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Ten steps to managing strategic risk—a holistic approach

This paper presents insights and guidance for senior construction managers based on a three-year construction industry research programme called STRATrisk. The aim was to improve the way boards manage the risks that cause failure or significant loss of shareholder value. The research found a strong emphasis on behaviours and culture as the root cause of organisational complexity and investigated appropriate measures to mitigate the consequent failures. Some key principles were identified that should be applied to the management of strategic risk within the context of the relevant organisation. To assist implementation, a ten-step process has been developed from the research to help the boards and senior management of construction businesses introduce a more effective approach to managing their strategic risks.

Neil Allan
MICE
is senior lecturer in strategy at Bath University's management school

John Davis
BSc, PhD
is a reader in civil engineering at Bristol University

Patrick Godfrey
BSc, FREng, FICE, FInstPet
is professor of systems engineering at Bristol University

Strategic risks are defined in this paper as the system of future opportunities and threats that are so significant that they could materially impact the enterprise's achievement of its main purpose or even its survival.

All organisations are vulnerable to strategic threats to varying degrees despite their best efforts to manage them. A Deloitte research study of the largest 1000 international organisations found nearly half had lost up to 20% of their market value over a month-long period in the last decade, with the loss taking longer than a year to regain.[1]

Failure to understand the nature of strategic risks has caused a significant loss of shareholder value (e.g. Shell, Atkins, Kvaerner and Laing) and even corporate failures such as Railtrack, Enron, Arthur Anderson and Barings Bank. Indeed, based on past experience, 10% of UK companies will fail in the next ten years, despite having a credit rating.

When strategic threats deliver their worst, the results are devastating and long-lasting. This paper presents guidance on managing strategic risk, based on research conducted within the UK construction industry, although the authors believe the findings have a wider application.

The research provided an understanding of the factors and concepts that influence the management of strategic risks which, in turn, has informed the development of the ten-step process presented in this paper. When applied in context to an organisation, the ten-step process will help managers understand the nature of strategic risks and consequently reduce the likelihood of their occurrence, and provide a platform to make their organisations more resilient to their impact.

Key factors and concepts

The key factors and concepts in managing strategic risks are as follows.

- *People*. Appropriate cultures need to be developed to allow integration of communication systems and organisational learning. The board's strategic intent and purpose needs to be clearly communicated to the whole organisation.
- *Process*. The classic event-based, probabilistic view of strategic risk is inappropriate in complex, changing situations. Instead, strategic risks need to be treated as dynamic, adaptive processes operating inside complex systems not as discrete events. It follows that definitions of risk based on the idea that it is the chance or probability of any unplanned/unwelcome event are too narrow. An event may be the trigger but is seldom the root cause of a strategic risk.
- *Patterns*. Strategic risks sometimes appear random, unpredictable and chaotic, but actually there are patterns and the knowledge to detect them is nearly always available. There is a tendency for boards to look for the wrong thing or in the wrong way or at the wrong time.
- *Perceptions*. Key decision makers need a broader awareness of the dangers of 'group-think' and self-bias. They need additional techniques to generate understanding and debate.
- *Performance*. Opportunity is the flip side of risk. Organisations that develop a deep understanding of their strategic risks can also benefit from identification of new opportunities.

An action research approach[2] was adopted to ensure relevance of the research by engagement with industry, which, in turn, should increase the impact and learning of the key findings. Fifty director-level or senior decision makers were interviewed using a semi-structured approach, in which interviewees were asked to describe their organisation's approach to strategic risk and to give examples of when this worked and when it did not. Forty per cent of the interviews were with contractors, 30% were with consultants and 30% were with clients from government and industry. Extensive details of the background research methodology and findings can be found in the CD-ROM that is bound into *Strategic Risk—A Guide for Directors*.[3]

Significant to understanding strategic risk is Perrow's notion of 'normal accident theory',[4] developed from researching catastrophic technological accidents such as Bhopal and Challenger, which suggests system complexity—the cross-linking between many aspects—is responsible for failure, rather than a linear chain of interactions. However, the research found a stronger emphasis on behaviours and culture as the root cause of strategic risks and is more optimistic that organisational complexity and coupling can be managed.

