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## Principles of Risk Management

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### Principles of risk management

Gordon Dickson

*This paper, by the chairman of the Institute of Risk Management, sets out the principles of risk management as they have developed in manufacturing and process industries, and which, when applied to health care, would offer the basis for clinical risk management.*

Risk is part of everyday life. Many ordinary activities – driving a car, going out in a thunderstorm, walking under a scaffold – carry a definite, although very small, risk. And, moreover, few would want to live in an entirely risk free world – where the outcome of every action would be known in advance and life would be predictable and dull. Risk brings excitement and an edge to life. For some, for example, those who climb mountains or explore or drive formula one racing cars, this excitement takes them to the limits of endurance and daring. But in taking risks the consequences may be damaging or destructive. When this happens and the dice fall the wrong way excitement gives way to distress. It is this “downside” or cost of risk which is the subject of this paper.

In day to day activities we seek to minimise risk – by wearing seat belts, locking houses, and insuring property. And even in risky sports such as formula motor racing the chance of the downside of a risky action actually happening pushes us to increase our level of certainty as much as possible by controlling the environment and thus our exposure to risk. Each move to reduce risk has costs. Risk management has an important role in striking the balance between the cost of risk and risk reduction.

#### Meaning of risk management

Risk management is a mechanism for managing exposure to risk that enables us to recognise the events that may result in unfortunate or damaging consequences in the future, their severity, and how they can be controlled. A working definition of risk management that applies generally and not specifically to health care could be: the identification, analysis, and economic control of those risks which can threaten the assets or earning capacity of an enterprise.

Several important points emerge from this definition.

- (1) The threefold approach to risk management is quite evident. Risks must be *identified* before they can be measured, and only after their impact has been assessed can we decide what to do with them.

- (2) The eventual control mechanism, whatever it is, must be *economic*. There is no point in spending £10 to control a risk which can only ever cost you £5. There will always be a point where spending on risk control has to stop.

- (3) The definition mentions *assets and earning capacity*. These assets can of course be physical or human. They are both important, and risk management must be seen to have a part to play in both. However, risks do not only strike at assets directly, and for this reason the definition mentions the earning capacity of an enterprise.

- (4) The definition uses the word *enterprise* rather than a more restrictive word such as company or manufacturer. Risk management has its origins in manufacturing or process industries, but the principles are just as applicable in the service sector as the manufacturing sector and are of equal importance in the public and private sectors of the economy. Reference to “earning capacity” does not automatically imply the private sector and the profit motive.

- (5) Finally, the definition is couched in terms which support the expected objectives of the enterprise. Risk management should be viewed as a positive way of helping operational managers to achieve their objectives. It is by identifying, measuring, and controlling risk that assets, earning capabilities, and hence the objectives of the enterprise will be secured.

Risk management has its origins in manufacturing and process industries, in which the need to respond to health and safety issues and to fluctuations in the insurance market have influenced its development. This paper is about the general principles of risk management. The application of risk management to health care will be discussed in other papers.

#### Identifying risk

Identifying risk starts from a broad view posed by the question how can the assets or earning capacity of the enterprise be threatened? This does not place any constraint on the type of risks we are seeking as we need to be unblinkered and identify a wide range of ways that an organisation may be impeded in achieving its objectives.

Looking at any enterprise or organisation in this way is difficult. Ideally we need an open roof and gantry through which, unseen, we

could observe all components of our enterprise. From such a vantage point we could identify what was done where and by whom; identify processes in one department that were potentially dangerous to adjacent departments; see the interaction between sections of the organisation; identify points of possible conflict; and look for concentrations of processes and any dependencies between departments. By looking down on our own operation we would also see outside the organisation itself and notice if our work threatened the surrounding area or if a neighbour threatened us.

How can we get this type of insight into our organisation? A structure to formalise the tasks of risk identification is needed, and a range of identification tools can be used. Flow charts, fault trees, hazard and operability studies, hazard indices, physical inspections, and many others are all available to help those charged with the responsibility of risk identification. These techniques merit a text in their own right. Many will sound unfamiliar to those who work in health care.

#### GENERAL PRINCIPLES OF RISK IDENTIFICATION

The following points represent the general principles of risk identification regardless of the technique used.

