#### Development of risk management

Risk management as a formalized discipline has been around for at least 100 years. It has its early origins in the specialist activity of insurance, which can trace its history back for several centuries. As insurance became more formalized and structured, the need for risk control standards increased, especially in relation to the insurance of cargo being transported by ships around the world. Perhaps one of the earliest devel- opments in this field was the introduction of the ‘Plimsoll Line’ to indicate the level of cargo that a ship could safely transport without being dangerously overloaded.

As risk management became more developed, education programmes emerged to support the development of risk management as a profession. It was at this time that risk management regulations associated with corporate governance began to develop and various regulators were given more authority in relation to specific hazards (such as health and safety), and also in relation to particular business sectors (such as financial institutions). The development of risk management qualifications became increasingly more formalized during the 1980s.

The development of education and qualifications in risk management, as well as the more structured approach of regulators, led to the emergence of risk manage- ment standards. Risk management standard AS/NZS 4360:1995 was one of the early examples of a comprehensive approach to the management of risk. As well as the generic risk management standards applicable to all industries, specific risk management approaches also emerged in particular sectors, including the finance sector. The emergence of regulated capital requirements for banks and insurance companies indicated the increased level of risk management maturity required of financial institutions.

The corporate risk management role in the United States during the 1950s became an extension of insurance purchasing decisions. During the 1960s, contingency planning became more important to organizations. There was also an emphasis beyond risk financing on loss prevention and safety management. During the 1970s, self-insurance and risk retention practices developed within organizations. Captive insurance companies also started to develop. Contingency plans then developed into business continuity planning and disaster recovery plans.

At the same time during the 1960s and 1970s, there were considerable develop- ments in the risk management approach adopted by occupational health and safety practitioners. During the 1980s, the application of risk management techniques to project management developed substantially. Financial institutions continued to develop the application of risk management tools and techniques to market risk and credit risk during the 1980s. During the 1990s, the financial institutions further broadened their risk management initiatives to include structured consideration of operational risks.

Also, during the 1980s, treasury departments began to develop the financial ap- proach to risk management. There was recognition by finance directors that insurance risk management and financial risk management policies should be better co-ordinated. During the 1990s, risk financing products emerged that combined insurance with derivatives. At the same time, corporate governance and listing requirements en- couraged directors to place greater emphasis on enterprise risk management (ERM) and the first appointment of a chief risk officer (CRO) occurred at that time.

During the 2000s, financial services firms have been encouraged to develop internal risk management systems and capital models. There has been a rapid growth of CRO positions in energy companies, banks and insurance companies. Boards are now investing more time in ERM due to the Sarbanes–Oxley Act of 2002 in the United States. More detailed risk reporting and other corporate governance requirements have also been introduced.

However, the financial crisis of 2008 called into question the contribution that risk management can make to corporate success, especially in financial institutions. There is no doubt that the application of risk management tools and techniques failed to prevent the global financial crisis. This failure was a failure to correctly apply risk management processes and procedures, rather than inherent defects in the risk management approach.

#### specialist areas of risk management

Risk management is a constantly developing and evolving discipline. As well as its origins in the insurance industry and in other branches of hazard management, risk management has strong connections with the credit and treasury functions. Many functions within large organizations will have a significant risk management com- ponent to their activities, such as tax, treasury, human resources, procurement and logistics. However, it is unlikely that specialists in those areas will consider their activities as simply a branch of the risk management discipline.

Perhaps one of the best known and specialist areas of risk management is that of health and safety at work. Another specialist area is that of disaster recovery plan- ning and business continuity planning. Also, there is no doubt that quality management is a very well-developed branch of risk management, given the high profile attached to quality management systems, such as ISO 9000. Additionally, other specialist areas of risk management have developed over the past decades, including:

* + project risk management;
	+ clinical/medical risk management;
	+ energy risk management;
	+ financial risk management;
	+ IT risk management.