Indeed, some organisations, through their culture and experience, are able to turn the risk from threat into opportunity. They seem to 'know what they do not know' and have robust strategies to turn potential loss into profit. The guidance in this paper is primarily aimed at organisations that operate in an environment where

- cause-and-effect relationships are separated over time and are only really coherent in retrospect
- individuals' behaviour can have a significant impact
- the pace of change (particularly technology) is rapid
- there are many interconnections between different parts of the organisation.

The research has shown that these complex dynamic behaviours are the source of most strategic risks, as emphasised by the following candid quote from a major contractor, interviewed as part of the research programme.

> 'There are some risks that you may not identify, may not even consider partly because you don't understand what it is that you are doing.'

Strategic risks and opportunities are different to operational and project risks, partly because of the scale of their potential impact but more importantly because they are part of the fabric of the organisation and its relationships. For example, loss of reputation is a strategic risk that flows from inside to the outside of the organisation and back again, and has no real beginning or end. Moreover, it depends heavily on people's perception and behaviour, which is difficult to measure statistically or manage. Traditional project risk management tends to view risks as being caused by events, typified by risk registers and probability-based techniques which do not address these issues.

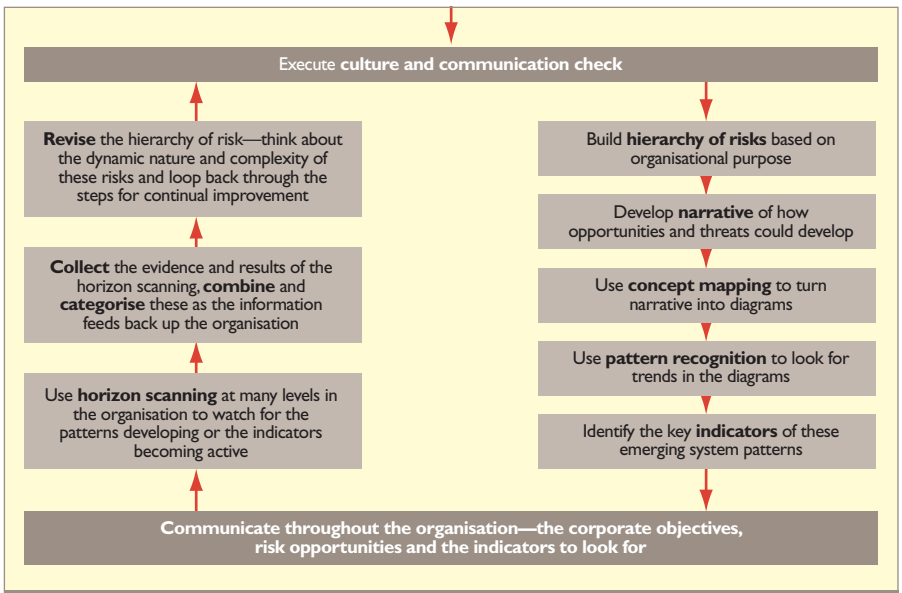

Fig. 1. The ten-step holistic process is designed to help construction businesses introduce a more effective approach to managing their strategic risks and opportunities

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Viewing strategic risks as dynamic processes in a system[5] allows organisations to

- understand the interrelationships between the various forces involved rather than simply foreseeing snapshots of events
- focus on areas of high leverage—small, well-focused actions can lead to lasting, significant improvements
- treat the underlying causes rather than the symptoms or trigger.

Ten steps to harness strategic risk

The ten-step holistic process (Fig. 1) is designed to help boards and senior managers introduce a more effective approach to managing their strategic risks and opportunities. It is a process for change followed by continual improvement and development.

The process begins at the top, with the organisation taking a step back and looking at itself. It progresses with a continuous improvement loop.

Culture and communication check

The research for this paper identified key elements of good practice. This came from interviews with 50 members of UK construction company boards.

- Good two-way communication, up and down the organisation—coherent communication of strategic intent and risks from the board throughout the organisation and then clear, timely, conscientious identification and categorisation of risks and opportunities to the top management teams.
- An appropriate open culture within the top management team that allows the communication flow recommended above.
- Diversity of experience and perception within the top management—this may need to be brought in from outside the organisation periodically.
- An improved forum for debate on key strategic risks that promotes inquiry not advocacy.
- Ownership of the strategic risks process by the whole board, even though one member may have special responsibility for the effective operation of the process.

According to one consultant,

> 'What we're trying to do is make the risk culture one of openness and non-threatening.'

