Executive summary

PricewaterhouseCoopers Global Financial Services Briefing Programme

Welcome to the 15th report in our global financial services briefing programme, entitled Creating value: Effective risk management in financial services

This briefing, written in cooperation with the Economist Intelligence Unit (EIU), looks at risk management in the financial services industry. Financial institutions have devoted considerable time and resources to risk management over the past few years, often in response to regulatory initiatives such as Basel II, Sarbanes-Oxley and others. But how effective is the risk management function at adding value to the business?

The research effort for this briefing comprised two global initiatives:

- The EIU and PricewaterhouseCoopers[1] conducted a special on-line survey of senior executives in financial institutions on the subject of risk management. Executives from over 420 institutions in the Americas, Asia and Europe participated in the survey which was conducted during December 2006 and January 2007.
- The EIU held over 12 one-to-one interviews with senior executives at financial institutions in the Americas, Asia and Europe.

The survey findings and interviews were further supplemented by significant desk research.

I am confident that you will find this briefing thought-provoking and insightful. Copies of this, along with our previous briefings on **Wealth Management, Economic Capital, Risk Management, The Trust Challenge, IFRS, Compliance, Restructuring, Governance, Performance Improvement, Growth, Offshoring and Customer-centric Growth**, are all available free of charge from our web site (www.pwc.com/financialservices).

If you would like to discuss any of the issues raised in this briefing in more detail, please speak with your usual contact at PricewaterhouseCoopers or one of the editorial board members listed at the end of this briefing. We would also appreciate your feedback on this briefing as it helps us to ensure that we are addressing the issues that you are focusing on.

Jeremy Scott
Chairman, Global Financial Services Leadership Team

[1] In this publication unless the context requires otherwise, the term ‘PricewaterhouseCoopers’ refers to the network of member firms of PricewaterhouseCoopers International Limited, each of which is a seperate and independent limited legal entity.

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On the face of it, the profile of risk managers has never been higher. Regulators have enacted sweeping changes to the way financial institutions handle risk; senior executives are keenly aware of the damage that can be done to their brands and bottom lines if risk is not managed properly; and rating agencies and analysts are scrutinising risk management practices as never before.

Yet in many ways the discipline of risk management is still neglected. According to a survey of more than 400 senior executives in financial services worldwide, carried out exclusively for this briefing by the Economist Intelligence Unit (EIU) on behalf of PricewaterhouseCoopers, the current limitations of risk management become very clear:

- **Focus on regulators.** The regulators have driven the risk management agenda in recent years, particularly through the introduction of Basel II, Solvency II for insurers and UCITS 3 for asset managers. Executives questioned for this report think their organisations' risk management function is most effective at ensuring regulatory compliance; and they identify better relationships with regulators as the most common source of competitive advantage from successful risk management. In other words, there appears to be a tendency among respondents for successful risk management to be defined in regulatory terms.
- **Lost value creation potential.** Regulatory compliance is critical, of course, but risk managers should also be recognised as adding positive value in more ways than maintaining the licence to operate or reducing the regulatory burden. A significant number of respondents are keen to emphasise that effective risk management burnishes their reputation with customers and shareholders, enables sustainable investment performance, frees up capital for investment, delivers better management data and allows for more competitive pricing. There is a slight concern among respondents, however, that the level of attention given to risk management by senior executives could decline over the next three years as the regulatory heat fades. If this is the case, it would certainly be dangerous – should an event that could have been foreseen take place in the context of less rigorous management oversight, the market and regulators are likely to be hostile in their reaction.
- **Disconnect between risks and capabilities.** In line with the findings of previous briefings in this series,[2] there are wide gaps between the risks that organisations find most pressing and those that they manage most effectively. Although respondents report high levels of effectiveness around classic sources of uncertainty, such as credit risk and market risk, confidence levels drop when it comes to less traditional and tangible sources of risk, such as business risk, reputational risk and people risk, which are also perceived to be among the most threatening.
- **Disengagement by the business.** The involvement of risk management in strategic business activities is patchy and, when compared with findings from earlier

[2] *Taming uncertainty: Risk management for the entire enterprise* and *Uncertainty tamed? The evolution of risk management in the financial services industry*

Executive summary continued

briefings in this series, has not increased. A mere 47% of respondents say that there is a structured assessment of risk around strategy development, compared with 50% in the 2004 report, and only 40% say that risk management is formally involved in budgeting and financial reporting, compared with 54% in 2004. The institution as a whole would benefit if risk managers were involved more widely in these crucial strategic decisions and if there were common tools to assess the risks the company faces across its full range of operations.

As the tide of activity caused by Basel II and other initiatives begins to ebb slowly, the time is right for executives inside and outside the risk function to re-evaluate the contribution that risk management makes to the business. 'This is a challenging and exacting time for risk managers and senior executives should be seeking more from risk management,' says Phil Rivett, Global Leader in Financial Services Assurance for PricewaterhouseCoopers UK. 'Their role needs to evolve as financial institutions increasingly recognise the opportunities and value of a better understanding of risk.'

Reaching the next stage in risk management

Financial services firms will not reap maximum value from risk management unless their culture, organisation, processes and data are all properly aligned. The survey findings and interviews conducted for this briefing suggest that institutions must concentrate on the following areas:

Commitment from the top. Asked to identify the changes that would enable the risk management function to add more value to the business, the greatest number of respondents cited a change in mindset – namely, seeing risk management as a more strategic function. For risk managers to participate fully in critical business decisions, it is essential that senior management remains committed to, and engaged with, the function. The survey indicates a tentative concern, however, that executive focus on risk management may be on the wane. There is also a worry that, as the average tenure of chief executives diminishes, so their focus on longer term risks may fade.

Embedded risk managers… Just as companies have embedded the finance function in individual business units, with the result that commercial managers are now expected to demonstrate greater levels of financial literacy, so too there should be similar scope to embed the risk function more deeply. Embedding risk managers within individual business lines leads to greater understanding and awareness of risk, and of its link to performance. While this strategy has been employed for some time at a number of companies, there is clearly still room for improvement. Only one in eight respondents believes that their organisations' business units and risk management function are very well integrated at the moment; only one in six thinks that the risk management and finance function are very well integrated.

…and a strong central presence. A central risk management function with a strong mandate remains essential to monitor, measure and oversee treatment of risk by individual business units, and to ensure that independence and objectivity are not sacrificed. Strong controls at the centre are also needed to ensure that risk information is rigorous and relevant to decisions being taken. Risk should also be involved in key discussions around strategy development, mergers and acquisitions (M&A), and other corporate activities. History has proved, however, that it is difficult to strike the right balance between embedded risk managers and a strong central presence.

Overlapping roles and responsibilities. An unintended consequence of the rush to meet regulatory standards on risk and control has been a profusion of separate, and expensive, overlaps in governance, risk and compliance. For example, identifying and assessing risks in different disciplines is frequently duplicated across multiple functions, such as compliance and internal audit, and business units. 'By adopting a principles based approach, moving to common building blocks for risk

Executive summary continued

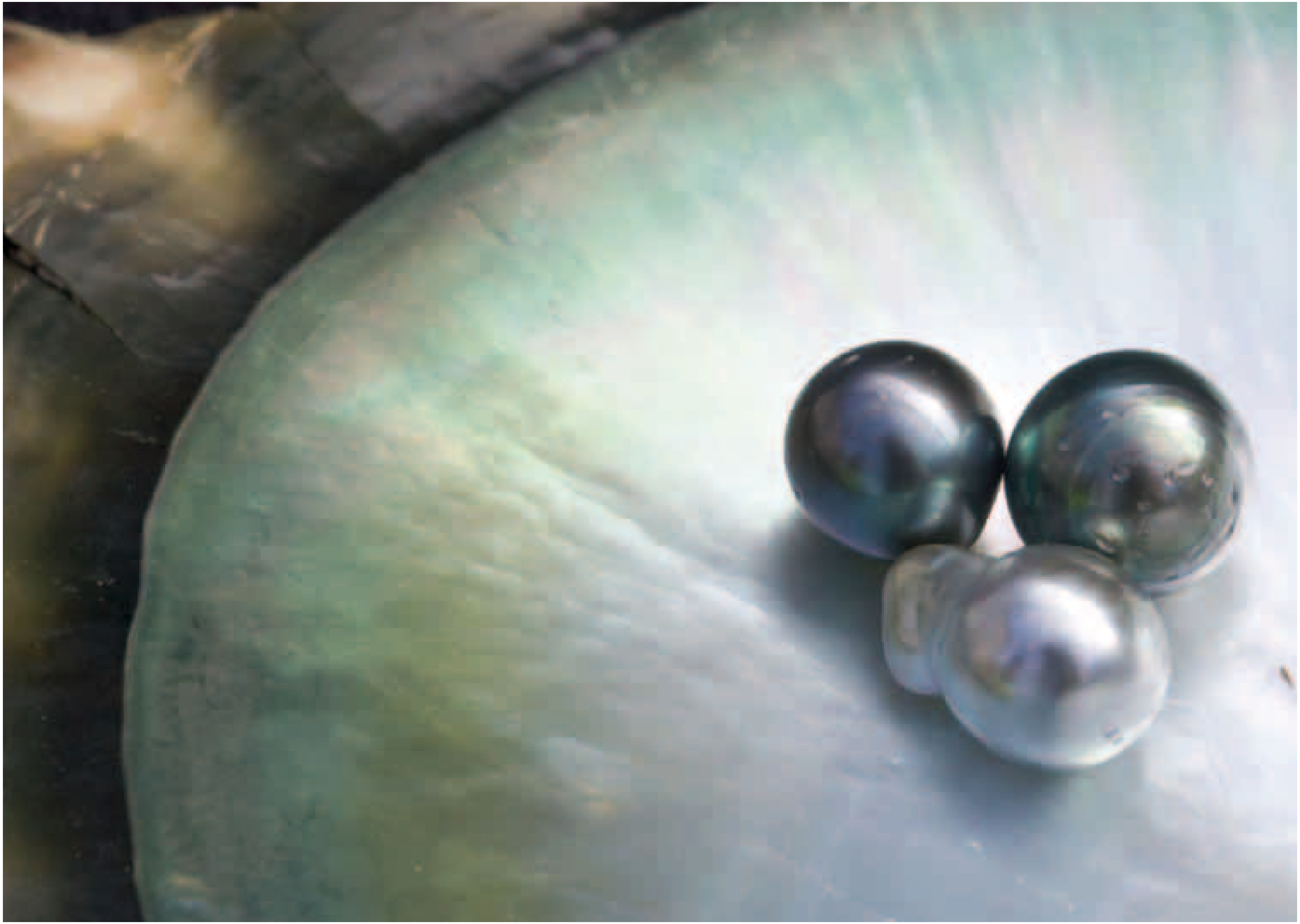
Reaching the next stage in risk management continued

assessments, and levering standard risk definitions and control libraries, clients can realise cost savings of 10% to 20% while improving the overall effectiveness and quality of the governance, risk and compliance functions', says Neal Oswald, a partner in the banking and capital markets practice of PricewaterhouseCoopers Canada (Toronto office).

