this pillar is longer term and other factors may influence decision making in the short term.

[2] The term engineer is used irrespective of the job title as common practice in many organisations over recent years has been to replace "engineer" with "manager" for more senior positions

5.2 Governance Culture: - Pillar 2

Much of this pillar is concerned with the functioning of the board and the individual directors with a strong focus on the issue of ethics including disclosure of conflicts of interest. It includes guidance on a wide range of issues such as meeting management, director selection and skills[x], etc.

For an engineer there are two specific items from the pillar to consider. The first covers culture and the second aspects of a director's competencies.

The issue of "culture" at board level is critical, it sends a strong signal to senior management and thus the wider company. The chair is singled out as having special responsibility in leading the board and setting the culture. Whilst a very strong emphasis is placed on "ethics" this is only one aspect of the wider aspects: -

> *".....a culture of capability, accountability, independence, trust, diligence and candour[xi]"*
>
> "*.....characterised by effective relationships within the board and with management, shareholders and stakeholders[xii]"*

Further:

> *"....dissent is not seen as disloyalty but as a requisite quality. .....The danger of "group think" is minimised". ..... "dissent is not viewed negatively[xiii]..."*

The message for the engineer is to monitor the culture of the organisation and then to respond appropriately. Hopefully the board will be following the four pillars best practices and this flows through the organisation such that they are able to challenge past practices, approaches etc to stimulate debate in the search for the best solutions. But note this is not a licence to "slag off" anyone - past or present – it is an opportunity to present carefully thought out and logically argued options drawing on facts and data.

In terms of setting a "culture", the whole focus of PAS 55 -1 is the adoption of a "continuous improvement" process[xiv] , this is not an end in itself but to benefit the organisation, i.e. to add value.

Good engineering supports the concept of "debate" – the challenging and testing of existing positions and views to ensure that as information or requirements change the best engineering solution is adopted –even where this means changing what has been "best practice" till then.

The second item from Pillar 2 is the issue of directors' competencies covering a new directors' induction and ongoing development of directors. The issue of competency is summarised: -

> *"Directors are required by both law and good corporate governance practice to always act in the best interests of their company. However they are unlikely to be able to do so unless they have acquired first a good understanding of their company and the industry and environment in which it operates.....[xv]"*

Further references are also made to ongoing development of skills and knowledge.

For the engineer the visit of a director as part of an induction program should be a welcome event - if you know a new director is being appointed offer to host them .This is definitely not an opportunity to ear-bash the director with your pet gripes about the company. Rather it is an

opportunity to educate them about the work carried out by your team and its impacts on the business and stakeholders.

Be sure to use appropriate language; look to be able to provide explanations by comparison with common knowledge (e.g. water flow and electricity flow); present information in ways that they will be interested and understand (e.g. show what the effect of something is on customers, not the electrical effect); prepare material carefully and have copies available to take away.

5.3 Holding to account: -Pillar 3

The Board normally only makes one appointment –the CEO – and it is through "holding to account" of the CEO that the board receives the information it needs to perform its duties. However, reporting is not just of financial data, the four pillars identify the need for information on the operational performance, competition and benchmarking, the market and capital expenditure.

Whilst it is the latter where most engineers focus, for success with proposals it is important to ensure the other areas are functioning properly.

Operational performance requires good information systems and data – which should already be used for capital decision making. The engineer should however be looking at what the operation report is presenting to the board to check that it is adequately describing the performance of their assets using terms that can be understood and are in sufficient detail for the directors to make meaningful judgements and decisions. For example in a network company the use of SAIDI and SAIFI are common – but it is much better to spell out what they mean, e.g. "on average our network, customers suffer X outages lasting Y minutes each year. Whilst an overall network figure has some uses, reporting on the best cases and worst cases provides better information for the directors – or how about an annual breakdown by suburb? (not by "zone sub" which means little to others), in other words take the trouble to turn the data to a commonly recognisable area.

The provision of a suitable asset management information system is the theme of the PAS 55 section covering the asset management system[xvi] and this is reinforced by the sections on documentation and information control. It is further reinforced by the section on Audit[xvii].

Similarly, analysis of competition and benchmarking offer an opportunity for the engineer to present information to show where attention to the assets may be justified. Rather than being reluctantly dragged into the benchmarking process the engineer should be actively promoting it and looking to ensure it provides the information needed. Knowledge of the market is important as it may help identify a potential problem before it becomes an issue – is the latest gadget going to be susceptible to network issues that customers were not aware of?

The four pillars provides solid guidance on the question of capital expenditure decisions stating that "*wise capital expenditure is critical to the future of the business*[xviii]". It is recommended that a copy of the full section is obtained and carefully read, the main points are: -

- Justifications must be thorough, clear and backed up.
- Every proposal should be measured against the company strategy.