The issue of diversity of experience and perception became a key discussion point. Apparently random and unmanageable risks can frequently be perceived and their consequences mitigated by incorporating diversity of experience in the decision-making team, perhaps by the inclusion of non-executive directors from varying backgrounds.

As one contractor put it,

> 'The non-executive directors are the people who spend most of the time talking in the board and that is what we like.'

A self-assessment checklist has been developed to help with the first part of the process.[4] The next step is to begin to identify the strategic risks themselves.

Hierarchies of risk

When the board first begins collecting together ideas on strategic risk, the list may seem endless. It is an unstructured amorphous mass of ideas on uncertainty, risk and maybe even opportunities. Practice has shown that the best way to manage and work with the list is by sorting it into a hierarchy with a standard taxonomy.

Figure 2 shows the top levels of the strategic risk taxonomy as the top of a hierarchy using a software tool. The importance of doing this is as follows.

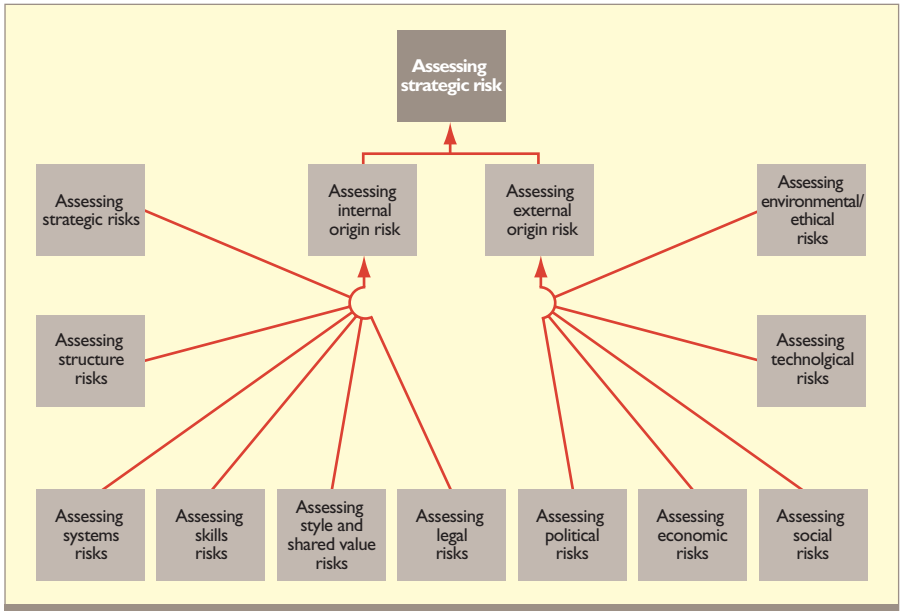

Fig. 2. Top levels of the risk hierarchy—this helps boards collect ideas on strategic risk

loss of reputation is a strategic risk that flows from inside to the outside of the organisation and back again

- The list becomes more manageable—boards can see how it all fits together and does not seem as overwhelming.
- Boards can build down to an appropriate level of detail. Fig. 3 shows the skills branch expanded.
- The apparently more insignificant risks appear down the bottom of the hierarchy. They are not dismissed; an eye can be kept on them just in case they suddenly increase in importance.
- Different levels may be considered at different levels within the organisation yet everyone can see the big picture.

In software-assisted analyses, figures of merit and weightings can be attached to the various processes to see how well the organisation is doing. A similar hierarchy of opportunities can also be created. The organisation is then able to feed opportunities into the overall strategic opportunity view of the board.

The two hierarchies form a kind of dialectic, so that when they are put side by side they highlight where things have been missed out of one or the other. Furthermore it is often possible to turn threat into opportunity through astute action—for example, a powerful objector turned by good stakeholder management.

Current research is showing that when the issues identified in the hierarchy are addressed, many of them are addressed by a small set of actions. For instance, certain systems risks and social risks may be addressed by improved training of security staff. The technical staff issues of quantity, quality and retention may be addressed by looking at relations with universities: a supply-chain issue.