Quality and utility of data. There is no shortage of risk-related data circulating within financial institutions, but often there remains considerable doubt over its quality or utility. Survey respondents were equivocal about how valuable the data they receive is, as a tool for managing their businesses. Risk managers must therefore enter into a closer dialogue with executives outside the risk function to ensure that the data they gather is accurate and useful for them to create value as well as ward off risks.

Risk is positive as well as negative. Successful firms have demonstrated that risk management has a proactive role to play in shaping new ideas for products and services as well as in protecting a company's franchise. Nurturing a creative tension between these two faces of an organisation is often the first step in reaping rewards from investment in risk management and generating more value from it in future.

Culture and governance. Organisation, process and data must be underpinned by a culture of risk awareness and sound governance. 'Much of it comes down to the importance of culture and making sure that you have the right approach to risk', says Michael Ullmer, Director of Finance and Risk at National Australia Bank. 'A firm has to improve its financial performance for stakeholders but it has to be seen to be doing it in the right way.' There is a long way to go for many institutions: only one in five respondents strongly agrees that an awareness of risk is pervasive in their organisations.



Beyond Basel

Regulatory pressures have overshadowed the risk management function for the past few years. The new standards for capital adequacy to be imposed on international banks under Basel II have been years in the making, as have other initiatives, such as UCITS for asset managers.

Solvency II for insurers is also likely to be an equally long time in gestation. Companies with securities listed in the US, including financial institutions, have also had to contend with the extra cost of complying with the Sarbanes-Oxley Act, which includes the need to demonstrate effective internal controls. From this year, the Act's reach will also extend to cover foreign firms whose shares are listed in the US. The introduction of International Financial Reporting Standards (IFRS) represented another hefty burden with which firms must comply. And finally, the introduction later this year of the European Union's (EU) Markets in Financial Instruments Directive (MiFID), which aims to standardise the treatment of investment products, will affect all financial institutions that operate in the Union.

No surprise, then, that two-thirds of the 421 respondents to our survey cited regulatory pressures as the main driver of change in their risk management priorities over the past three years. Nor are these pressures about to disappear. Implemented in the EU in 2007, the Basel II standards could take years to be phased in by regulators around the world. Banks still need to get to grips with Pillar 2 and Pillar 3 of the framework. For their part, insurers are bracing themselves for the introduction of Solvency II (and for those companies whose operations span both banking and insurance, complying with both sets of legislation represents a particular headache).

The implementation of these existing initiatives is changing the nature and reach of risk management within organisations. According to Maria-Isabel Fadul, Executive Director for Banking and Capital Markets in PricewaterhouseCoopers France: 'If an institution is to incorporate Basel II effectively into its business model, it needs to realise that this will impact the organisation at all levels, and all of its functions and businesses, and their respective processes.'

Although the regulatory impetus is not expected to fade, banks are currently enjoying a brief respite from the most arduous pressures. As a result, a slight re-ordering or refocusing of risk management priorities could be timely. While respondents continue to expect regulation to be the main driver of change for the risk function, it is picked by significantly fewer respondents when they look ahead over the next three years. Instead, the faint outlines of a redefined agenda are emerging: more respondents expect the aim of increasing the value of risk management to the business to drive change. Securing competitive advantage over rivals and a greater focus on efficiency are also expected to rise in importance.

Beyond Basel continued

In addition, having devoted significant resources to strengthening risk processes and systems in order to comply with Basel II and other legislation, banks should be looking for ways to use this investment to enhance their strategic decision-making. 'Having spent a lot of time and energy preparing for the latest wave of regulation, institutions are now at a stage where they need to think about doing things that are to the direct benefit of the business', says Miles Kennedy, a partner of PricewaterhouseCoopers UK and a specialist in banking and capital markets. 'The far-sighted will realise that what they have spent, and should continue to spend, on risk management is an investment in their future profitability.'

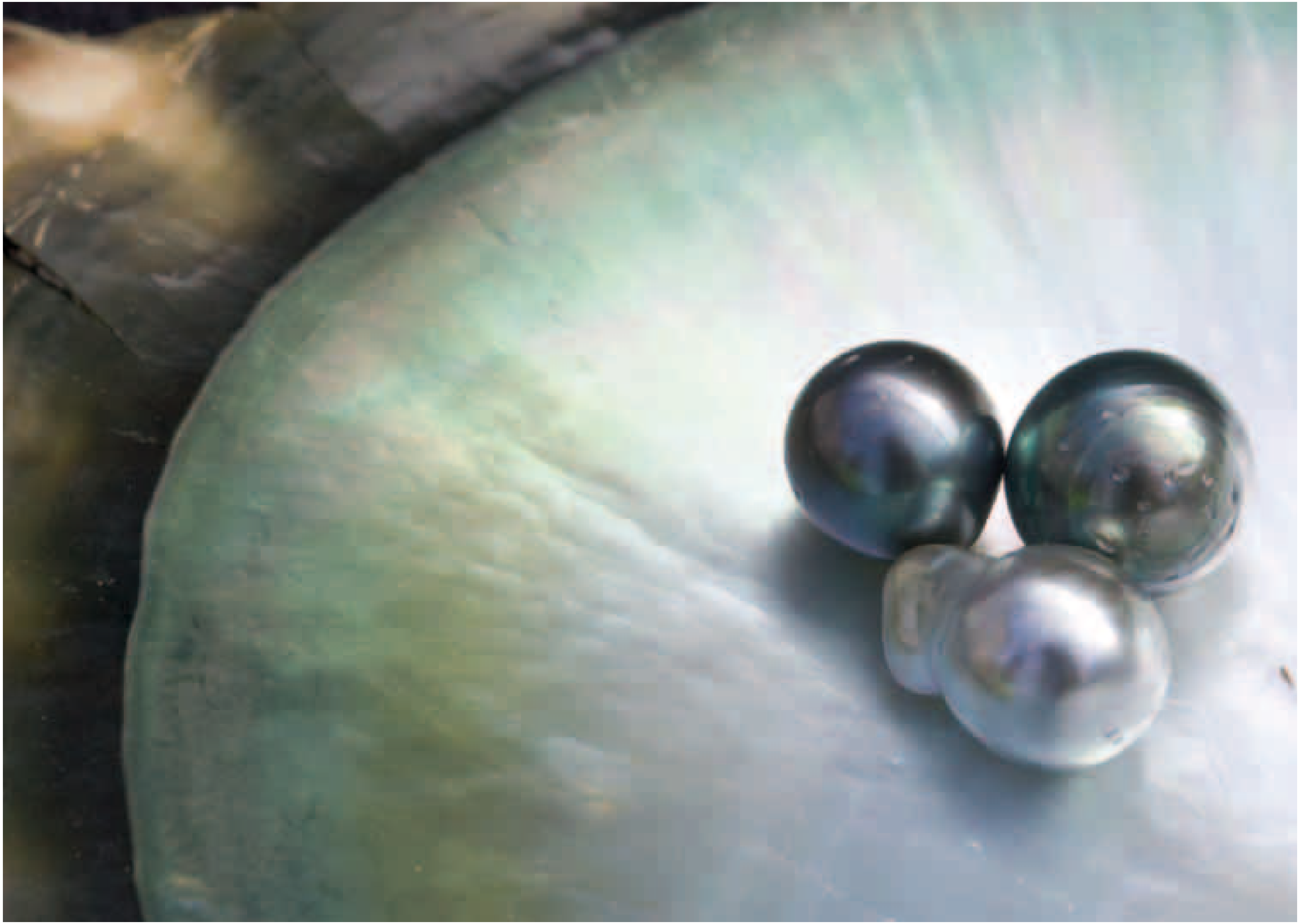
He is not alone. 'Risk managers generally should devote their time to activities that enhance shareholder value, and much of that is about appropriately measuring risk and being able to put in place incentives to optimise returns relative to risk', says Mike Alix, Chief Risk Officer of Bear Stearns.

Winds of change

Main drivers of change in risk management priorities over the next three years; % change from drivers of change over the past three years

Increased focus on risk management on the part of senior management and board	-14%
Regulatory pressures	-11%
Losses at our own institution	-6%
Governance scandals affecting other financial institutions or major corporates	-5%
Changes in reporting standards	-4%
Threat of terrorist activity	-2%
Focus on social responsibility programmes	-1%
Increased levels of IT security risk	-1%
Increased levels of geopolitical risk	0%
Demands for corporate transparency and accountability	+3%
Increased focus on risks pertaining to people and behaviour	+3%
Increased offshoring activities leading to greater emphasis on business continuity	+4%
Levels of customer satisfaction and/or churn	+4%
Macroeconomic volatility	+4%
Financial market volatility	+4%
Increased stakeholder focus on risk management practices	+4%
Securing competitive advantage over competitors	+4%
Focus on cost reduction and efficiency	+5%
Aim of increasing value of risk management to the business	+9%

Source: PricewaterhouseCoopers/EIU survey, January 2007



Defining value

What would a new value-based agenda for risk managers encompass? Rather than seeing risk management through the prism of regulation and loss, risk managers would instead direct their attention towards those activities that boost profits, improve service to customers and enhance competitive advantage.

One area where a stronger focus is needed is the efficiency of operations. For example, Fernando de la Mora, a partner specialising in risk management in financial services at PricewaterhouseCoopers US (New York office), thinks firms have paid too little attention to seeking out synergies between departments on risk and control processes. Much of this is because regulators focus on a particular business or regulation and insist on certain steps being taken. Only later do companies realise that, because their compliance functions also concentrate on specific areas of the business, the institution as a whole has collected duplicate sets of data, several times over, using different tools or standards.

Another area where greater value could be derived is in strengthening the integration between risk and other functions, especially with the finance function. Recent progress in risk management has helped companies to reduce the number of surprises to their earnings. It has also resulted in a more balanced approach to the deployment of capital at the group level. ‘The closer the alignment of key measures of risk and financial performance, the more rational the basis for management decisions and the sharper the focus on growth and the creation of value’, says Mr de la Mora. ‘Perhaps the greatest innovation is enabling companies to cascade metrics on capital allocation and risk-adjusted performance from the level of the business entity all the way down to products and the client.’

The risk function should also focus on ways in which it can confer competitive advantage in relationships with customers and shareholders (see box on Lyxor). Many survey respondents are keenly aware of the reputational effects of good risk management. Asked how effective risk management confers competitive advantage on their organisations, significant minorities say that important areas in which it achieves this include better reputations among customers, rating agencies, shareholders and employees. For example, as trustees of pension funds push an increasing amount of money towards the managers of alternative assets (such as hedge funds) in the hope of generating higher returns, those providers that can define clearly their risk appetite and achieve sustainable returns within a strong risk management framework can expect to gain a competitive advantage over their rivals in terms of their relationship with these customers.

