

# Derisking risk management

## *Indian Management – April 2005*

By focusing excessively on financial risk, managements may be ignoring other equally threatening risks. An integrated approach to enterprise risk management is the way to go

All organisations face some form of risk or the other. Nothing wrong with that, for risk-taking is intrinsic to growth. Taking no risks may also mean forgoing rewards. However, there has been a tendency among organisations to focus more on financial risks such as fluctuations in interest and exchange rates rather than viewing them as an integral part of corporate strategy. It is time to remedy this imbalance.

Risk is all about vulnerability and taking proper steps to address it. Contributing to this state of vulnerability are many factors - both financial and non-financial. Both have to be factored in equally to achieve a fair level of risk-taking capability. The recent collapse of Global Trust Bank is a case in point. It had more to do with inadequate internal management control systems than unfavourable developments in the external environment. The crisis at UTI in the early 2000s was again more due to internal factors than external ones. UTI made a number of questionable investments in the late 1990s, and there was no one to question these decisions.

Even when organisations are good at identifying the various types of risks they face, they make the mistake of dealing with them in a piecemeal manner. Within the same company, the finance, treasury, human resources and legal departments may cover risks independently. An organisation-wide view of risk management can greatly improve efficiencies and generate synergies. At the same time, companies often do not consider all the options available to deal with a particular risk. This leads to sub-optimal risk management decisions.

What is needed is an enterprise risk management (ERM) system, which provides organisations with an integrated perspective to managing risks. ERM begins by asking some fundamental questions:

- What are the various risks faced by the company?
- What is the magnitude of each of these risks?
- What is the frequency of each of these risks?
- What is the relationship between the different risks?
- What is the best approach to dealing with any particular risk?
- How can the risks be managed to maximize shareholder wealth?

## **Exploding myths**

Risk management is not exactly a new idea. One of the earliest examples of risk management appears in the Old Testament of the Bible. An Egyptian Pharaoh had a dream, which Joseph interpreted as seven years of plenty to be followed by seven years of famine. To deal with this risk, the Pharaoh purchased and stored

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large quantities of corn during the good times. As a result, Egypt prospered during the famine. Similarly, in *Mat-sya Avatar*, Lord Vishnu asks Sage King Satyavratha to ensure that one pair of each species is safely put onboard the ship that would help them escape a forthcoming deluge. This ensured the perpetuation of different flora and fauna.

The modern era of risk management probably goes back to the Hindu Arabic numbering system, which reached the West about 800 years back. Without numbers, it would have been impossible to quantify uncertainty. But mathematics alone was not sufficient. What was needed was a change in mindset. This happened during the Renaissance, when long-held beliefs were challenged and scientific enquiry was encouraged. As theories of probability, sampling and statistical inference evolved, the risk management process became more scientific. Many risk management tools used by traders today originated during the 1654-1760 period. Strangely enough, gamblers played a major role in the advancement of probability theory. The problem they tried to solve was how to estimate the probability of a win for each team after an unfinished game of cards. These ideas were in all probability later supplemented by advances such as the discovery of regression to the mean by Francis Galton in 1885 and the concept of portfolio diversification by Harry Markowitz in 1952.

There are three major myths about risk that need exploding. One is that risks can be eliminated completely; another is that one can wait passively for events to happen, and risk can thus be ignored till that point; and third, most risks are external. The truth, however, is that risk can neither be avoided nor eliminated completely. Indeed, without taking risk, no business can grow. If there were no risks, we wouldn't need managers either.

The Pharaoh in the earlier example was obviously taking a risk in the sense that his investment would have been unproductive had there been no famine. Microsoft is laying huge bets on its next operating system, Longhorn, that is expected to make Windows redundant. But without this investment, Microsoft realises it may lose its marketshare as the threat from Linux and strong players like IBM intensifies. Similarly, Tata Motors has made a huge investment in buying out Daewoo's truck division in South Korea. The Tatas realise that without this kind of investment they may become a marginal player in the global market.