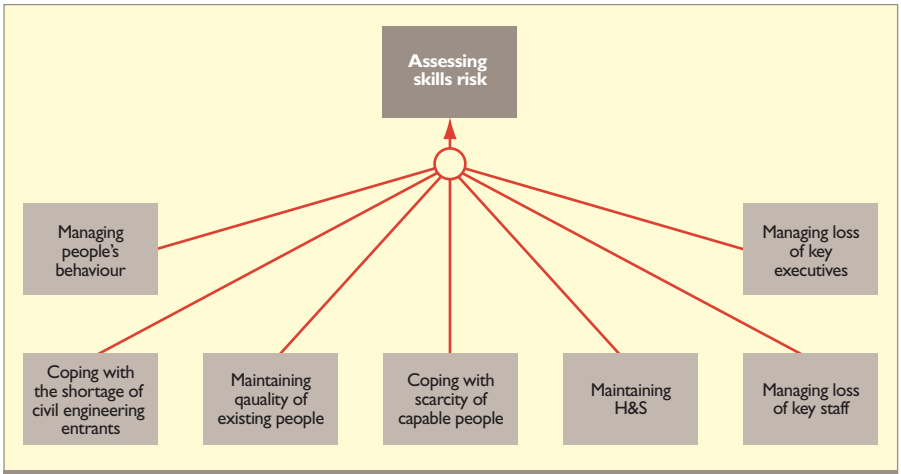

Fig. 3. The risk hierarchy can be expanded to an appropriate level of detail—in this case the skills branch has been expanded

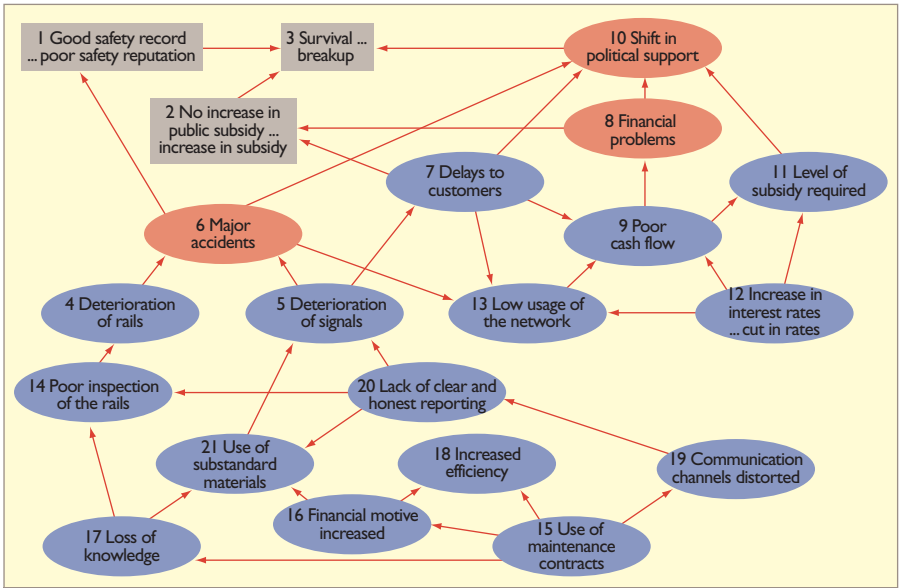

Fig. 4. Example of concept mapping for a railway maintenance company; three key strategic risks (red) are identified from its objectives of safety, no increase in public subsidy and survival (brown).

Narrative

Scenario planning is often used to develop strategy. However, the application of this technique often misses out the development of stories as to how the scenarios could unfold through time. It is suggested here that narratives of how the strategic risks could unfold would help with their early recognition.

Concept mapping

One of the striking findings from the case studies on organisational failure is that in nearly every case of a strategic risk impacting an organisation, there was clear evidence of the problem brewing but the signals were not acted on early enough. Poor communication, failure to recognise patterns, reliance on compliance and certainty of data, inadequate personal perception, and barriers in the organisational culture were the main causes of this corporate myopia. Interestingly, not only are people and their unpredictable behaviour the root cause of most strategic failures, but they also provide the key mechanism for detecting and addressing these failures.

Case studies from the research were analysed using a 'soft-systems' approach called concept mapping[6] (sometimes referred to as cognitive mapping).[7] Concept mapping can also be used looking forwards. Suppose, for example, that a public-sector organisation, charged with maintaining the track and signals of a large railway system, has identified the following three key strategic objectives: safety, no increase in public subsidy, and survival. Working backwards from these objectives, three key strategic risks have been identified.

- Major accident caused by deterioration of rails or signalling throughout

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the system leading to accidents and delays—relates to safety objective.
- Financial failure—relates to public subsidy objective.
- Political shift in support—relates to survival objective.

Concept mapping would establish—through an individual or joint brainstorming process—which areas of the business might impact on each of these three strategic risks, and how they are connected, perhaps as shown in Figs 4 and 5.