All of the above specialist areas of risk management have contributed considerably to the development and application of risk management tools and techniques. Project risk management is an area where the application of risk management tools and techniques is particularly well developed. As discussed earlier, project risk manage- ment has its emphasis on the management of uncertainty or control risks.

Clinical risk management has been developing for some time. This area of risk management is primarily concerned with patient care, especially during surgical operations. The cost of medical malpractice claims and the inevitable delay in making insurance payments has resulted in risk management systems being introduced. Particular aspects of clinical risk management include greater attention to making

patients aware of the risks that may be associated with the procedure they are about to undertake.

It is also important that surgeons report incidents that occur during the surgery. Considerable emphasis has been placed in clinical risk management on the need to report, in an accurate and timely manner, details of any incidents that occur in the operating theatre. There are many publications available on clinical risk management, and a great deal of work has been put into establishing the necessary systems and procedures to cover this specialist area of risk management.

As well as project and clinical risk management, risk management tools and techniques have also been applied in a range of specialist industries. In particular, risk management techniques have been applied in the finance and energy sectors. Risk management in the finance sector focuses on operational risks, as well as market, credit and other types of financial risks. It is in the finance sector that the title Chief Risk Officer was first developed.

The energy sector has also seen an increase in the attention paid to risk management tools and techniques. For some organizations in the energy sector, risk management is mainly concerned with the future price of energy and with exploration risk. Therefore, the risk management approach is similar to the activities of the treasury function, where hedging and other sophisticated financial techniques form the basis of the risk management effort.

Financial risk management has acquired a high profile in recent times, and Chapter 30 considers the importance of operational risk management within the finance sector. However, risk management within the finance sector is broader than just operational risk. Banks and other financial institutions will be concerned with the credit risk and market risk, as well as operational risk. Finance and insurance are highly regulated business sectors, governed by international standards such as Basel III and Solvency II.

IT risk management is another well-developed and specific branch of risk man- agement. The increasing importance of information to organizations, in terms of the management of and security of data, has resulted in the development of specific standards applicable to IT risk management. Amongst the best established of these risk management standards is COBIT, which is similar in many regards to the COSO standard discussed in Chapter 6.

#### simple representation of risk management

Risk management has well-established stages that make up the risk management process, as described in Table 4.3. These stages build into valuable risk management activities, each of which makes an important contribution. There are many ways of representing the risk management process, and each of the standards mentioned in Chapter 6 provides a slightly different description.

**TAb LE 4.3** 8Rs and 4Ts of (hazard) risk management

1. Recognition or identification of risks and identification of the nature of the risk and the circumstances in which it could materialize.
2. Rating or evaluation of risks in terms of magnitude and likelihood to produce the ‘risk profile’ that is recorded in a risk register.
3. Ranking or analysing the current or residual level of risk against the established risk criteria or risk appetite.
4. Responding to significant risks, including decisions on the appropriate action regarding the following options:
	* tolerate;
	* treat;
	* transfer;
	* terminate.
5. Resourcing controls to ensure that adequate arrangements are made to introduce and sustain necessary control activities.
6. Reaction planning and/or event management. For hazard risks, this will include disaster recovery or business continuity planning.
7. Reporting and monitoring of risk performance, actions and events and communicating on risk issues, via the risk architecture of the organization.
8. Reviewing the risk management system, including internal audit procedures and arrangements for the review and updating of the risk architecture, strategy and protocols.

Figure 4.1 provides a simple diagrammatic representation of the risk management process. This basic explanation of the risk management process is referred to as the 8Rs and 4Ts of hazard risk management. The activities associated with risk management are as follows:

* + recognition of risks;
	+ rating of risks;
	+ ranking against risk criteria;
	+ responding to significant risks;
	+ resourcing controls;
	+ reaction (and event) planning;
	+ reporting of risk performance;
	+ reviewing the risk management system.

Risk management can improve the management of the core processes of an organ- ization by ensuring that key dependencies are analysed, monitored and reviewed. Risk management tools and techniques will assist with the management of the hazard risks, control risks and opportunity risks that could impact these key dependencies.