Second, risk management is often about making choices and tradeoffs between various kinds of risk. These choices and tradeoffs are closely related to a company's assumptions about its external environment. The word risk has its origins in an Italian word, *risicare*, which means 'to dare.' So, risk is often about making choices rather than waiting passively for events to unfold.

In the Indian pharma industry, players like Ranbaxy and Dr Reddy's Laboratories are challenging the patents of global players as the generics market in the US opens up with many block-buster drugs going off patent. But another leading player, Nicholas Piramal (Nicholas), believes in a different approach - partnering with global majors. Nicholas does not want to challenge patents but wants to join hands with large players in various areas such as contract manufacturing. CEO Ajay Piramal believes that Nicholas' capabilities in managing strategic alliances with the big guns in the pharma industry will stand the company in good stead in the coming years.

Third, not all risks are external. Very often, the risks organisations assume have more to do with their own

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strategies, internal processes, systems and culture than any external developments. For example, the collapse of Global Trust Bank (GTB) had more to do with poor management control systems than any other kind of risk. GTB took heavy risks while lending money to low-creditworthy customers and investing money in the capital markets. The board failed to ask the right questions and impose the necessary checks and balances. The crisis at UTI was again due more to internal than external factors. UTI made a number of questionable investments in the late 1990s. There is considerable evidence that systems and processes were routinely violated when UTI's fund managers purchased risky stocks.

### Dealing with risk

By understanding and controlling risk, a firm can take better decisions about pursuing new opportunities and withdrawing from risky areas. A systematic risk management process ensures that people are encouraged and trained to take calculated risks. The first step towards risk management for managers is to understand what risks they are comfortable with and what they are not. In general, companies are not comfortable with risks caused by external factors. This is probably why financial risk management, which deals with volatility in interest and exchange rates, has become popular in the past few decades. Companies also tend to transfer those risks over which they have very little control. A good example is earthquakes, where an insurance cover often makes sense.

Managers also often prefer to retain risks closely connected to their core competencies. Thus, computer software companies would, in normal circumstances, not transfer technology risk. Microsoft does not outsource R&D. Bill Gates himself spends much of his time on technology matters. A software services company like Infosys has to keep a large number of people on its pay-roll. It cannot outsource software engineers (except maybe for some low-end jobs) as they form the core of the company. Similarly, Pfizer cannot outsource its research staff and IBM cannot outsource its consultants. These are only general guidelines. Ultimately, whether to retain the risk or to transfer it should depend on what the company sees as key to its delivery of value, and how much it needs control of the resources it directly controls.

### Classifying risk

What are the various risks a company can face? The *Economist Intelligence Unit* (EIU) divides risks into four broad categories:

- ? *Hazard risk* is related to natural hazards, accidents and fire that can be insured.
- ? *Financial risk* has to do with volatility in interest rates and exchange rates, defaults on loans, and asset-liability mismatches.
- ? *Operational risk* is associated with systems, processes and people and covers areas such as succession planning, human resources, information technology, control systems and compliance with regulations.
- ? *Strategic risk* stems from an inability to adjust to changes in the environment such as changes in customer priorities, competitive conditions and geopolitical developments.

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The method of classifying risks is not as important as understanding and minimising them (*See Exhibit 6*). The very nature of the uncertainty implies that it is difficult to identify all risks, leave alone classify them. Each company should carefully examine its industry and value chain and come up with its own way of minimising the uncertainties associated with its important value-adding activities. Then, it can quantify these uncertainties to the extent possible and decide which risks to hold and which ones to transfer. While doing so, companies must understand the interrelationships among these risks.

### **Emerging paradigm**

Integrated risk management is all about the identification and assessment of the risks faced by a company as a whole, followed by the formulation and implementation of a company-wide strategy to manage them. One can do so by using the best combination of three approaches that complement each other. The first is to modify the company's operations suitably. The second is to reduce debt in the capital structure. The third is to use insurance or financial instruments like derivatives to transfer the risk.