Each of the areas shown could therefore result in strategic risks, and therefore deserves further investigation to pinpoint where risk responses might be worthwhile so as to mitigate downside risks and stimulate opportunities. The nodes with lots of interconnections are likely to be worth looking at first. Larger concept maps can be analysed by computer programs to identify clusters and hierarchies of issues.

Pattern recognition

People are normally intuitively good at recognising beneficial or detrimental patterns of behaviour. They are often less good at doing what needs to be done to rectify the problem. What patterns of behaviour in your customers are wasting money? 'Not knowing what they want', leading to late change, is frequently identified. People tend to mitigate the symptom with contractual conditions that protect them but seldom face up to altering the process to remove the root cause. This is a relatively simple example: strategic risks often arise from more complex interactions, the patterns of which need to be recognised.

Pattern recognition is a fundamental cognitive skill for predicting complex phenomena.[8] Strategic risk could potentially be anticipated by recognising emerging patterns within a system—patterns that dynamically evolve over time. Given the timescales involved in risk incubation, pattern matching and recognition can become effective tools.

Pattern recognition is important in two areas of the strategic risk process: the integration of and learning from concept maps, and the informing of the horizon-scanning process described below.

Patterns in concept maps – Concept mapping provides the pictures of developing situations. When a number of maps are available, we should expect to see certain patterns recurring which allow a generalisation of the lessons learned. For instance, the concept maps may reveal that certain types of target setting may skew the behaviour of contractors: is there any pattern emerging to suggest this may be happening? If those patterns can be seen developing internally or externally they serve as early warning. Table 1 shows an example of this integration in the form of key lessons learnt from all 50 companies which participated in the research.

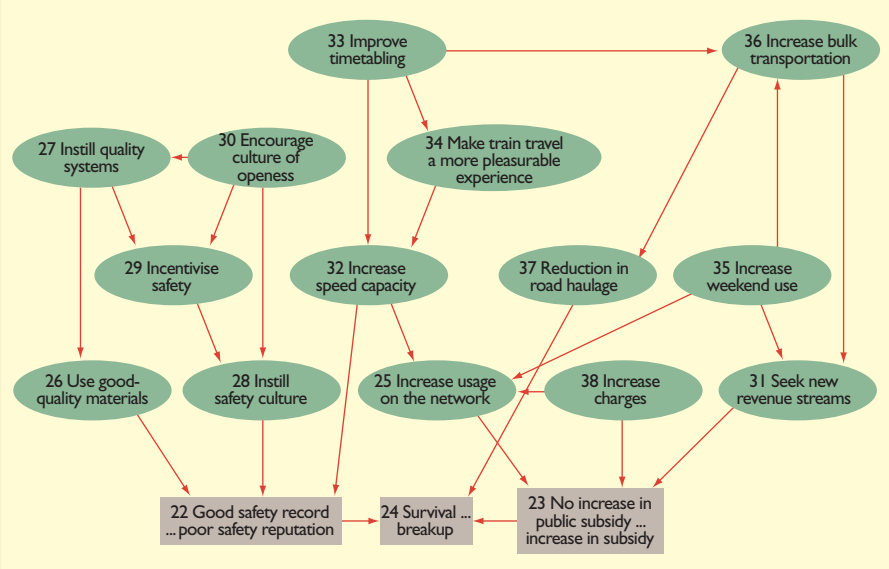

Fig. 5. Example of concept mapping of opportunities (green) for the same railway maintenance company in Fig. 4

Table 1. Twenty lessons from the 50 construction companies which participated in the STRATrisk research—integrating results in this way helps to identify patterns

Lessons from success suggest organisations should	
1.	maintain a rigorous process to identify and assess strategic risk
2.	acquire necessary experience (employ experts) when embarking on significant new ventures
3.	seek local knowledge and early involvement with key stakeholders
4.	allow time to investigate, check and discuss new ventures to reduce uncertainties
5.	develop good relationships and a sense of trust with the client
6.	use a team-based approach to procurement
7.	facilitate a rich dialogue about strategic purpose and risks within the organisation and with other key stakeholders
8.	develop a risk-acceptance culture and a willingness to be innovative
9.	dedicate a team to review strategic risks led by a full-time board member
10.	ensure strategic risks and opportunities are placed high on board meeting agendas
Lessons from failure suggest organisations should	
11.	not make assumptions about capabilities or motivations of experts
12.	not allow exceptions to common practice and procedures for experts
13.	not base strategic decisions solely on one individual's beliefs or perceptions
14.	be aware that individuals trigger chain reactions and are the root of most failures
15.	recognise that operational and project risks can quickly escalate; intelligent monitoring is essential to identify trends and patterns
16.	be aware of market shifts and make sure there is an effective external radar scanner and reporting system
17.	always leave a way out in contracts and relationships
18.	note that lack of time (or perception of this) causes short cuts to procedures
19.	be aware of communication barriers and work to reduce or remove them
20.	beware of the uncertainty of innovation