Another example is sustainability, which is likely to become a more important concern for customers, regulators and other stakeholders, especially in the context of loans to companies involved in environmentally sensitive areas such as oil exploration and transport, mining, forestry, or power generation. The pressure on banks to be seen to support sustainable development is becoming more acute. Banks that include environmental and sustainability considerations in their borrower risk rating processes and lending standards will be better prepared to assess emerging reputational and portfolio risk factors, to take appropriate action in the management of sector-specific risks and changes in public sentiment. Similarly, investors are becoming more discerning and aware of socially responsible investment practices and are increasingly including these considerations as part of their investment decision-making process. This results in changes to security

Defining value continued

values and adjustments to market capitalisation. It is important for risk managers to consider these factors in their risk assessments and decision-making processes.

Pricing is another area where risk managers can have a material business impact. The disciplines embodied in economic capital have helped leading firms to set appropriate pricing, leading to better and more profitable products. 'You can test to what extent clients are prepared to pay more for products that they like. You can also begin to strip away features which add little value in customers' eyes but which reduce your margins', says Koos Timmermans, Deputy Chief Risk Officer and a member of the main board of ING Group.

In some markets, particularly fast-growing ones in emerging economies, risk-based pricing is likely to make a big difference, says Bernhard Spalt, Chief Risk Officer of Austria's Erste Bank, which is active throughout central Europe. 'I believe the difference between banks who understand the risks in their portfolios and those who don't is likely to widen. In time the riskier business is likely to flow to those institutions which underprice their lending.'

Product development is yet another area where risk management can add value. For example, risk managers have helped to devise and create some of today's most successful credit derivatives, says Richard Evans, Deputy Chief Risk Officer at Deutsche Bank. Such instruments are designed to provide a way for institutions to generate liquidity while laying off risk.

Bringing benefits

In what ways, if any, does effective risk management confer competitive advantage on your organisation? (% of respondents)

We have a better relationship with regulators	55%
We have a better reputation among customers	47%
We have better and timelier data on our internal performance	45%
We are able to improve returns relative to the risks taken	42%
We have a better reputation with analysts and rating agencies	42%
We have freed up more capital for investment in our business	32%
We have a better reputation with shareholders	32%
Our selection of customers has improved	30%
We have better and timelier data on our markets	27%
Our pricing is more competitive	21%
We have a better reputation with employees	21%
We have reduced the cost of risk management	19%
We are better at attracting and retaining talent	18%
We have better relationships within the communities in which we operate	14%
None of the above	3%
Other	1%

Source: PricewaterhouseCoopers/EIU survey, January 2007

Defining value continued

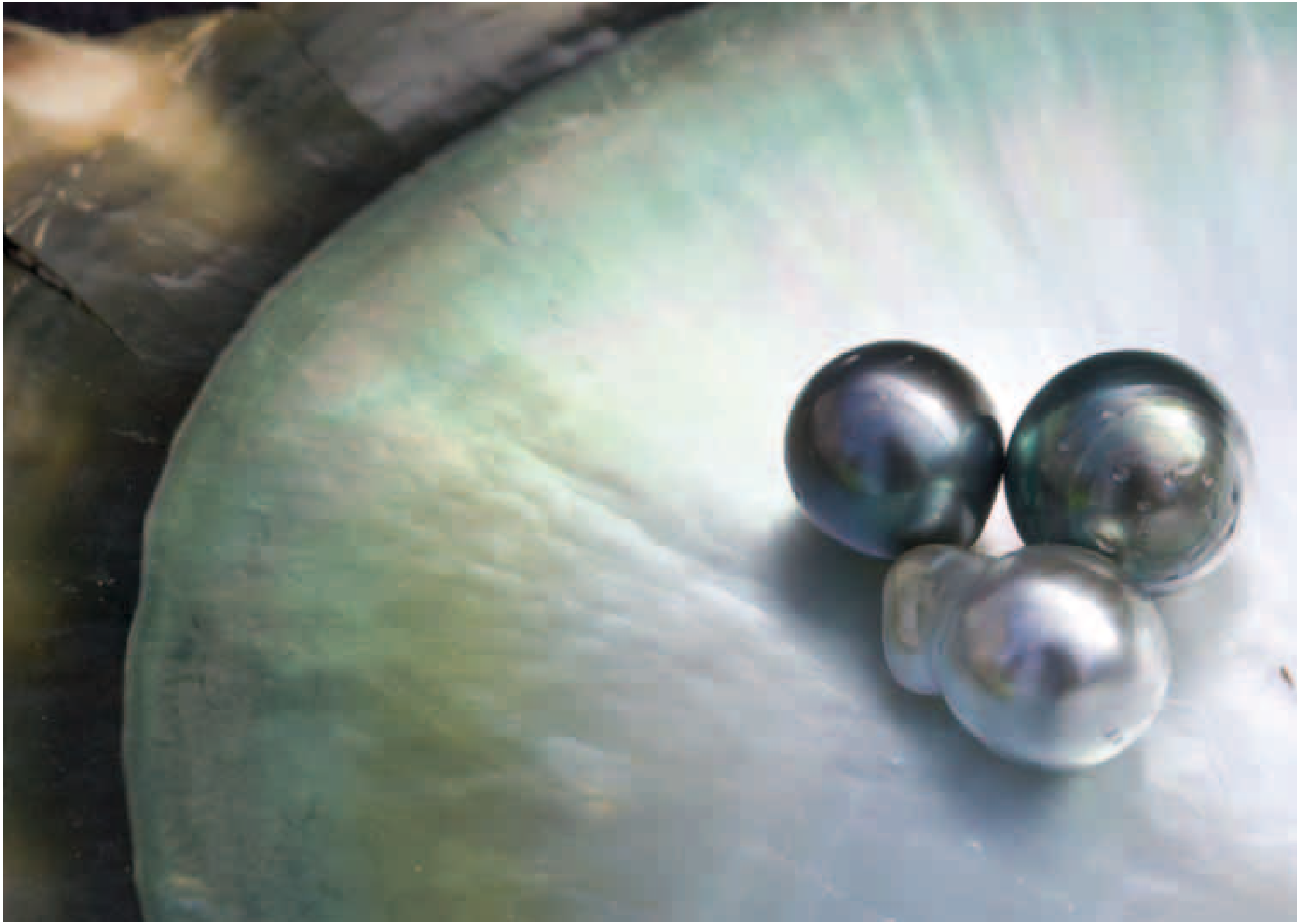
Case study: Lyxor

While the world's leading hedge funds may offer strong, sometimes stellar, financial performance, the lack of transparency that characterises this sector can dissuade more risk-sensitive investors. The managed account platform is an attempt to square this circle. Investors' assets are pooled into a replica of an existing fund, and then an identical investment strategy is applied according to a predetermined framework and a set of risk management guidelines.

Lyxor AM, a wholly-owned subsidiary of France's Société Générale, launched its managed account platform in 1998 and is one of the foremost proponents of this approach. Although the platform is aimed at all traditional hedge fund investors, it is particularly adapted for institutional investors, and provides access to a diversified range of hedge funds. By incorporating the funds in Jersey and listing them in Dublin, the company gives investors the chance to tap directly into more than 170 hedge funds with fewer complications from a tax perspective. Each fund is run on Lyxor's behalf by a selected manager, who is tasked with duplicating the strategy of their pre-existing fund for investors in the platform.

Each fund is subject to due diligence at the outset and is valued on a weekly basis by independent administrators. All risks are monitored regularly, too. Lyxor's proposition is simple: without such safeguards, hedge fund mangers do not get access to the platform; and, if they are not on the platform, they are not introduced to the company's growing band of investors.

As important for Lyxor – which at the last count had total assets under management of more than €63.3bn – is that the platform makes a virtue out of risk management and smart manager selection. Not only does it help investors to overcome the usual problems associated with hedge funds: a lack of transparency, regulation and liquidity. It also provides Lyxor with a selling point that gives it an edge over its rivals which, in the meantime, have developed similar platforms, and adds value to its business.



Fit for purpose?

If some institutions are already focused on value creation, many others still have a mountain to climb. Tellingly, the list of competitive advantages bestowed on respondent organisations by effective risk management is currently topped by better relationships with regulators.

Of course, a close understanding with a regulator is desirable, particularly for international firms seeking a consolidating supervisor to play a lead role in their operations worldwide. But the fact that this ranks above improving returns, bettering talent management and enhancing data as a source of competitive advantage suggests that success for risk managers is still defined largely in terms of regulatory risk and compliance rather than the needs of the business.

The survey illuminates other gaps between the regulatory-focused role currently played by risk managers and the value-focused agenda of the future:

- When asked how effectively the risk management function performs certain tasks, compliance with regulatory capital rules is seen as the area where it does best. Yet when asked to identify the most important objectives of the risk management function, regulatory compliance comes well down the list, behind tasks such as identifying new and emerging risks, and communicating key risks to the senior executive team.

This suggests that a greater proportion of resources needs to be directed towards those activities that are seen as higher priorities, thereby enabling managers to make better business decisions.

- Spending on risk management has soared in recent years, largely in response to regulatory requirements. Almost a quarter of respondents increased their annual spending by more than 25%, year-on-year over the past three years. But whereas 50% of the risk managers in the survey sample believe that the function contributes substantially more value than it did three years ago, only 23% of executives in other functions said the same. In addition, respondents from outside the risk function were twice as likely as risk managers to say that the extra spending resulted in no more value.

- Risk managers are not formally involved in many key business processes. Just 28% of respondents say that they include a structured assessment of risk in process and performance improvement, such as offshoring and outsourcing, and only 33% involve risk managers formally in M&A activity – an even lower proportion than who said it was involved in this activity in the 2004 report. Even the development of new products – an area where hazards abound – often lacks the formal involvement of risk managers. It is shocking that only 67% of respondents say that they conducted a structured risk assessment in an area that many see as core for risk managers.

- Risk-related data appear to have limited utility to many business managers. When asked whether risk-related information was used to help manage their firms, respondents were equivocal. Only 30% rated measures of risk-based capital as very useful in running the business; a mere 27% rated data on the distribution of credit quality in the same bracket. This is odd, at a time when attention is switching from the need to gather data over the long term to simpler metrics, which help managers to plan their businesses over the next three to five years. Respondents from outside the risk function were more focused on non-traditional risk metrics, such as reputational risk and client complaints, than their counterparts within the risk function.