Take the case of the environmental risk that a company like Tata Chemicals faces. Modifying the company's operations could mean installation of sophisticated pollution control equipment or using a totally new environment-friendly process. A second alternative is to buy an insurance policy that would protect it in case an accident occurs, leading to big compensation payments. The company could also reduce debt and keep plenty of reserves to deal with any contingencies arising out of environmental mishaps.

Or take the case of Reliance. Given its major stakes in the oil business, it needs a steady supply of petroleum crude to feed its refinery. Oil prices can fluctuate, owing to various social, economic and political factors. Reliance can set up, or at least tie up, with a large number of oilfields all over the world to insulate itself from volatility. This would limit the damage due to Opec actions, terrorist strikes or instability in Islamic countries. In case of a long recession, the best bet for a company would be to keep minimum debt and maintain huge cash reserves. It may also resort to buying oil futures contracts that guarantee the supply of crude at predetermined prices

A company like Walt Disney, which operates theme parks, is exposed to weather risks. If the weather is not sunny, people will not turn up. So, Disney took a decision to set up its second theme park in Florida. Today, the company can buy weather derivatives or an insurance policy to hedge the risks arising from inclement weather. A similar argument may well apply to the Board of Control for Cricket in India (BCCI). These days, with test matches being scheduled all through the year, the threat of rain is real. (Last year, the Chennai test between India and Australia was washed out on the final day.) BCCI has two options. Stick to the cities where there is little rain. This is the operational solution. Alternatively, take insurance cover. This is the risk transfer approach.

Take the instance of the software giant, Microsoft, which operates in an industry where technology risks are high. The company manages risk by maintaining low overheads and zero debt. But Microsoft also has organisational mechanisms to deal with risk. The capacity of a software company is effectively the number of software engineers on its payroll. Excess capacity can create serious problems during a downturn. Right from the beginning, Bill Gates was particular about not employing more persons than required. So, Microsoft has always maintained a lean staff. It depends on temporary workers to deal with surges in

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workload from time to time. This not only reduces the risk associated with economic slowdowns but also results in greater job security for its smaller group of talented, permanent workers.

In India, Infosys maintains plenty of cash. The company believes cash gives a lot of comfort in a volatile industry. According to Infosys' 2003--04 annual report: "Your company's business environment is characterised by swift changes in technology, consequent rapid obsolescence and shifts in client spending patterns that cause revenue volatility. Your company has to retain the resilience to reinvent in its business, sustain the operations under adverse conditions, and make investments in marketing and R&D efforts. Thus, an essential part of its derisking strategy is to have a liquid balance-sheet and sustain profitability. Your company desires to have liquid assets at 25 per cent of revenue and 40 per cent of the total assets."

An airline like Jet Airways can manage its exposure to fluctuating oil prices by taking operational measures to cut fuel consumption. This might involve better maintenance or purchasing more fuel-efficient engines. Another option is to buy financial instruments such as futures to hedge this risk. This is the risk transfer approach.

### Strategy

Various factors determine the choice of the approach to handling risk. Often a combination of these approaches makes sense. The choice between a financial and organisational solution depends on the specific risk. Strategic risks, which are core to the business, have to be retained. So they invariably need organisational solutions. Where suitable financial instruments do not exist for risk transfer, organisational solutions may be unavoidable. In the case of some risks, organisational solutions may be too complicated, too expensive or may conflict with the company's strategic goals. In such situations, risk transfer solutions such as derivatives or insurance may be more efficient than organisational solutions.