- (1) One particular method of identification is unlikely to cover all the problems of risk posed in any organisation or situation. Using one or two particular techniques to the exclusion of all others is not good practice, and a combination of methods is considered a thorough approach.
- (2) Some methods suit certain situations. Flow charts, for example, are appropriate tools for identifying risk in a process that involves goods, services, materials, or people moving through several different stages. When flow is not the main activity, as in an office, other risk identification tools may be appropriate. Matching the method to the perceived risks is important. Firm guidelines for doing this are not available, but risk managers are helped by a clear understanding of the organisation.
- (3) Understanding the organisation and its work fully is greatly helped if as many people as possible within the organisation but outside the risk management department are consulted. Before embarking on risk identification a risk manager should identify all those who could be of help.
- (4) A large scale risk identification exercise will always disclose risks. But however well the task has been done, further risks will emerge in the following weeks and months. Thus a continuing programme of risk identification is crucial for monitoring the continued identification of new risks, and such a programme entails careful planning.
- (5) Accurate record keeping is an important component of risk identification. The form of record keeping should be agreed at the start of the programme and the relevant

data must be recorded so that they are easy to refer to later.

- (6) The task of risk identification must be carried out with financial realism – there is little point in spending £100 to identify a risk that can only ever result in a £10 loss.

#### TASK OF RISK IDENTIFICATION

Individual managers within an organisation are busy managing finance, production, marketing, or sales. Focusing on identifying risk needs to be a stated part of someone's function. In many organisations a risk manager may have been appointed for this task, but in others, which may be too small to employ a risk manager, risk identification should be clearly stated as part of someone's job description. The importance of this is illustrated by a real event.

In 1974 a catastrophic explosion occurred at Flixborough, a large chemical manufacturing plant in the United Kingdom. Before the explosion a set of chemical reactors had been removed for repair, and to keep production flowing a dog-leg pipe had been installed around the damaged reactor. A flange used to connect this pipe did not prove strong enough, and the result was the explosion. The official inquiry into the facts surrounding the explosion makes interesting reading for those involved in risk management. One passage from that report reads: "The key post of works engineer was vacant and none of the senior personnel, who were chemical engineers, were capable of recognising the existence of what in essence was a simple engineering problem." It seems that nobody had the specific task of asking how the changes in the plant had altered the risks inherent in its operation.

#### NEED FOR CLEAR ORGANISATIONAL OBJECTIVES

Risk management exists to support an enterprise in achieving its objectives. For risk to be identified effectively these objectives need to be clearly stated. Although self evident, often such objectives either do not exist or are known to only a few. Those responsible for identifying risk must understand fully what the organisation hopes to achieve. It is these expectations that are at risk.

#### Risk analysis

Once a risk is identified the next task is to *measure its impact* on the enterprise, which entails quantitative analysis. Much has been written about quantitative analysis, but there are three important general points.

The detail of past events is a good starting point for analysis of what might happen in future. A loss experience can yield interesting information on the trend and pattern of losses. Information technology has greatly improved the ability to analyse losses. With complete and accurate storage of data useful information about trends and patterns of losses can be obtained.

Losses should be considered in terms of their impact on the organisation. In a very basic way we can identify the "layers" of losses. A bottom

layer is characterised by high frequency and low severity. In insurance this layer is often referred to as the pound swapping layer, as the losses are predictable and the insurer and the insured know that losses in this region are likely to occur. The insured pays a premium and in due course the inevitable losses are met. But from the insured's point of view, the insurer has to meet expenses and make a profit on the transaction. The top layer holds losses of very high severity but low frequency. These are the losses which, if they occurred, might destroy an organisation. The middle layer of losses are those of medium severity and moderate frequency. Expressing losses in terms of these layers helps to understand the impact of losses and the financial decisions about risk that may have to be taken.

Finally, an analysis of loss may need to be presented as a report. Thus it is essential that losses or potential losses, the impact of risk, are expressed in a way that is understood by all those involved – for example, finance managers, general managers, or lay directors. Communication of such findings is important. We could, for example, express our employee injury costs in terms of lost service, to provide perspective.

### Risk control

The final part of the process of managing risk is *economic* control. The importance of economic control can be illustrated by the example of a corner shop so protected that the risk of fire was reduced to an absolute minimum, but if the associated costs represented a large percentage of the shop's turnover the degree of protection would be uneconomic. Therefore the steps to reduce risk must be financially reasonable. There are three aspects of risk control; loss reduction, risk retention, and risk transfer.

#### REDUCTION

A loss control programme starts with loss reduction – that is, a strategy to reduce as far as possible the impact of losses. The risk must be as low as possible. Rushing to control losses through insurance, without exhausting all possible ways of reducing the impact of the loss on the organisation, should be resisted. Loss reduction can be done either before or after an event has happened.

*Pre-loss reduction* entails those steps taken by the risk manager once a risk has been identified and before a loss has been incurred. For example, the instructions issued with a product are a form of pre-loss reduction. The manufacturer has identified a risk of injury to the consumer if the product is used in a certain way and has issued instructions in the hope that such injury can be avoided.

*Post-loss reduction* entails those steps that the risk manager believes will reduce the impact of the loss once the event has taken place. For example, the use of fire sprinkler systems once a fire or suspected fire has been detected are intended to reduce drastically the impact of any fire.