Fit for purpose? continued

Limited influence

In which of the following business processes does your organisation include a structured assessment of risk? (% of respondents)

New product development/approval	67%
Compliance	56%
Allocation of capital to lines of business	48%
Strategy development	46%
Entering new geographical markets	43%
Customer selection and acceptance	42%
Budgeting and financial reporting	40%
Data management and governance	40%
Setting prices	37%
Merger and acquisition activity	32%
Assessment of business unit performance	28%
Process and performance improvement (offshoring, outsourcing)	28%
Forming alliances and partnerships	24%
Recruitment and retention policies	17%
Setting compensation policies	14%
Pension scheme funding	8%
None of the above	3%
Other	2%

Source: PricewaterhouseCoopers/EIU survey, January 2007

It is noteworthy too, that when asked how well their organisations manage certain risks, respondents to our survey show a higher degree of confidence about their ability to deal with the traditional (and usually quantifiable) risks associated with banking and financial services, such as credit and market risk.

Managing these traditional risks well is critical, of course – respondents also believe that credit risk and market risk are the greatest threats to their organisations' earnings. But it is not sufficient. First, respondents from outside the risk function think that the most important role of the risk management function is to identify new and emerging risks, ranking this objective higher than measuring and monitoring existing ones.

Second, less tangible risks, such as operational risk and reputational risk, rank among the more pressing faced by financial institutions. Yet despite these acknowledged risks, respondents feel far less confident in the efficacy of their response in these areas.

Operational risk is a particular bugbear for many banks, which have had to move quickly to bring their data into line with Basel II. Even for banks like Australia's Westpac, which has long used a measure of operational risk as part of its economic capital framework, the hurdles have been high. 'Being able to reconcile your internal data is a positive step, but it is likely to give you input on only one portion of the loss spectrum you desire', says Daryl Newton, head of the bank's Basel programme. 'To get a complete picture, you have to use external data and combine it with your own loss and scenario data.'

Third, as institutions chase growth by expanding into emerging markets, data issues mount (see box on Standard Chartered in China). Austria's Erste Bank has spent the past few years building up a business in central Europe, for example, where it is now the largest, single banking group in the region. One of the biggest challenges facing Bernhard Spalt, Erste Bank's Chief Risk Officer, is the paucity of reliable data. To overcome this, the bank works with credit

Fit for purpose? continued

bureaux to collect up-to-date information, which is then fed into the models used to calculate likely default rates.

Turkey's Garanti Bank faces similar dilemmas. Garanti faces two main challenges, says Cüneyt Sezgin, the bank's Chief Risk Officer. The first is the undeveloped nature of the market which, as in central Europe, results in a lack of data. The second is the volatility of the market. Measuring and managing risks in such circumstances, he says, 'is as much an art as it is a science.'

Case study: Standard Chartered in China

Doing business in China is a double-edged sword. On the one hand, it offers the rewards associated with investing in an economy that could be the world's largest within the next 25 years. At the same time, Chinese standards of corporate governance and regulation are evolving very fast as the economy has opened up to foreign investment following its WTO entry. Avoiding the pitfalls, while adding value through innovative risk management, is a difficult balancing act.

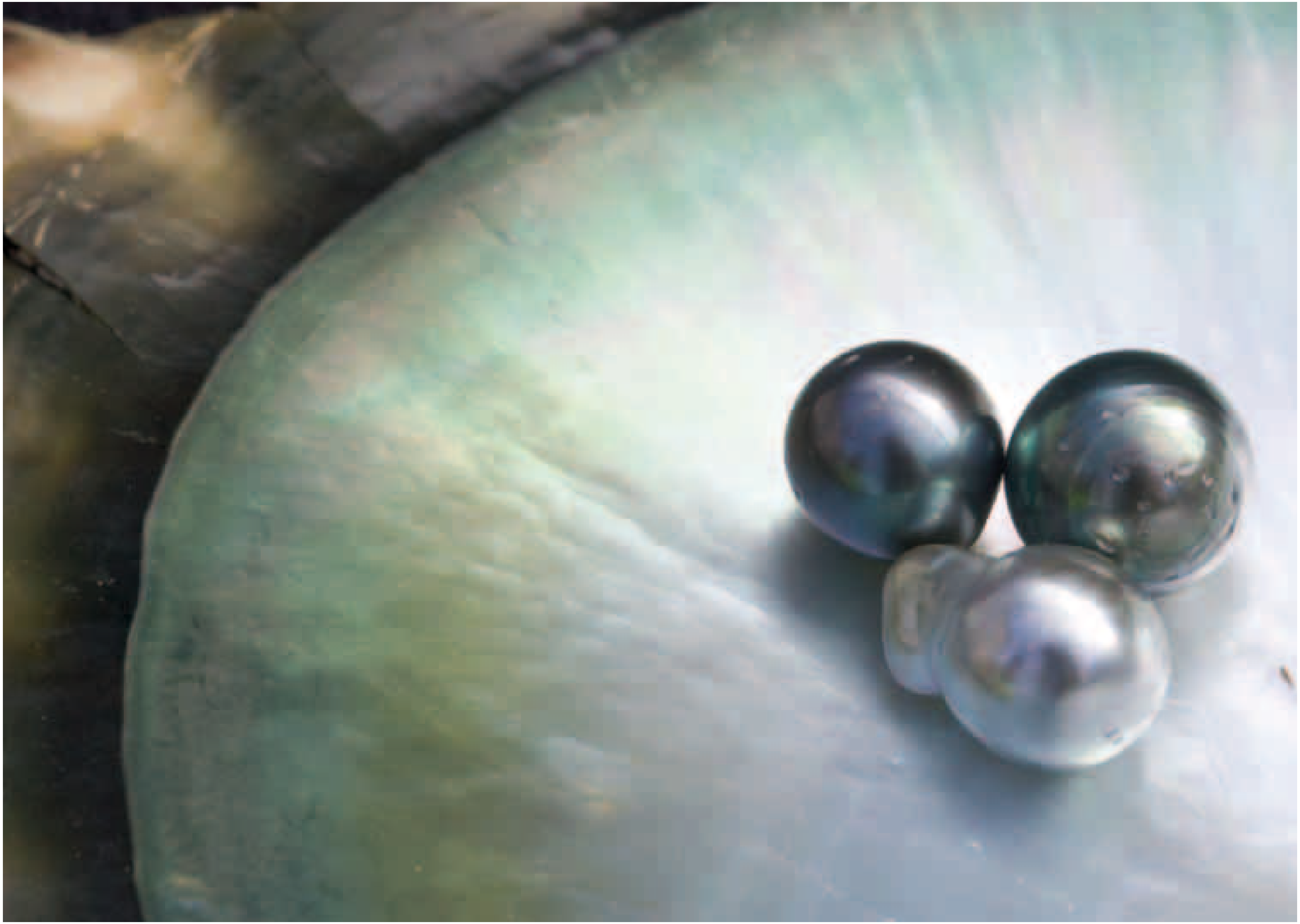
The potential of the country has attracted huge foreign investment in recent years, led by financial institutions which both finance and reap the benefits of China's growth. One such institution is Standard Chartered, the British-based bank, which has more than 2,200 staff in 12 branches, eight sub-branches and three representative offices on the Chinese mainland.

Standard Chartered has been operating in the country since 1858, when it opened a branch in Shanghai, giving it an advantage over many of its competitors. It has committed to rapid expansion in the country to consolidate its position among the market leaders.

Standard Chartered can draw on its experience in emerging markets around the world to feed into its risk management planning in any one country. 'One of our key advantages is a unique network built up from our presence in Asia, Africa and the Middle East', explains David Godwin, head of client relationships for Standard Chartered's Chinese operations. 'We put a lot of effort into using the power of this network. There is a strong teamwork culture in the bank, with all the country operations sharing resources and information.'

This approach helps to increase efficiency and reduce duplication, but the bank also recognises the importance of supplementing this with data gathered on the ground. To this end, it assesses separately the risks associated with China, such as politics, regulation and trade relations. In assessing credit risk, Standard Chartered applies similar techniques to those it uses anywhere. This entails a bottom-up approach, which means that in each country it applies different criteria. 'We stay very close to our customers and watch the cash cycle carefully', says Mr Godwin. 'We don't just dish out working capital. In the case of SMEs (small and medium-sized enterprises), we like to grow with the company. This is both profitable and a good way to manage risk.' The local risk function in China will then report to a regional division, which, in turn, reports to the bank's wholesale risk function and finally to the executive board, which meets in London.

The bottom-up approach will become even more relevant as the Chinese consumer market opens up in 2007. Until now, foreign banks have only been allowed to lend to foreigners living in China or through joint ventures with local financial institutions. Standard Chartered applied at the end of 2006 to set up a locally incorporated subsidiary that will allow it to compete in the domestic loans, mortgages and credit card businesses. The risks are huge but, for banks with in-depth experience of emerging markets, so are the potential rewards.



Empowered and embedded

Enabling the risk management function to shift gears and contribute greater value to the business is no easy task. For anything to happen, senior management has to be fully engaged. What matters most, says Raj Singh, Chief Risk Officer of Allianz, is that an institution's directors are committed to proactive risk management and that its value to the group as a whole is recognised.

Yousef Valine, Head of Institutional Risk Management at America's Wachovia Corp, agrees. More important than nominal representation on the board, he says, is a recognition that effective risk management depends on building the right culture within an organisation. Ken Thompson, who was appointed Chief Executive Officer of Wachovia in 2000, has made it a personal crusade to raise the profile of risk management and governance throughout the group. For example, risk managers at Wachovia routinely contribute at the highest level to planning projects, making sure they are executed correctly and on time.

Survey respondents believe that seeing risk management as a more strategic function is the change in attitude most needed to release the function's potential to create value. The danger, however, is that declining regulatory pressures will lead to less intensive engagement from many senior managers in this area.

'Even when directors of financial institutions insist on risk managers having their say', says Shyam Venkat, a partner of PricewaterhouseCoopers US (New York office), 'too little attention is paid to embedding risk managers in the individual businesses.' This often makes it harder to get to grips with the intricacies of the business; it also slows down the speed with which risk officers can respond.

Respondents to our survey seem to agree. When asked how their organisation's attitude to risk and risk management should change for it to add greater value to the business, more than 60% of respondents pointed to the need to embed risk managers and their risk management processes into individual businesses (see box on National Australia Bank).

Few institutions have been as successful as Goldman Sachs at combining an overarching culture of risk management, directed from the top, with minute attention to detail at the level of the individual business. The firm, in common with its competitors, rarely provides detail publicly about its trading practices, let alone the risks it has managed to avoid. But it is apparent that the migration last year of all of the firm's main business on to SecDb, a pricing and risk management platform, has taken the firm to yet another level in managing its risk.

According to Risk magazine, SecDb was first used in the firm's currency and commodities business in the early 1990s. The system has since been developed to allow Goldman's sales force and traders to model, value and book a transaction on a single platform. Using the same system, they can then hedge the same positions.