The ultimate strategy for the rainy day is to keep overheads and debt low and hold plenty of cash to tide over uncertainties about which managers have little idea today. Indeed, equity is an all-purpose risk cushion. The higher the amount of risk that cannot be accurately measured or quantified, the larger the equity component should be. It is no surprise that technology companies like Microsoft and Infosys keep little or no debt on the balance-sheet. Of course, use of more equity also implies lower returns as equity is a more expensive source of funds. As Infosys mentions in its 2003-04 annual report, "...increased liquidity reduces the earning on equity and capital productivity. To limit this, your company has fixed norms for the returns it expects."

Company-wide integration of risk management activities enables the purchase of more cost-effective insurance and derivative contracts.

Moreover, a failure to understand the inter-relationships between different risks and deal with them in a holistic manner can lead to serious problems.

Long Term Capital Management (LTCM), the celebrated hedge fund, had a star-studded team, including two Nobel Prize-winning economists. The fund controlled its market risk by pursuing what are called convergence trades in bond markets. LTCM would go long in one set of financial instruments and short in

another related set. The yields would, under normal circumstances, converge with time and LTCM would book profits.

Unfortunately, in 1998, the situation was far from normal. The assumptions behind the hedge fund's sophisticated models became unrealistic. Yields started diverging instead of converging, following worries among investors about the stability of emerging markets. This happened in the aftermath of the Asian currency crisis followed by the plunge of the rouble in Russia. LTCM's positions were fundamentally sound but the company did not have the liquidity to hold on till the situation improved. With insufficient liquidity, LTCM went bankrupt and had to be bailed out under a Federal Reserve sponsored plan. What actually happened was that market risk became a liquidity risk.

Similarly, in the 1980s, many American banks gave dollar-denominated floating rate loans to countries like Mexico and Brazil to eliminate both exchange rate and interest rate risk. When interest rates in the US skyrocketed during the tenure of Federal Reserve chairman Paul Volcker (who was fighting inflation then) and the dollar appreciated, there were major defaults. In short, market risk was transformed into credit risk. It is precisely because attempts to control one type of risk may result in other types of risk that the need for ERM has become compelling.

### **Indian scenario**

Compared to developed countries, acceptance of ERM has been quite slow in our country. One reason is that the country's financial markets are still regulated to a large extent. For example, interest rates in India tend to change gradually. We do not have the see-saw fluctuations that are common in many developed countries. Moreover, pressures for compliance from the legal and regulatory authorities are still mild compared to countries like the US. Investor awareness is also relatively low.

Even in the case of banks and financial institutions, which logically should have well developed risk measurement and control processes, ERM practice in India is way behind that in the west. The attention Indian banks pay to risk identification, measurement and monitoring is highly inadequate. This is evident in the quality of their risk reporting and disclosures.

Take the case of the financial institution HDFC. HDFC provides a brief account of its risk management practices in its annual report. And in this account, the discussion is very general and theoretical, with little quantification. As the HDFC annual report (2003-04) mentions: "HDFC protects itself from foreign exchange fluctuations in respect of foreign currency borrowings availed of by the corporation through dollar-denominated rupee loans and various risk management arrangements. As at March 31, 2004, out of HDFC's borrowings in foreign currency amounting to USD 813 million, the foreign currency exposure on loans net of risk management arrangements is USD 182 million. In order to ensure matching of floating rate liabilities with floating rate assets, the corporation has entered into swaps to convert some of its fixed rate liabilities into floating rate liabilities. The swaps are generally benchmarked off government securities yields or USD Libor. As at March 31, 2004, outstanding swap contracts were for amounts aggregating to Rs 2,295 crore." There is no discussion of how HDFC will be affected due to the appreciation or depreciation of the dollar. Even a basic sensitivity analysis is missing.