Risk registers and other probabilistic tools are inadequate when dealing with strategic risks

Patterns in horizon scans – Conventional scenario planning tends to identify the end points of the scenario and neglects the possible routes for getting to those end points. These routes are always marked by identifiable way-points, very much like the waypoints used in navigation. If we can express these patterns of development shown by the waypoints, then the organisation can ask its staff to look for them. This gives a clearer focus to the scanning.

Identifying the indicators

Those responsible for the narrative development need to identify the waypoints or key indicators that might suggest the development of strategic risks. These can then be brought to the notice of the rest of the organisation, who must own the task of watching out for them.

Communication

The importance of communication has already been emphasised in the first step. At this point in the process the board needs to be ensuring that its strategic objectives and its identified waypoints and indicators are being communicated throughout the organisation. The later steps will describe how it needs to listen to the responses.

Figure 6 shows how that might happen and is one model of good practice for any organisation drawn from the research interviews. The key feature of this model is that communication about risks needs to be bottom-up and also top-down. It is vital that the board understands what is happening in key parts of the organisation, which might impact on strategic risks, and recognises the influence of its culture in making good decisions. Likewise the organisation, with all its tentacles to the outside world, needs to understand and communicate clearly its own strategic objectives and the factors that may impact upon these. Only then can people gather the information relevant to strategic risk and opportunity