'The system enables us to take virtually every position we have in the firm and revalue them thousands of times every night under all sorts of different extreme scenarios to work out what sorts of risk we have', said Robert Berry, Head of Market Risk for Goldman Sachs and winner of Risk magazine's Bank Risk Manager of the Year for 2006, in an interview with the magazine. Indeed, so successful is Goldman's integrated approach to such trades that the firm's large mortgage business decided to migrate to SecDb, even though there was little immediate benefit for its front office staff.

Empowered and embedded continued

Case study: Re-engineering National Australia Bank Group

When Michael Ullmer joined National Australia Bank Group (NAB) as Director of Finance and Risk in 2004, in the wake of a well-publicised debacle over foreign-exchange losses, he knew that half-measures were unlikely to succeed. The losses, he realised, were a symptom of a wider problem that could well be repeated unless NAB's approach to risk management as a whole was changed radically.

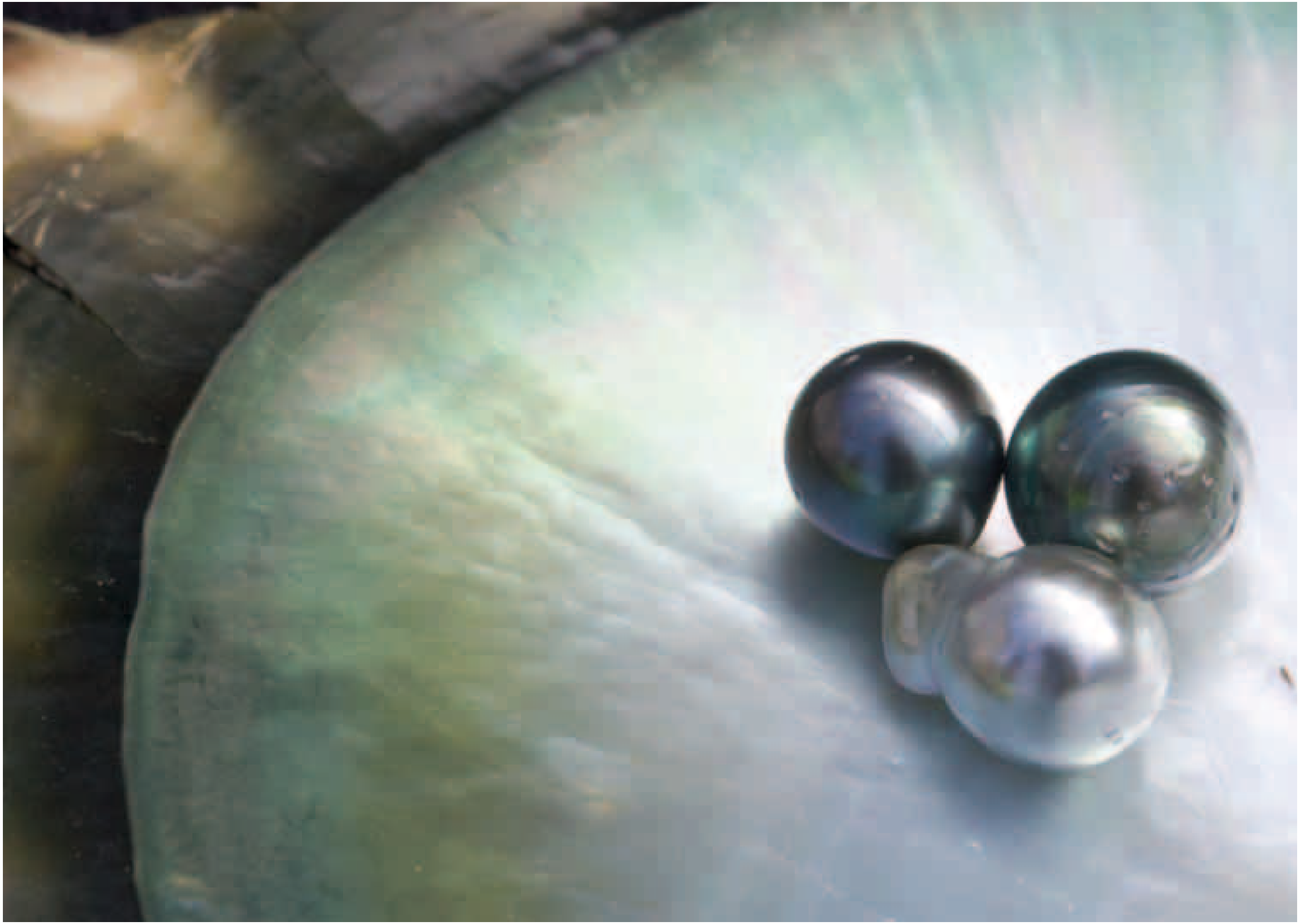
He set about rebuilding NAB's risk function so that it became, not an adjunct as before, but an integral part of the management. Instead of being imposed from the centre, risk managers were attached to the four businesses that form the group: Australia (which includes retail and business banking, wealth management, corporate banking, custody services and Asia); United Kingdom (which includes Clydesdale and Yorkshire Banks brands); New Zealand division (which runs Bank of New Zealand); and nabCapital (which is a global business providing debt financing, risk management and investment products for corporate, institutional and retail clients).

These changes were required in order not just to embed risk management into the day-to-day running of the Group; they were also needed if NAB was to meet the standards required under Basel II. The weighting of risks and the allocation of resources under the Group's system of economic capital, after all, were disciplines common to both risk management as well as general management. So why separate the two?

Mr Ullmer decided that, as well as being attached to each business, risk managers would retain their status as representatives of a group-wide discipline. He also made it clear that, in future, the managers of individual businesses would be accountable for the risks they ran. The third leg of defence he put in place was a strengthened internal audit.

To mirror the dual responsibilities of risk managers, the Group's system of reporting at a senior level also changed. The chief risk officer for each business within the Group became answerable, not just to the Bank's Group Chief Risk Officer (and through him to Mr Ullmer, who sits on the board), but also to the chief executive of the business in which he or she worked.

In addition, the Group devolved responsibility to each business. Once overall targets are agreed with the board, each business maps out in detail what it needs to do in order to meet them. This includes the risks it expects to run, the capital required to bear them, and the anticipated returns. 'There is no doubt now within each individual business that they are accountable for the risks they take', says Mr Ullmer.



A seat in the cockpit

As important as embedding risk managers within the business units and local territories is the need to have a coherent central approach to risk. Erste Bank splits its risk managers into two types: strategic and operational. The former are responsible for the quantitative tools required to support the business and for imposing standards across the group. Managers on the operational side sit with the individual businesses, making decisions on credit and the like.

For its part, RBS Group appoints a risk officer for each operating division of the Group. Although they are embedded in the business, each manager operates ‘under licence’ to the Group’s chief risk officer, says Richard Gossage, the bank’s former Group Chief Risk Officer. So senior risk officers may report to the head of the division in which they operate, but are functionally responsible to the Group’s chief risk officer.

This can be vital in helping to maintain a sense of cohesion on risks encountered by separate (and often competing) divisions of a multifaceted institution. At Deutsche Bank, for instance, risk officers are more than just devil’s advocates; they are ‘representatives of the group’s top-down perspective’, says Mr Evans. Indeed, there is much to be said, he says, for a function that is intimately involved in the day-to-day running of the business, but which identifies closely with the Group’s overall franchise.

The German bank, KfW Bankengruppe, divides the process for approving credit decisions above a certain threshold between the business unit and central risk management function. The first vote takes place at the level of the business unit, and the second and deciding vote takes place in central risk management. In about 60%-65% of cases, the business unit’s decision is approved centrally, says Dr Rolf Gebauer, First Vice President and head of the Risk Management unit. In another 30% of cases, the business unit’s decision is approved with certain conditions. A ‘no’ vote from risk management, however, poses a significant hurdle for the business unit to overcome at board level. ‘The great advantage is that there is no conflict of interest’, says Dr Gebauer. ‘The central risk management department is not driven by the market. We look at the business from a different angle; we are not involved at a personal level.’

Mr Valine of Wachovia likens his bank’s approach to that of a motor manufacturer. Part of the assembly has to be standardised, he says, so that the data can be tested and validated in a consistent manner. Yet it also needs to be flexible enough to meet the needs of different divisions. ‘So you have to build something that allows you to aggregate the data but which can also be customised at a certain level’, he says.

Sean Ringsted, Chief Actuary of the ACE Group, an international insurer, and chair of the company’s Risk Committee, believes that one of the key benefits of effective enterprise risk management is the ability to look at threats to an organisation holistically, be they from outside or from within. ‘It joins up the dots between the inevitable silos of exposure across the company. Once you aggregate the exposure across the balance sheet and other sources to threats such as catastrophes and credit defaults, you have a much more complete understanding of those threats to your organisation’, he says.

Although insurers as a whole are generally acknowledged to be behind banking in managing risks, a number of leading insurance companies have done much to demonstrate the link between proactive risk management and accurate pricing. As a result, the industry has become polarised