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A similar phenomenon is observed in the case of ICICI Bank. The bank mentions in its annual report: "Our exposure to market risk is a function of our trading and asset liability management activities and our role as a financial intermediary in customer-related transactions. The objective of market risk management is to minimize the impact of losses due to market risk on earnings and equity capital. Market risk policies include asset-liability management (ALM) policies and policies for the investment portfolio... Interest rate risk is measured through the use of repricing gap analysis and duration analysis. Liquidity risk is measured through gap analysis. We ensure adequate liquidity at all times through systematic funds planning and maintenance of liquid investments as well as by focusing on more stable funding sources such as retail deposits. We mitigate our exposure to exchange rate risk by stipulating daily stop-loss limits and position limits." This account is more like a textbook defining some terms in risk management. Contrast this with global players like UBS or Credit Suisse which provide detailed accounts of their risk management in their annual reports, including sophisticated techniques used for risk measurement such as value-at-risk and stress testing.

### **The lacuna**

Indian software companies have taken the lead in implementing ERM in our country. They make more detailed disclosures than our banks and financial institutions. Yet, the quality of their disclosures leaves a lot to be desired. Mathematical modelling is virtually absent. This applies even to a company like Infosys, considered to be a leader in ERM practice in the country. Little attempt is made to quantify risk, even financial risk. Techniques like value-at-risk, stress testing and sensitivity analysis are not mentioned in the Infosys annual report.

Take currency risk. The Infosys annual report for 2003-04 says this: "Your company's risk management policy ensures that expenses in local currency are met through receipts in the same currency. Your company seeks to reduce the effect of exchange rate fluctuations on operating results by purchasing foreign exchange forward contracts to cover a portion of outstanding accounts receivable. Contracts in non-US and non-EU regions are in internationally tradable currencies so that your company is not exposed to local currencies that may have non-tradability risks. Your company does not take active trading positions in foreign currency markets and operates only to hedge against the appreciation of the rupee during the year." Infosys does not even provide a sensitivity analysis which indicates how much the company will be affected by movements in major currencies, such as the dollar. One gets a feeling that Indian IT companies discuss risk in detail in their annual reports more to impress foreign investors, not because they have embraced ERM as a core philosophy.

In most Indian companies, information systems are rudimentary and fragmented. Without the necessary information systems, serious implementation of ERM cannot be considered, let alone implemented. A good risk management system should be able to capture a whole range of data and be able to process them quickly.

The appointment of a Chief Risk Officer (CRO), who reports directly to the board of directors, is a clear demonstration of a company's intentions to manage risk systematically. Few Indian companies have created the post of CRG. Even Infosys does not have one. It is common to see CFOs doubling up as CROs. The post of CRO is common in many *Fortune 500* companies, especially financial services and e.lergy companies.

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Most Indian companies view risk management in minimalist fashion. Le., how to minimise losses rather than looking at risk management as a comprehensive approach for maximising shareholder wealth. This goes against the core philosophy of ERM.

### Endpoint

Till the early 1990s, in most organisations across the world, an integrated approach to risk management was lacking. The formation of risk management departments was mainly aimed at reducing the total insurance premium paid or transaction costs while hedging risk. From the mid-1990s onwards, this philosophy has been changing. The range of risks which companies have to manage has widened. Intangible, commercial and operational risks have become more important than insurable risks. The need to take a company wide view of risks is becoming increasingly felt. Many companies are establishing sophisticated risk controls. They are presenting relevant information to the board and to the shareholders.

A recent survey conducted by the *Economist Intelligence Unit* (EIU) has reported the following:

More and more companies are using ERM.

- The use of ERM has made many companies feel more confident about dealing with risk.
- Many companies are convinced that ERM can result in clear benefits for shareholders by increasing the price-earnings-ratio and reducing the cost of capital.
- Investors are also beginning to appreciate the use of ERM.
- The importance of non-traditional risks like customer loyalty, competition and operational failures is increasing.
- Executives admit that implementation of ERM needs various structural measures to align risk management, strategic planning, information systems and organisational culture.
- Few companies aggregate their risks across the entire organisation.
- Managers accept that current quantification methods are inadequate to measure many intangible risks.