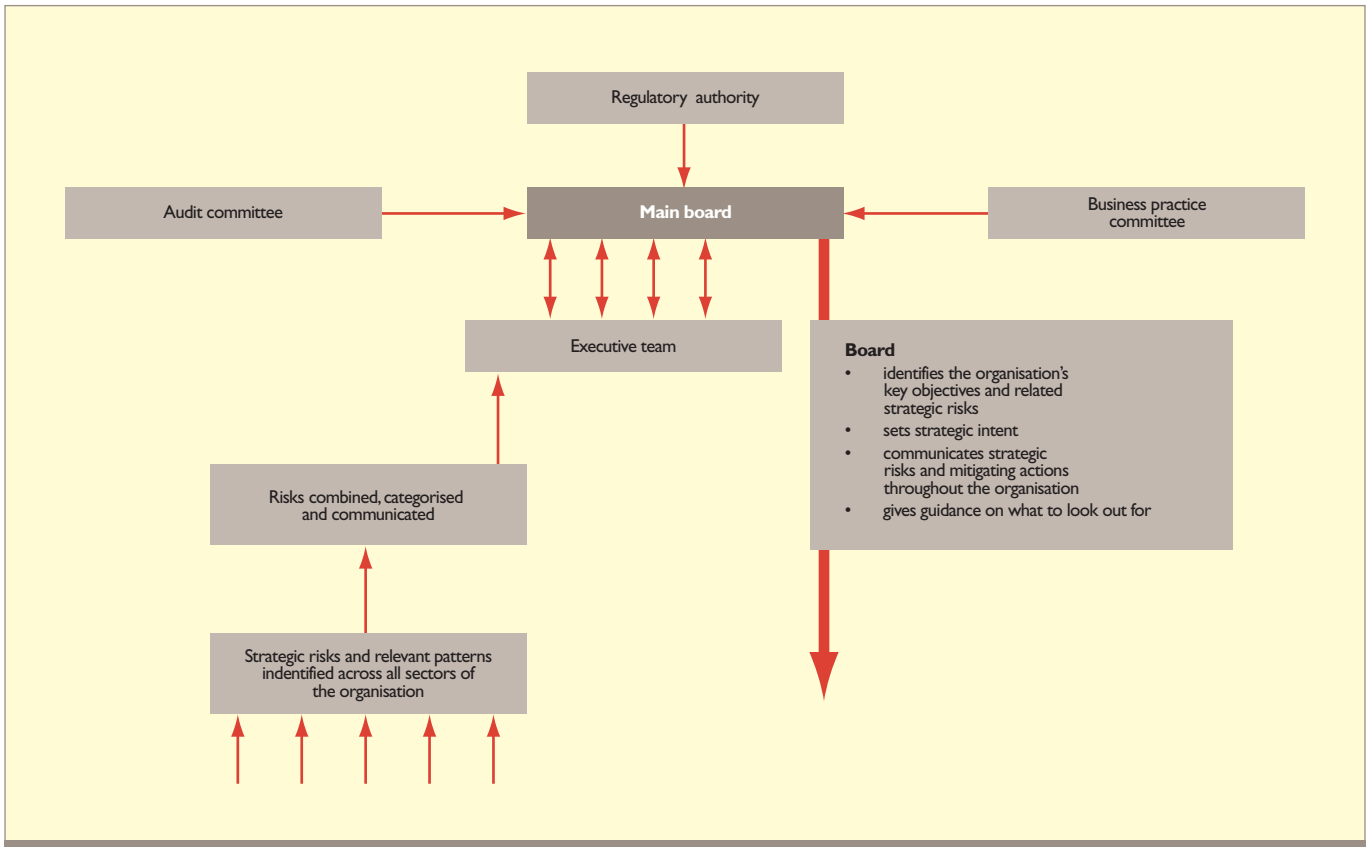

Fig. 6. Good practice communication model—communication about risks needs to be bottom-up as well as top-down

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in an intelligent manner. The use of a hierarchy of risk is most helpful in this context.

According to one of the clients interviewed,

> 'The risks that we face at the corporate level are classified by low, medium and high probability and high, medium and low impact—they are colour-coded … a lot of people have wonderful, brilliant risk registers—they don't actually manage the risk, they think that a risk register is the answer.'

Horizon scanning

Horizon scanning is about the structured gathering and collation of information, specifically focused on risks and opportunities for the organisation. The purpose is to try to spot issues 'coming over the horizon', which will have a significant impact.

The long-term aim is to develop a culture in an organisation that identifies potential strategic risks with sufficient time and commitment to turn them from threat to opportunity. Three key issues need to be highlighted in relation to this process.

- *All staff should be involved*. Every member of staff at whatever level will have their own field of vision. They will spot certain things much more easily than others by virtue of their training, discipline and personal interests. For example, track-side workers as well as managers will be aware of the state of the rails. At the other end of the scale, non-executive directors may have experience of other sectors where very small factors can have huge consequences.
- *The process needs to be carefully informed*. If all members of staff are to be involved they will need to know the kind of things to be looking for. There is a responsibility on the board to express clearly the objectives of the organisation and the kind of opportunities and risks they have identified. In our example the key issue could be deterioration of individual rails or signal hardware components. If these can be expressed in terms of developing patterns, even better. The process will need also to have clustering and categorisation methods in place so that it is not overwhelmed by information. This should be done by existing groups where the group uses its own communities of practice and interest with their own knowledge and experience to evaluate the issues identified for their potential impact.
- *Overhead should be minimised*. Staff will normally gather information as they go about their normal duties. Where significant situations are identified, further horizon-scanning work can be justified to understand the nature and extent of the response required.

Collect, combine, categorise

Each level in the organisation should collect the evidence and results of the horizon scanning, combine and categorise these as the information feeds back up the organisation from the levels below. If everyone is familiar with the hierarchy of risks, it is easier to combine and collate.

Revise the hierarchy of risks

The hierarchy of risks needs regular revision at board level. The board must own this and expect regular updates from the rest of the organisation as to the performance against the identified risks. They must remember the dynamic nature and complexity of these risks and loop back through the steps for continual improvement.

Conclusions

The key differences between the framework presented in this report and other risk management methodologies and compliance procedures are as follows.

- Strategic risks are more dynamic, uncertain and interconnected—therefore they need to be managed as complex processes, not discrete events.
- There is a strong emphasis on opportunity management, not just threats.
- Risk registers and other probabilistic tools are inadequate when dealing with strategic risks, though they have a role to play.

The ten-step process has been applied to boards and top management teams in a number of organisations and appears to improve their management of strategic risks. Research has shown that increased awareness and understanding of strategic risks provides robustness to these risks and resilience if the organisation is exposed to strategic threats.[9]

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