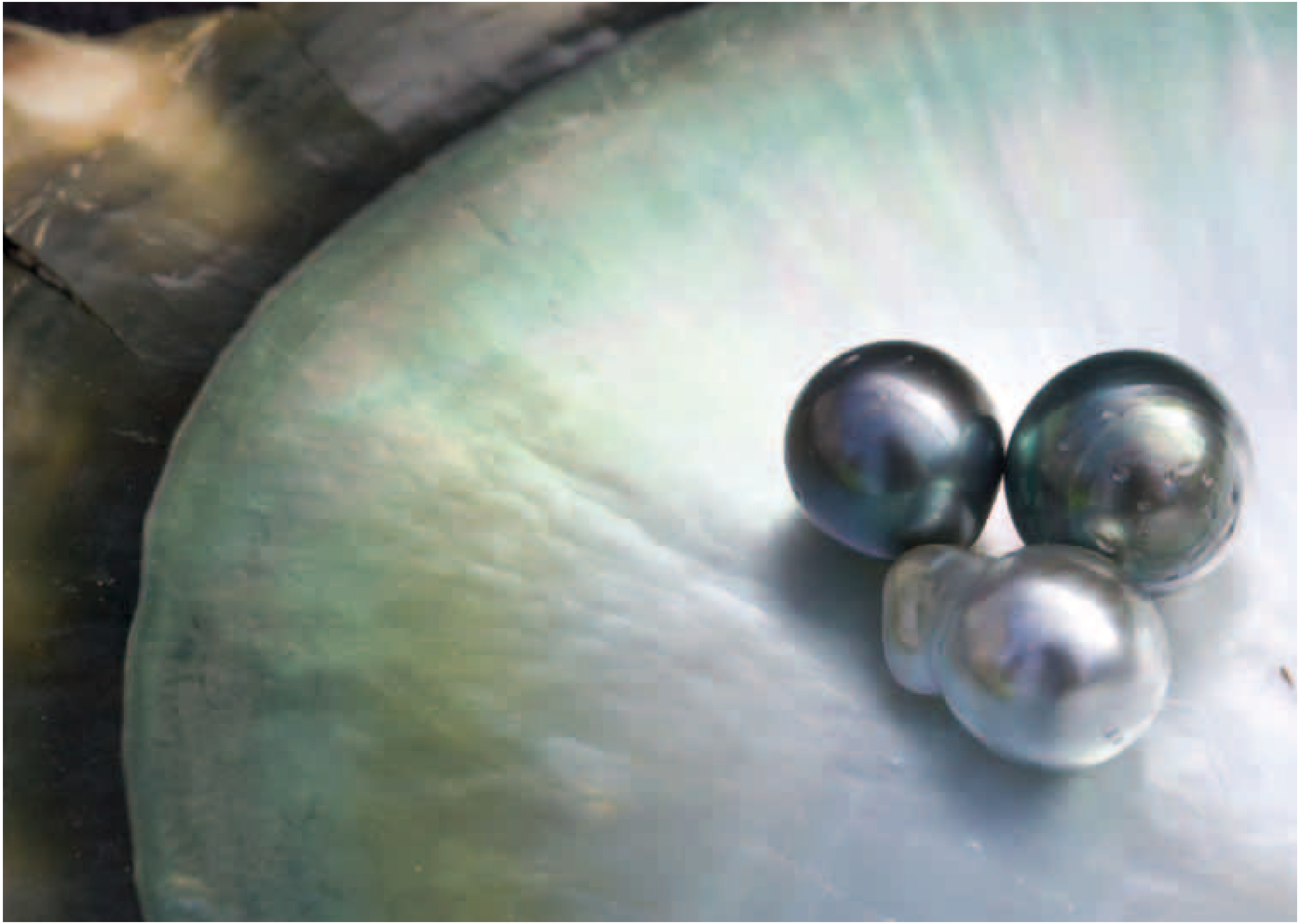
A seat in the cockpit continued

between those insurers that have a clear idea of the price of certain risks and those that lose money because they are too ready to follow the market or to underwrite in the hope of making a profit from investing the premiums received.

The priority, particularly for insurers in North America, says Paul Horgan, a partner of PricewaterhouseCoopers US (New York office), is integration. Too few firms have yet taken steps to integrate their approaches to governance, compliance and risk management', he says, 'with the result that there is inefficiency and duplication.' (Exactly how much may be revealed by a new benchmarking survey of enterprise risk management in insurance to be undertaken by PricewaterhouseCoopers later this year).

A second problem has been a lack of commitment on behalf of senior managers. However, this is beginning to change now that Standard & Poor's (S&P) and other rating agencies have begun to score insurers on their approach to risk management. In future, firms will lose out unless their risk management across the entire firm is robust.

'For too long, many insurers have had a silo mentality towards risk management', says Mr Horgan. 'In rectifying this, it is important that they look for ways to create value as well as seeking to reduce unnecessary duplication and costs.' According to S&P, there is still considerable room for improvement. In a survey of North American insurers last year, the agency found that only 23% of firms had strong or excellent risk management.



Coordination and culture

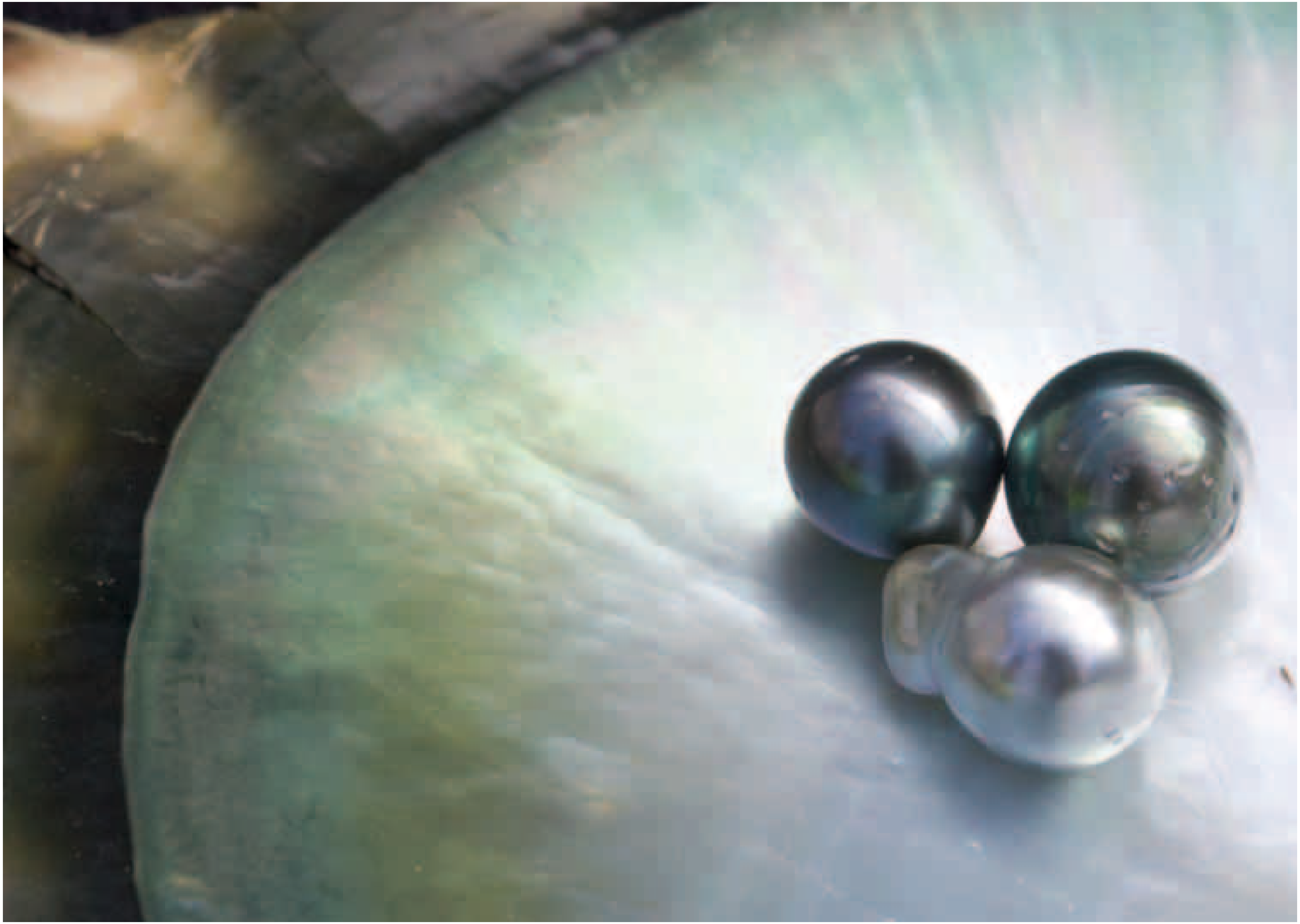
If effective risk management requires the function to have a foot in all camps, straddling business units and group, local territories and headquarters, then it is also imperative that these various groups are well coordinated. Once again, reality is somewhat different. Few survey respondents believe that the risk management function and the individual business units are highly integrated; indeed, many think that there are coordination problems within the function, as well as between central risk managers and local risk managers.

This is particularly pertinent to areas such as tax. As the volume of derivatives traded worldwide multiplies, so too do the risks of a lack of control, says Richard Collier, a partner of PricewaterhouseCoopers UK (London office). Increasingly, tax authorities are scrutinising deals to see who is the ultimate beneficiary of a particular transaction, irrespective of the ownership of the financial instrument in question. Liability for, say, withholding tax can be hard to refute if a firm has failed to keep proper records because of a lack of coordination between risk managers and its various departments, including taxation and operations.

Clear processes provide one solution to this problem of coordination. But more important still – and the foundation of successful risk management in general – is instilling a culture of risk management and governance that crosses functional and geographical boundaries. Ensuring that firms and their employees demonstrate the effectiveness of internal controls under rules laid down by Sarbanes-Oxley and other such legislation, only goes so far, says Ron Collard, a partner of PricewaterhouseCoopers UK (London office) and a specialist in human resources. Institutions must focus on leadership and the need to reinforce accountability at every level of the organisation.

In the wake of the devastation caused by the hurricanes in America during 2005, for example, commentators urged insurers to reconsider their risk management practices. Many insurers have since revised their disaster scenarios, some of them radically so. Yet, says Mr Ringsted of ACE Group, the role of risk management can be overplayed. He believes results are as much about prudent underwriting and good governance as they are about modelling risk scenarios and enterprise risk management. 'I don't think enterprise risk management per se is a cure for the insurance cycle. Of course, there are links such as inflation and interest rates that we have to consider and take into account but insurers assume risk for a living and there is no substitute for sound executive management and discipline', he says.

As concerns over corporate responsibility grow, institutions will need to pay even greater attention to standards of governance. 'People need to have a clear understanding of the culture and governance required of a firm', says Mr Collard. 'It is no good traders saying, 'But we didn't do anything wrong!' if, in the eyes of the public, an organisation is deemed to have breached unwritten codes or acted with impropriety.' If anything can persuade risk managers to look beyond relationships with the regulator as a yardstick of success, then it must surely be a regime in which complying with the rules is no defence against reputational damage. □



Appendix: Survey results

The Economist Intelligence Unit and PricewaterhouseCoopers conducted a special online survey of senior executives in financial institutions on the subject of risk management. Executives from over 420 institutions in Asia, Europe and the Americas participated in the survey, which was conducted during December 2006 and January 2007.

Our thanks are due to all those who participated for sharing their insights with us.

Please note that totals do not always add up to 100 because of rounding, or because respondents could choose more than one answer.

1. What, in your judgement, are the most important objectives of the risk management function? Select no more than three objectives.