- The scope should include technical & financial analysis as well as assessment of risk and wider consequences.
- It should be pitched at an appropriate level (watch technical terms etc) – explain how it adds to stakeholder "wealth"
- Assumptions must be clear and if possible their sensitivity tested

Perhaps the simplest summary is to present the full picture in terms that can be understood – a good aim for any engineering report.

5.4 Effective Compliance: - Pillar 4

Whilst much of this section of the four pillars is concerned with financial matters a key section from the engineer's perspective is that on "risk management". Over recent years many organisations have recognised the importance of risk management and this is visible in many traditional "audit committees" are now "audit and risk committees", usually meeting much more frequently than in the past.

Most companies in New Zealand adopted the processes developed in AS/NZS 4603 Risk management, which has new been superseded by Risk management – Principles and guidelines ISO 31000:2009.

PAS55 provides good outlines and guidance on risk covering identification, assessment and control for assets[xix]. Legal & regulatory requirements are also noted[xx] , these can be of particular interest to the board as whilst they may hold "Directors and Officers" Insurance to cover them against financial claims there are several areas (e.g. environmental damage) where directors are liable to jail sentences and insurance cannot provide a "get out of jail free" card.

Whilst an engineer should look to provide input into the complete risk management process it is when looking at the "Consequences" aspects of an event that there is an opportunity to help increase the understanding of the impact of asset events. This will vary depending on the assets but considering a lines company there are a number of issues to consider.

Consequences are usually split into: - "Financial" – impact on the company; "Human" – fatality/injury; "Business Interruption" –on the company; and "Reputation and Image".

The latter, "Reputation and Image", is of particular interest as it moves the focus from the impact on the company to looking at the impact on the wider community – i.e. the stakeholders. Whilst care is needed not to overstate these wider implications they can be far reaching. The public, well primed by the media, are becoming increasing adverse to events that impact on them where they are caused by third parties –or when a third party has "accepted" a risk on their behalf. From an examination of the statistics the likelihood of having an overhead line fall onto a house is much less than the likelihood of being injured crossing the road , but you can be sure which one gets into the newspaper.

A typical set of descriptors for the Consequences from a "Reputation and Image" view point looks like: -

Description	Reputation and Image
Catastrophic	Reputation severely affected at national level
Major	Substantial embarrassment including adverse media coverage
Moderate	Stakeholders or local community concern, major local media coverage
Minor	Issue raised by stakeholders or local media
Insignificant	Issue resolved promptly by local management

A useful tool here (mainly for networks) is VoLL (Value of Lost Load) which looks to measure the impact of a network incident in terms of the financial impact on the wider community.

Whilst there are usually disputes about using it as a pure financial measure, (your accountant will quickly tell you –it does not appear on the company books – I'm only interested in the dollars it costs me!), I believe it is a very useful tool to help look at the reputational and image damage as it can "scale", in dollar terms, the impact of an event.

For those organisations exposed to the stock market it could be possible to work out a relationship between the VoLL for increasing impacts of incidents against the downward movement in share price – something a director is very interested in.

6. Summary

The key message to be taken from the above is a simple one – communication.

In this case the focus is on communication between engineers and directors. However the message is really a general one – if you wish to ensure that your messages get through and are fairly evaluated - then you need to think like the person you are communicating with, and seek to use the language and illustrations they will understand. This may take a little effort, but the rewards are great.

Endnotes

[i] Business Dictionary http://www.businessdictionary.com/definition/corporate-governance.html

[ii] Principles of Best Practice for New Zealand Directors - "The Four Pillars of Effective Board Governance " Published 2007 – Institute of Directors in New Zealand – PO Box 8017 Wellington

[iii] Ibid p2

[iv] Ibid p2

[v] Ibid p3

[vi] PAS 55-1 "Asset management: Specification for the optimized management of physical assets" p V

[vii] PAS 55-1 ibid p3

[viii] Four Pillars ibid p12

[ix] PAS 55-1 ibid p V

[x] Four Pillars ibid p26 –p48

[xi] Four Pillars ibid p20

[xii] Four Pillars Ibid p3

[xiii] Four Pillars ibid p20

[xiv] PAS 55-1 ibid p12 section 4.6

[xv] Four Pillars ibid p49

[xvi] PAS 55-1 ibid p5 section 4.3.1

[xvii] PAS 55-1 ibid p12 section 4.5.4

[xviii] Four Pillars p84

[xix] PAS 55-1 ibid p5 section 4.3.2

[xx] PAS 55-1 ibid p5 section 4.3.3