Risk managers require particular skills and understanding of both the physical means by

which risk can be controlled and a knowledge of the processes within the organisation. In a real sense they must integrate all the pieces of the information from the various sources to arrive at the optimum solution.

#### RETENTION

Once a risk has been identified and reduced as far as possible further decisions about managing the risk are needed. Before transferring the risk, which will incur the costs of insurance, we need to consider whether the risk can simply be retained.

Expected losses in the pound swapping or bottom layer will be expensive to transfer to the insurers, who will want the cost of claims and their own expenses and profit to be met. Such losses may well be suitable for retention. Knowledge of risk financing mechanisms is essential; risk managers will not want to expose their organisation to an intolerable level of loss nor spend money on insurance which may not be justified.

Not all decisions about retaining risk are taken voluntarily by risk managers. In some cases the retention of risk may be involuntary. For example, a limited capacity may exist for a certain form of risk and the risk manager may consequently be left carrying some risk. In other cases the cost of the cover may simply be prohibitive, thus forcing the risk manager to consider an alternative approach.

#### TRANSFER

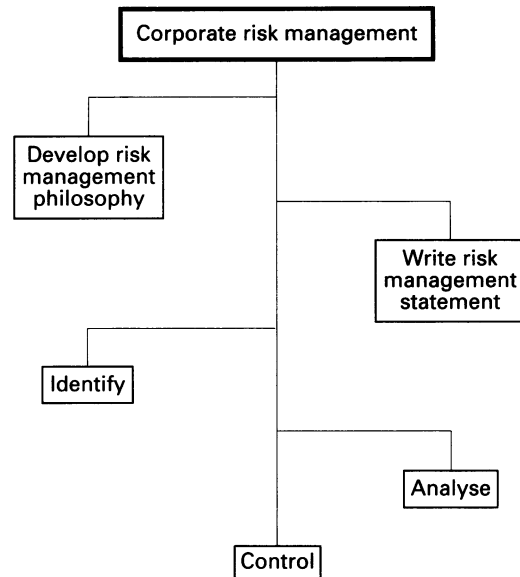
The final step of a loss control programme is risk transfer. Essentially, the risk is transferred to another party, possibly through wording a contract so that any risk is left with the other party, but the most common form of risk transfer is insurance.

From the risk manager's point of view insurance is simply *a risk transfer mechanism*. The insurance premium is a loss today but relieves the risk manager and the organisation of the uncertainty of the timing and cost of future losses. The great benefit of insurance is that *loss costs are mostly fixed*. Budgeting is easier as losses are smoothed over the year rather than occurring at random.

### Managing risk management

Implementing a risk management programme is an organisational and managerial function. The figure illustrates the processes by which risk management can be implemented and includes the steps of risk identification, analysis, and control. But first is the task of developing the risk management philosophy and writing the risk management statement.

The risk management philosophy should be the one clear statement of where the organisation stands on the issue of risk and its management and is often expressed as a *risk management statement*. The process of generating the philosophy should involve several executives within the organisation and could represent good public relations for the risk management department. Deciding a corporate philosophy towards risk brings several distinct advantages, as shown below.



#### Corporate risk management chart

- (1) The long term objectives of risk management are thought out by the organisation. The organisation has declared what it believes to be the optimum approach with the information available and in this way is seen to have a positive attitude to risk rather than a reactive attitude.
- (2) Declaring a philosophy focuses attention on the work of the risk management department. The organisation is likely to have a declared philosophy in several of its activities – from marketing to product design, investment to diversification – and placing a risk management philosophy alongside all these others could heighten the profile of risk management and bring with it an increased awareness of risk itself.
- (3) The philosophy can also act as a useful benchmark against which to measure the effectiveness of the risk manager and the department. Without a philosophy it becomes difficult for risk managers or their bosses to know if they are performing satisfactorily. The task of measuring effectiveness would become very subjective.
- (4) The philosophy represents the organisation's view of the management of risk and is essential for long term planning and for the evolution of risk management within the organisation as a whole. A philosophy may be described as permanent in the sense that it is the corporate view, but it should not be inflexible.

#### RISK MANAGEMENT STATEMENT

The risk management statement outlines the policy of the organisation towards the problem of risk. It is not a manual in the sense of describing how something is done, and ideally, it should be brief and to the point, as illustrated by the two examples (boxes). The statement in the first example is relatively brief and represents one style of statement. Slanted towards the objectives and work of the department – for example, in its terms “identify activities,” “measure impact,” “take

#### Sample risk management statement

##### Example 1: Imperial Machines plc

It is the policy of this company to take all reasonable steps in the management of pure risk, to ensure that the company is not financially or operationally disrupted.

