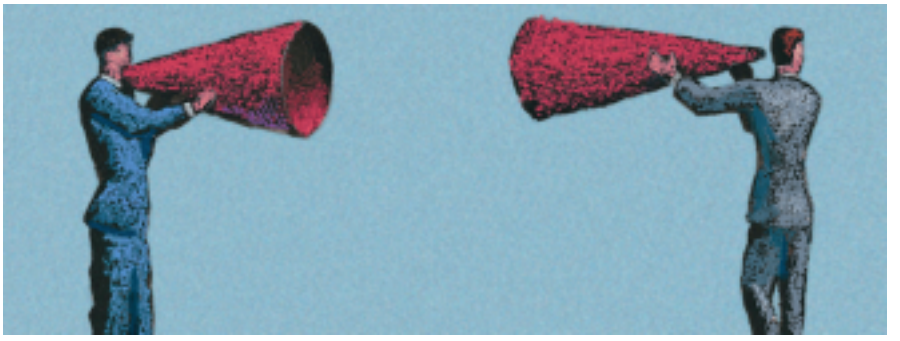
VIEWPOINT

Engineering governance on the rise

By Kim Allen, P.Eng.



Setting corporate goals in strictly engineering terms, rather than with the simple "bottom line" model, would reap tremendous benefits on the policymaking front. It might also mean an improved public perception of engineers.

There is an inter-relationship between the notion of "engineering governance" and the way the general public regards professional engineers.

Effective change from the top down is in order for a profession dedicated to better protecting the public, and which has aspirations to change the way the public views engineers.

Consider for a moment the following question: Should the *Ontario Business Corporations Act* require directors to "balance the books" in terms of engineered impacts on stakeholders? Perhaps the question isn't as far-fetched as some would think. For if corporations could incorporate a full engineering system in decision making and resource allocation, we would see improved sustainability, and an enhanced image of engineers among the key outcomes.

Conformance versus performance

Over the last few years, the concept of governance has emerged as an idea that has some usefulness in defining the strategic processes and structure of an organization. In Ontario, most of the debate about governance has been focused on the conformance aspects–the systems in place to ensure that statutory and legislative requirements are met.

However, there is another dimension to governance–and that dimension, simply stated, is performance. To date, much of the performance side of corporate governance has been measured through a standard accounting or "bottom line" paradigm that still pervades management. This system provides feedback to the board and shareholders about 90 days after events have occurred.

Most companies have set their goals in accounting terms, and the control, monitoring and reward systems have been similarly structured. Perhaps it's time to consider models other than the bottom line. For example, has there ever been an engineering and technology paradigm applied to governance? In the composition of many of the boards of Toronto Stock Exchange-listed companies, engineers are not as predominant as lawyers and accountants. As such, how do these bodies know when their engineering is being properly managed?

Most public companies have a chief financial officer and a chief legal advisor, but how many have a "chief engineer?" Are there systems in place to ensure that their engineering is managed properly? Should an annual engineering audit be performed and reported to shareholders?

Moreover, those responsible for engineering may be in a difficult position. On one hand, they have responsibilities directed toward the company's financial goals. But on the other hand, there are additional responsibilities they bear as engineers. In many cases, these two sets of responsibilities do not conflict–good engineering is good business. On occasion, however, there are conflicts between financial and engineering responsibilities. Engineering generally has a long-term focus. It can have a higher capital cost, but lower operating costs. Many organizations, particularly when under financial stress, adopt a short-term focus, which can lead to poor capital investment decisions. The engineering manager is required to respond to these kinds of conflicts.

Recent examples

A couple of real-world examples–last summer's massive power failure, and the subsequent re-organization of the electricity generation and distribution sector in Ontario–help illustrate the potential of the engineering governance paradigm.

The initial power failure and the inability to restore power in a timely manner were linked, in some measure, to a lack of engineering systems approach within the bodies responsible for reliable electricity generation and distribution. And as I noted to Ontario Energy Minister Dwight Duncan at the creation of the Ontario Power Authority last spring, "the ongoing energy crisis in the province suggests the possibility of a policy failure traceable to a lack of engineering governance responsible for delivering a reliable electricity supply."

At the time, PEO reminded the energy minister that the association stands

ready to assemble an independent, expert working group from among licence holders and members of learned societies, to examine the adequacy of engineering governance within the major entities responsible for ensuring a safe, reliable power supply to all Ontarians.

Had the ministry chosen to take up PEO on its offer, the following set of questions could be used to help establish the framework for an engineering governance paradigm:

- Is there a person at the board (entity) level responsible for engineering-related issues?
- Does the board understand the engineering challenges and roles facing the entity?
- Are the directors required to "balance the books" in terms of engineering impacts on stakeholders?
- Is an annual engineering audit performed and reported to stakeholders?
- Are there systems in place to ensure that engineering is managed properly?
- Does the board know when engineering is being properly managed?
- Is engineering performance monitored?
- Do the entity's engineering strategies align with its business strategies?
- Are management systems in place to encourage, monitor and reward engineering excellence?
- Are there policies in place to protect engineers who exercise their professional duty to report and who might act as "whistleblowers?"

The question then becomes, what is engineering governance? One definition might include how an organization directs, manages and monitors its systems and engineering activities.

Engineering sense

Perhaps we can also take a more generic sense of engineering governance. It might be thought of as imposing an "engineering sense" on how we can get things done. Along these lines, I'm reminded of the recent words of Ontario M.P. David Zimmer, the parliamentary assistant to Attorney General Michael Bryant. Speaking at the PEO Annual General Meeting in April, he discussed the importance of engineers–and an engineering mentality–to infrastructure renewal initiatives.

"In terms of infrastructure renewal, we can't keep doing the same old things, the same old way," he said. "We can't keep walking backwards into the future. There's got to be a plan, there have got to be priorities, and there will be. And I submit to you that's where the mind of the engineer comes in–that rational, thoughtful, realistic, analytical skill set and thinking process that engineers bring to problems."

I don't think it's too much of a stretch to extend the argument for the engineer's role in infrastructure renewal to the entire governance question. Perhaps the qualities of engineers that the government hopes to tap into with its infrastructure renewal options can also be used to shine a more positive light on the public perception of the engineering profession. And, as in my blackout reference, it's not enough to show policymakers and the public that we're on the job when things go wrong. Let's instead seize the moment–making use of contemporary priorities and the public's increasing expectations for accountability and transparency, to argue that a new engineering governance model is right for the times.

To help organizations implement engineering governance, PEO has recently installed a process to assist companies in recruiting engineers for their boards of directors. The Greater Toronto Airport Authority and the CNR are examples of a couple of organizations that have used our service.

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