Communicating key risks to the executive team	41%
Identifying new and emerging risks	43%
Communicating key risks to investors	5%
Ensuring regulatory compliance	14%
Classifying types of risks	4%
Maximising loss avoidance	13%
Enabling line-of-business managers to make better business decisions	23%
Assisting management on a day-to-day basis with business/strategic decision-making	21%
Measuring and monitoring risk	42%
Setting the organisation's risk appetite	14%
Monitoring the organisation's risk appetite	10%
Enabling more efficient capital allocation	21%
Instilling a culture of risk awareness throughout the organisation	39%
Other, please specify	2%

Appendix: Survey results continued

2. **How effectively do you think your organisation's risk management function performs the following tasks? Rate each on a scale of 1 to 5, where 1 = Very successfully and 5 = Not at all successfully, or indicate if the task is not within the scope of your risk management function.**

	1	2	3	4	5	Not within scope
Communicating key risks to the senior executive team	23%	42%	21%	10%	4%	0%
Identifying new and emerging risks	7%	37%	37%	14%	4%	1%
Communicating key risks to investors	6%	22%	36%	13%	4%	18%
Ensuring regulatory compliance	25%	39%	19%	7%	3%	6%
Classifying types of risk	15%	37%	32%	12%	3%	1%
Maximising loss avoidance	7%	37%	34%	15%	2%	5%
Enabling line-of-business managers to make better business decisions	7%	31%	37%	18%	5%	2%
Assisting management on a day-to-day basis with business/strategic decision-making	9%	30%	33%	20%	5%	2%
Measuring and monitoring risk	19%	37%	28%	12%	3%	0%
Setting the organisation's risk appetite	9%	25%	34%	20%	4%	9%
Monitoring the organisation's risk appetite	10%	31%	33%	17%	5%	4%
Enabling more efficient capital allocation	8%	26%	32%	18%	7%	10%
Instilling a culture of risk awareness throughout the organisation	12%	33%	32%	18%	5%	1%

Appendix: Survey results continued

3. On average, what change in levels of investment in risk management-related resources (i.e. people, technology and data) has your institution made annually over the past three years?

Decrease in investment	1%
No change in investment	11%
0-5% increase	10%
5-10% increase	16%
10-15% increase	18%
15-25% increase	14%
More than 25% increase	23%
Don’t know	6%

4. Does the risk management function at your organisation add more value to the business now than it did three years ago?

Substantially more value	41%
Slightly more value	39%
No more value	13%
Slightly less value	0%
Substantially less value	1%
Don’t know	6%

5. In what ways, if any, does effective risk management confer competitive advantage on your organisation?
Select all that apply.

We have a better reputation among customers	47%
We have freed up more capital for investment in our business	32%
Our selection of customers has improved	30%
We are better at attracting and retaining talent	18%
We have better and timelier data on our internal performance	45%
We have better and timelier data on our markets	27%
We have a better reputation with analysts and rating agencies	42%
Our pricing is more competitive	21%
We have reduced the cost of risk management	19%
We have a better reputation with shareholders	32%
We have a better reputation with employees	21%
We have a better relationship with regulators	55%
We are able to improve returns relative to the risks taken	42%
We have better relationships within the communities in which we operate	14%
None of the above	3%
Other, please specify	1%

Appendix: Survey results continued

6. What have been the major drivers of change in your organisation's risk management priorities over the past three years?
Select the three most important drivers of change.

Regulatory pressures	67%
Increased levels of geopolitical risk	7%
Threat of terrorist activity	4%
Macroeconomic volatility	12%
Financial market volatility	24%
Changes in reporting standards	16%
Levels of customer satisfaction and/or churn	4%
Increased levels of IT security risk	12%
Losses at our own institution	12%
Increased focus on risk management on the part of senior management and the board	44%
Governance scandals affecting other financial institutions or major corporates	11%
Increased offshoring activities leading to greater emphasis on business continuity, etc	2%
Demands for corporate transparency and accountability	17%
Increased stakeholder focus on risk management practices	12%
Aim of increasing value of risk management to the business	18%
Increased focus on risks pertaining to people and behaviour	5%
Focus on cost reduction and efficiency	10%
Securing competitive advantage over competitors	12%
Focus on social responsibility programmes	3%
Other, please specify	2%

7. What do you think will be the major drivers of change in your organisation's risk management priorities over the next three years?
Select the three most important drivers of change.

Regulatory pressures	55%
Increased levels of geopolitical risk	7%
Threat of terrorist activity	2%
Macroeconomic volatility	15%
Financial market volatility	28%
Changes in reporting standards	12%
Levels of customer satisfaction and/or churn	8%
Increased levels of IT security risk	11%
Losses at our own institution	6%
Increased focus on risk management on the part of senior management and the board	31%
Governance scandals affecting other financial institutions or major corporates	6%
Increased offshoring activities leading to greater emphasis on business continuity, etc	5%
Demands for corporate transparency and accountability	20%
Increased stakeholder focus on risk management practices	16%
Aim of increasing value of risk management to the business	27%
Increased focus on risks pertaining to people and behaviour	8%
Focus on cost reduction and efficiency	14%
Securing competitive advantage over competitors	16%
Focus on social responsibility programmes	2%
Other, please specify	3%

Appendix: Survey results continued

8. **Which of the following types of risk are the most threatening to your organisation's earnings? Rate on a scale of 1 to 5, where 1 = Very threatening and 5 = Not at all threatening.**

	1	2	3	4	5	Don't know
Credit risk	28%	31%	19%	14%	8%	0%
Market risk	23%	31%	27%	13%	6%	0%
Operational risk	18%	35%	32%	13%	2%	0%
Regulatory risk	15%	28%	32%	19%	6%	0%
Business/strategic risk	16%	35%	32%	14%	3%	0%
Reputational risk	24%	30%	27%	13%	6%	1%
Interest rate risk/ALM	11%	22%	30%	24%	11%	2%
Liquidity risk	8%	18%	29%	29%	14%	1%
Customer-related risk (selection, acceptance)	6%	28%	32%	22%	10%	2%
Tax risk	2%	9%	25%	35%	25%	3%
Legal risk	5%	17%	33%	31%	13%	1%
Business continuity risk	6%	17%	34%	28%	13%	1%
Sovereign/political risk	6%	13%	22%	27%	29%	3%
Third-party risk (outsourcing service providers, suppliers, etc)	4%	21%	31%	29%	13%	2%
HR/people risk (talent recruitment and retention, etc)	10%	32%	33%	18%	6%	1%
Environmental risk	4%	9%	21%	28%	33%	5%
IT/technology risk	11%	34%	34%	16%	6%	0%

Appendix: Survey results continued

9. How effectively do you think your organisation manages the following types of risk?
Rate on a scale of 1 to 5, where 1 = Very effectively and 5 = Not at all effectively, or indicate if the risk is not managed at all.

	1	2	3	4	5	Not managed
Credit risk	26%	43%	19%	5%	3%	3%
Market risk	21%	46%	20%	7%	2%	3%
Operational risk	9%	35%	41%	13%	2%	0%
Regulatory risk	16%	39%	32%	9%	2%	2%
Business/strategic risk	9%	31%	41%	14%	3%	2%
Reputational risk	16%	34%	35%	13%	2%	1%
Interest rate risk/ALM	18%	36%	28%	8%	4%	6%
Liquidity risk	24%	36%	26%	8%	2%	3%
Customer-related risk (selection, acceptance)	9%	32%	41%	12%	2%	3%
Tax risk	15%	29%	33%	11%	4%	8%
Legal risk	12%	41%	31%	11%	2%	2%
Business continuity risk	10%	35%	35%	15%	3%	1%
Sovereign/political risk	11%	23%	30%	15%	6%	16%
Third-party risk (outsourcing service providers, suppliers, etc)	4%	25%	44%	18%	3%	5%
HR/people risk (talent recruitment and retention, etc)	4%	19%	41%	26%	7%	3%
Environmental risk	7%	20%	32%	17%	7%	17%
IT/technology risk	5%	27%	41%	21%	3%	2%

Appendix: Survey results continued

10. How would your organisation's attitude to risk and risk management need to change in order for the function to add greater value to the business, in your view? Select all that apply.

We would need to change the metrics by which risk managers are judged	27%
We would need to change the metrics by which business units are judged	46%
We would need to define our risk appetite more clearly	54%
We would need to see risk management as a more strategic function	66%
We would need to be less focused on compliance	22%
We would need to embed risk management processes and people more deeply into the lines of business	61%
We would need to be less focused on downside risks and more on upside risks/opportunities	30%
We would need more effective cross-functional coordination	47%

11. In which of the following business processes does your organisation include a structured assessment of risk?

Strategy development	46%
New product development/approval	67%
Entering new geographical markets	43%
Budgeting and financial reporting	40%
Allocation of capital to lines of business	48%
Merger and acquisition activity	32%
Forming alliances and partnerships	24%
Customer selection and acceptance	42%
Setting prices	37%
Recruitment and retention policies	17%
Setting compensation policies	14%
Process and performance improvement (i.e. offshoring, outsourcing)	28%
Data management and governance	40%
Compliance	56%
Assessment of business unit performance	28%
Pension scheme funding	8%
None of the above	3%
Other, please specify	2%

Appendix: Survey results continued

12. How influential is your organisation's chief risk officer (or equivalent) in the following activities and decisions?

	Very influential	Somewhat influential	Not influential	Not applicable
Strategy development	24%	51%	19%	6%
New product development/approval	30%	45%	18%	7%
Entering new geographical markets	23%	36%	24%	16%
Budgeting and financial reporting	22%	42%	28%	9%
Allocation of capital to lines of business	28%	38%	23%	11%
Merger and acquisition activity	16%	38%	22%	24%
Forming alliances and partnerships	14%	41%	29%	16%
Customer selection and acceptance	18%	35%	33%	14%
Setting prices	13%	37%	35%	15%
Recruitment and retention policies	8%	27%	50%	15%
Setting compensation policies	9%	24%	52%	16%
Process and performance improvement (i.e. offshoring, outsourcing)	12%	42%	32%	14%
Data management and governance	15%	52%	25%	8%
Compliance	38%	42%	13%	7%
Assessment of business unit performance	19%	41%	31%	10%
Pension scheme funding	5%	17%	37%	41%

Appendix: Survey results continued

13. **Which of the following types of risk-related data are routinely circulated within your organisation? Select all that apply.**

	By country	By business unit	By product	By customer segment
Risk-based capital measure	21%	44%	21%	14%
Data on reputation for risk management among key stakeholders (i.e. customer satisfaction surveys/comments from ratings agencies/etc)	22%	45%	16%	17%
Earnings volatility against a predefined benchmark	16%	52%	22%	10%
Client complaints/litigation	16%	45%	18%	21%
Losses against a pre-defined benchmark	16%	49%	25%	11%
Credit quality distribution	19%	39%	21%	21%
Data on contribution of risk management to increased shareholder value	18%	53%	17%	11%

14. **How useful are the following types of risk-related data as tools for managing the business? Rate on a scale of 1 to 5, where 1 = Extremely useful and 5 = Not at all useful, or indicate if your organisation does not use these measures.**

	1	2	3	4	5	Not used
Risk-based capital measure	30%	31%	14%	5%	2%	18%
Data on reputation for risk management among key stakeholders (i.e. customer satisfaction surveys/comments from ratings agencies/etc)	10%	28%	27%	9%	2%	23%
Earnings volatility against a predefined benchmark	16%	33%	27%	6%	1%	17%
Client complaints/litigation	11%	27%	29%	14%	3%	16%
Losses against a predefined benchmark	17%	33%	25%	8%	2%	14%
Credit quality distribution	27%	37%	17%	7%	2%	10%
Data on contribution of risk management to increased shareholder value	10%	22%	22%	9%	5%	33%

Appendix: Survey results continued

15. If your organisation assesses its performance on a measure of risk-based capital, please rate how effective it is at meeting the following objectives.