In implementing this general philosophy, it is the philosophy of the company to:

- (1) Identify those activities which have or may give rise to loss producing events
- (2) Measure the impact of potential loss producing events on the company and its subsidiaries
- (3) Take reasonable physical or financial steps to avoid or reduce the impact of potential losses
- (4) Purchase insurance for those risks which cannot be avoided or reduced further, always retaining risk where this is economically attractive

reasonable steps,” “purchase insurance” – it is “objective centred.” But although focused on objectives, it is also quite wide in its remit. It does not in any way restrict the actions of the risk manager or the risk management department, and the liberal use of such phrases as “loss producing events,” “reasonable,” and “economically attractive” gives the risk manager a good measure of flexibility. The statement follows fairly closely the three main steps in risk management of *identification*, *analysis*, and *control*. But care needs to be exercised with the use of this type of language if it is to be read and understood by people outside risk management. The sample statement in the second example has a different style. It is very brief and avoids specifics but emphasises the coordinating role of the risk manager and the department. Clearly, statements can be written in many different ways, and each organisation should decide on the style most suited to it and its general corporate structure.

These written statements are valuable for several reasons, as follows.

- (1) The statement is a way of communicating the philosophy of the company as far as risk management is concerned. The best philosophy in the world will be of no value if it is not communicated to those who are meant to implement it.
- (2) The statement can also encourage an element of corporate discussion around the problems of risk and its management.

#### Sample risk management statement

##### Example 2: Associated Plant Limited

The risk management department is responsible for implementing all risk management activities. It has specified responsibilities in the area of:

- Risk identification
- Risk evaluation
- Insurance

The department will act in an advisory capacity in the areas of:

- Physical loss prevention

The department will coordinate the activities of safety, occupational health, and other related matters.

Provided the discussion is constructive, that is good.

- (3) The statement will probably show the lines of authority. It will state who is responsible for certain aspects of risk management, and it can also be used to indicate areas of risk management that are the responsibility of others outside the risk management department. For example, the statement may make it clear that all acquisitions are to be reported to the risk manager by divisional general managers.

#### RISK MANAGEMENT REPORT

Most organisations produce a range of yearly in house reports – on research and development, marketing, new products, advertising, changes in the organisation, acquisitions and mergers, etc. Similarly, the annual risk management report would be produced and distributed each year and would cover a whole range of risk management related problems.

There is a wide diversity of style and use of such reports. Each organisation has to produce reports which fit with the general image of the organisation as a whole, and this is true also for the risk manager's report. Three different contents pages, giving some idea of the possible contents of a risk management report are outlined in the box. Format A seems to concentrate on the insured/uninsured

#### Sample formats of risk management report

##### Format A

Summary  
Highlights of the year  
Loss analysis  
    Insurance claims  
    Uninsured losses  
Premiums paid  
Intergroup comparisons  
Conclusions

##### Format B

The risk management department  
Corporate risk management philosophy  
Implementing the philosophy  
Review of loss producing events  
Risk financing analysis  
Five year comparisons  
The next five years  
Summary of major points

##### Format C

Introduction  
Property risks  
Pecuniary risks  
Liability risks  
Transport risks  
Major incidents summary  
Expected changes  
Conclusions

distinction whereas format B features the philosophy and has more general divisions and format C has used the type of risk itself as a means of structuring the report. Hence the same information can be easily contained in each of these reports, the style that suits a particular organisation is a matter of judgement.

The value of these reports is as follows.

- (1) The reports are excellent public relations documents, providing an opportunity for risk managers to put forward a "good" image of their function and the work of their departments. This is useful as much of the year will have been spent dealing with people after loss or other traumatic experience.
- (2) The very discipline and work needed to prepare the report may disclose otherwise hidden information and may be valuable in itself.
- (3) The report can act as a good educational tool for the risk manager. The essence of risk management often lies in communicating the message of risk, and the report is an opportunity to put across ideas in a document that has a chance of being read.
- (4) The report may indicate to other managers their comparative success or failure within the organisation. The risk manager has an overview and is able to report on the range of losses sustained within the organisation, which will be reflected in the figure for the departments or divisions.

#### Conclusion

This paper describes some of the principles of risk management. Rooted in the industrial and manufacturing sectors, some of the terms used and the economic analysis may be unfamiliar in clinical work. But risk management is very much concerned with people. Relationships and the ability to create and sustain them are essential for effective risk management. The principles of risk management have a broad applicability for health care and can be used to reduce the risks of harm to patients and healthcare staff and to make hospitals as safe as possible.

#### Further reading

Published work in risk management tends to be specific and technical. Readers interested in further reading may wish to contact the Institute of Risk Management, the professional education body in risk management in the United Kingdom, which can offer several textbooks on various aspect of the subject. (Institute of Risk Management, 6 Lloyds Avenue, London EC3N 3AX.)