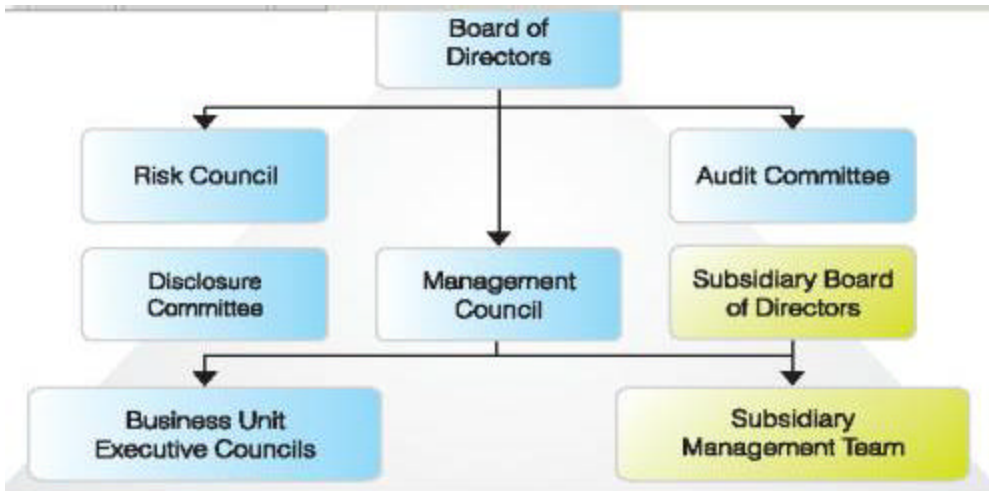
In the years to come, ERM will gain in importance for various reasons. Regulators in many countries are pressuring companies to manage risks more systematically. Regulators are also insisting on better reporting and disclosure practices. Mounting shareholder pressure for better corporate governance is also giving a boost to ERM. Developments in the financial markets in general and the convergence of the capital and insurance markets in particular are also facilitating an integrated view of a company's risks. Many well-managed companies have begun to look at ERM as a proactive tool to add value for shareholders, rather than as a defensive approach to minimising the negative impact of risks. ERM is also being used to achieve a common understanding of risk across functions and business units and to help top management exercise greater control over the company's operations.

Indeed, ERM is rapidly emerging as a powerful tool that facilitates better decision-making and enables people to take more risk than they would otherwise do. It is time Indian companies embraced ERM as a core philosophy.

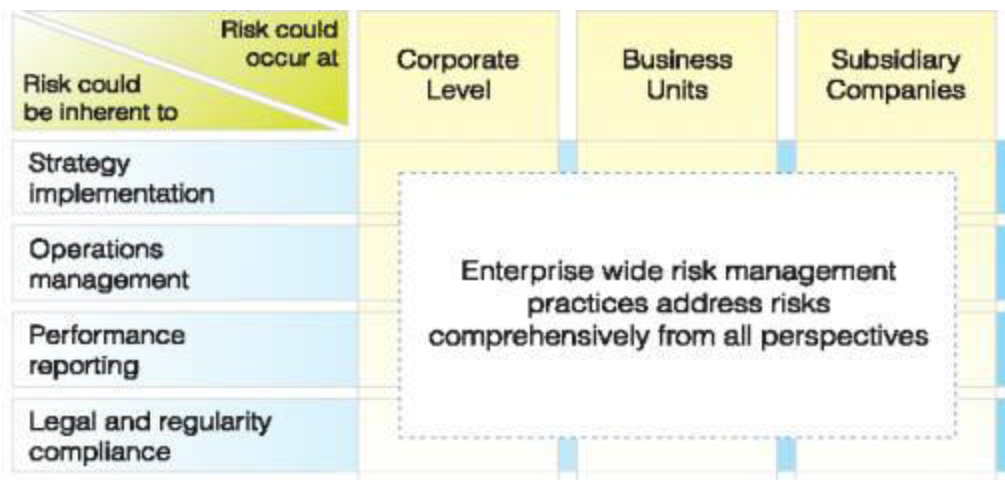
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Exhibit 1

Organization Structure for implementing ERMat Infosys



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Source: Infosys Annual Report, 2003-2004.

### Exhibit 2

#### Risk Matrix: A listing of important risks facing organizations

<b><i>Business</i></b>
Wrong business strategy
Competitive pressure on price/market share
General economic problems
Regional economic problems
Political risks
Obsolescence of technology
Substitute products
Adverse government policy
Industry sector in decline
Take-over target
Inability to obtain further capital
Bad acquisition
Too slow to innovate
<b><i>Financial</i></b>
Liquidity risk
Market risk
Going concern problems
Overtrading
Credit risk
Interest risk
Currency risk
High cost of capital
Treasury risk

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Misuse of financial resources  
Occurrence of types of fraud to which the business is susceptible  
Misstatement risk related to published financial information  
Breakdown of accounting system  
  
Unrecorded liabilities  
Unreliable accounting records  
Penetration and attack of IT systems by hackers  
Decisions based on incomplete or faulty information  
Too much data and not enough analysis  
Unfulfilled promises to investors

### ***Compliance***

Breach of Listing Rules  
Breach of financial regulations  
Breach of Companies Act requirements  
Litigation risk  
Breach of competition laws  
VAT problems  
Breach of other regulations and laws  
Tax penalties  
Health and safety risks  
Environmental problems

### ***Operational and other***

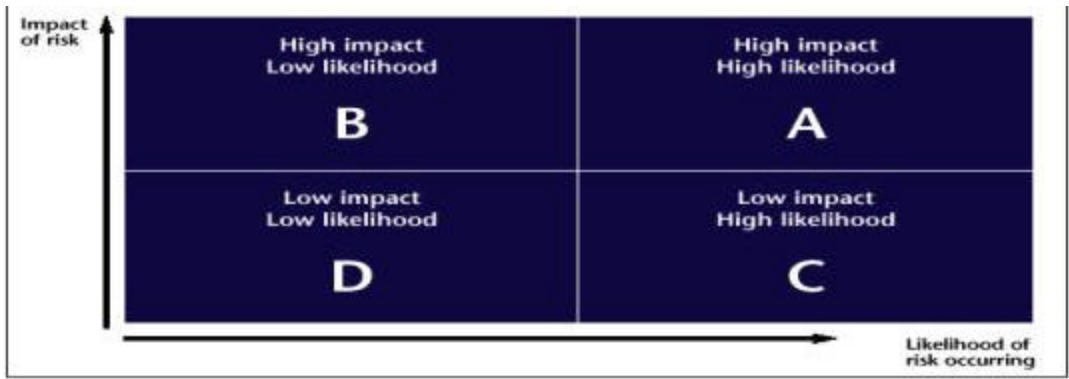
Business processes not aligned to strategic goals  
Failure of major change initiative  
Loss of entrepreneurial spirit  
Stock-out of raw materials  
Skills shortage  
Physical disasters (including fire and explosion)  
Failure to create and exploit intangible assets  
Loss of intangible assets  
Breach of confidentiality  
Loss of physical assets  
Lack of business continuity  
Succession problems  
Year 2000 problems  
Loss of key people  
Inability to reduce cost base  
Major customers impose tough contract obligations  
Over-reliance on key suppliers or customers

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<p>Failure of new products or services</p> <p>Poor service levels</p> <p>Failure to satisfy customers</p> <p>Quality problems</p> <p>Lack of orders</p> <p>Failure of major project</p> <p>Loss of key contracts</p> <p>Inability to make use of the Internet</p> <p>Failure of outsource provider to deliver Industrial action</p> <p>Failure of big technology related project</p> <p>Lack of employee motivation or efficiency</p> <p>Inability to implement change</p> <p>Inefficient/ineffective processing of documents</p> <p>Poor brand management</p> <p>Product liability</p> <p>Inefficient/ineffective management process</p> <p>Problems arising from exploiting employees in developing countries</p> <p>Other business probity issues</p> <p>Other issues giving rise to reputational problems</p> <p>Missed business opportunities</p> <p><i>Source: Turnbull Committee report, Institute of Chartered Accountants, London.</i></p>
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**Exhibit 3**

**How to Prioritise risks**



*Source: Turnbull Committee report, Institute of Chartered Accountants, London.*

**Exhibit 4:**

**Top 5 risks by industry**

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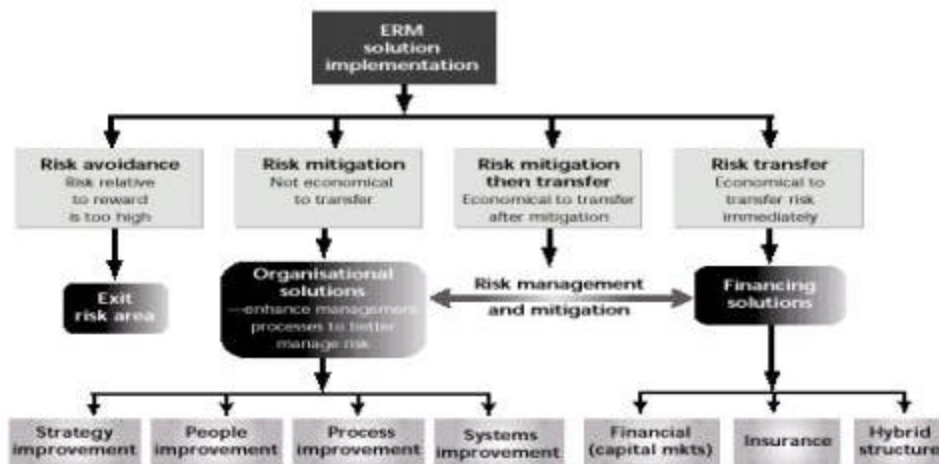
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Rank of risk	Financial services	Retail consumer products	Manufacturing	High tech! Telecoms	Utilities/Natural resources	Chemicals/Pharma
1	Equity/currency! interest rate market shifts	Competitive threats	Macro-economic issues	Competitive threats	Volatility in commodity prices	Product recall/contamination liability
2	Customer loyalty/satisfaction	Attraction/retention of quality people	Competitive threats	Customer Loyalty/satisfaction	Regulatory issues	Regulatory issues
3	Competitive threats	Operational Failure/interruption	Operational Failure/interruption	Regulatory issues	Competitive threats	Customer Loyalty/satisfaction
4	Macroeconomic issues	Customer Loyalty/satisfaction	Disruption in supply chain/JIT process	Attraction/retention of quality people	Customer Loyalty/satisfaction	Failure of research and development
5	Regulatory issues	Macro-economic issues	Attraction/retention of quality people	Disruption in supply chain! JIT process	Attraction! retention of quality people	Operational Failure/interruption

Source: Economist Intelligence Unit

Exhibit 5

Risk Solution alternatives



Source: MMC Enterprise Risk.

Exhibit 6:

Different ways of classifying risk

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### ***Peter Drucker***

Risk that is built into the very nature of the business and cannot be avoided Risk one can afford to take

Risk one can afford not to take

Risk one cannot afford not to take

### ***Traditional framework***

*Hazard:* Natural hazards, accidents, fire, etc.

*Financial:* Interest rates, exchange rates, credit, asset-liability mismatches *Operational:* Systems, processes, IT, regulatory compliance

*Strategic:* Inability to adjust to changes in environment, customer priorities, competitive conditions.

### ***"Vertical" approach***

Strategic: Capacity expansion, vertical integration, diversification Technology

Mergers & acquisitions

Political

Environmental

legal

Ethical

### ***Value chain approach Finance***

Human resources Information technology Marketing

Operations