	Very effective	Effective	Neither effective nor ineffective	Ineffective	Very ineffective	Don't know
Greater profitability for individual lines of business	10%	43%	26%	5%	1%	16%
More efficient allocation of capital to lines of business	16%	46%	17%	6%	1%	14%
More appropriate pricing levels	9%	35%	29%	9%	2%	16%
More appropriate remuneration packages for senior executives	4%	26%	30%	13%	3%	24%
Satisfying regulatory requirements (e.g. capital adequacy)	22%	44%	18%	3%	1%	12%
Greater understanding of risk on part of business units	18%	48%	17%	4%	2%	12%
Clearer reporting and disclosure to shareholders	12%	41%	25%	5%	1%	16%

Appendix: Survey results continued

16. Please indicate who has strategic responsibility (e.g. setting policy and governance structures) for the following specific types of risk at your organisation.
Note: The central risk management function includes business risk management teams if they report to central risk management. Business unit heads includes business risk management teams if they report to business unit heads. The finance function includes business risk management teams if they report to finance.

	Central risk management function	Business unit heads	Finance function	Other function	Don't know
Credit risk	64%	18%	12%	4%	2%
Market risk	54%	30%	11%	4%	2%
Operational risk	54%	34%	4%	6%	2%
Regulatory risk	50%	21%	8%	18%	3%
Business/strategic risk	34%	45%	4%	13%	4%
Reputational risk	39%	31%	3%	20%	7%
Interest rate risk/ALM	36%	17%	33%	8%	5%
Liquidity risk	35%	19%	35%	7%	5%
Governance risk	42%	19%	6%	24%	8%
Customer-related risk (selection, acceptance, etc)	21%	59%	3%	11%	7%
Tax risk	16%	12%	51%	14%	7%
Legal risk	29%	17%	6%	44%	4%
Business continuity risk	41%	26%	4%	23%	6%
Sovereign/political risk	43%	17%	2%	18%	20%
Third-party risk (outsourcing service providers, suppliers, etc)	25%	34%	5%	25%	12%
HR/people risk (recruitment and retention of talent, etc)	14%	33%	2%	43%	9%
Environmental risk	24%	17%	2%	28%	28%
IT/technology risk	24%	26%	3%	42%	5%

Appendix: Survey results continued

17. Please indicate who has operational responsibility (i.e. execution of policy) for the following specific types of risk at your organisation. Note: The central risk management function includes business risk management teams if they report to central risk management. Business unit heads includes business risk management teams if they report to business unit heads. The finance function includes business risk management teams if they report to finance.

	Central risk management function	Business unit heads	Finance function	Other function	Don't know
Credit risk	39%	43%	12%	3%	3%
Market risk	34%	47%	12%	5%	2%
Operational risk	29%	60%	4%	5%	3%
Regulatory risk	33%	40%	7%	16%	3%
Business/strategic risk	22%	60%	2%	11%	5%
Reputational risk	25%	50%	1%	17%	7%
Interest rate risk/ALM	23%	28%	35%	9%	5%
Liquidity risk	23%	28%	35%	8%	5%
Governance risk	32%	32%	6%	23%	7%
Customer-related risk (selection, acceptance, etc)	14%	67%	2%	10%	7%
Tax risk	12%	21%	46%	15%	7%
Legal risk	21%	30%	8%	37%	5%
Business continuity risk	24%	45%	4%	21%	7%
Sovereign/political risk	35%	28%	3%	15%	18%
Third-party risk (outsourcing service providers, suppliers, etc)	14%	44%	5%	25%	12%
HR/people risk (recruitment and retention of talent, etc)	9%	41%	2%	39%	8%
Environmental risk	18%	26%	3%	27%	27%
IT/technology risk	16%	33%	3%	42%	6%

Appendix: Survey results continued

18. How effectively integrated are the following functions and departments in your organisation? Rate on a scale of 1 to 5, where 1 = Highly integrated and 5 = Poorly integrated.

	1	2	3	4	5	Don't know
Risk management function and compliance function	29%	28%	21%	9%	9%	4%
Risk management function and finance function	17%	30%	31%	12%	8%	2%
Risk management function and the HR function	5%	12%	26%	30%	23%	5%
Risk management function and the senior executive team	23%	40%	20%	9%	5%	3%
Risk management function and individual business units	13%	40%	30%	11%	4%	2%
Central risk management function and regional/country risk management functions	20%	27%	22%	9%	6%	16%
Central risk management function and business unit risk management functions	22%	32%	25%	9%	6%	7%

Appendix: Survey results continued

19. Please indicate whether you agree or disagree with the following statements about risk management at your organisation.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Risk appetite is clearly defined and drives decision-making cross-functionally	16%	41%	23%	16%	4%
Risk and control assessments across the organisation share common risk definitions, frameworks, methodologies and risk rating scales	21%	42%	20%	14%	3%
Monitoring and testing activities are formally defined, coordinated and leveraged cross-functionally	14%	41%	28%	15%	3%
Risk management processes and technology are effectively and efficiently integrated across the enterprise	9%	39%	28%	21%	4%
Our organisation has an integrated governance, risk and compliance programme	15%	38%	25%	19%	4%
An awareness of risk is pervasive in our organisation	19%	43%	26%	10%	3%
The recent focus on regulations such as Basel II and Sarbanes-Oxley has made our organisation too risk-averse	6%	19%	32%	36%	7%
Recent regulations on risk management are more of a compliance burden than a contributor to business value	15%	34%	26%	22%	3%
Senior management recognise that the most important elements of risk management are the attitudes, competencies and behaviour of people in the organisation	22%	46%	18%	11%	3%
There is an appropriate balance between risk and opportunity in our organisation's business decisions	10%	46%	26%	16%	3%
We spend too little money on risk management	16%	24%	31%	22%	7%

Appendix: Survey results continued

In which region are you personally based?

Americas	33%
Asia (excluding Australia & New Zealand)	28%
Australia/New Zealand	5%
Europe	31%
Middle East & Africa	3%

What is your title?

Board member	3%
CEO/President/Managing Director	6%
CFO/Treasurer/Comptroller	6%
CRO/Chief Risk Officer	14%
CIO/Technology Director	1%
Other C-level Executive	5%
SVP/VP/Director	32%
Head of Business Unit	5%
Head of Department	8%
Manager	17%
Other	3%

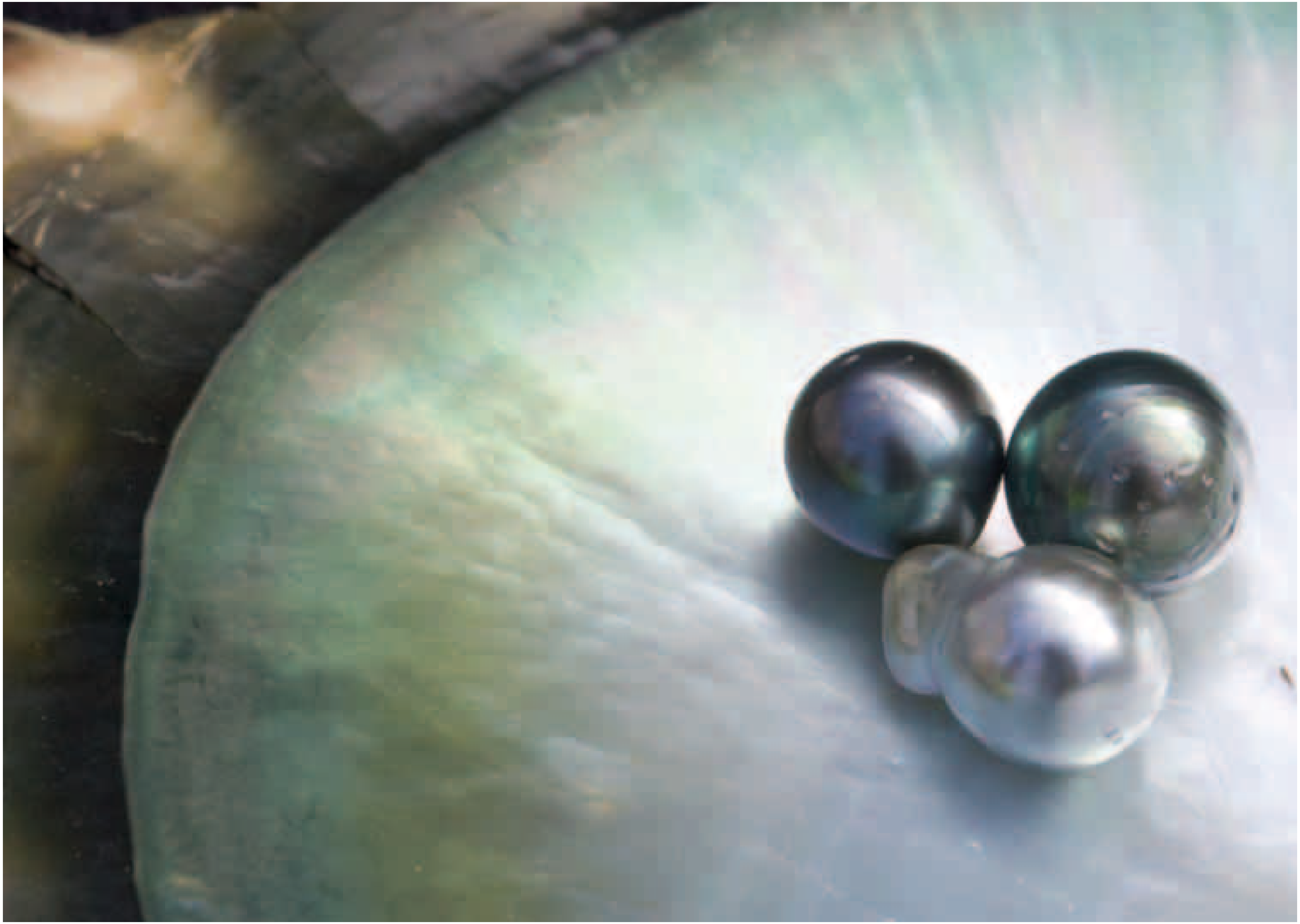
What are your main functional roles? Please choose no more than three functions.

Customer service	5%
Finance	20%
General management	20%
Human resources	3%
Information and research	10%
IT	6%
Legal	3%
Marketing and sales	5%
Operations and production	5%
Procurement	1%
Risk	70%
R&D	4%
Supply-chain management	0%
Strategy and business development	17%
Other	6%

Appendix: Survey results continued

In what area of financial services do you personally work?

Asset management/Custodian	9%
Bancassurance	1%
Broker-dealer	3%
Capital markets	8%
Central bank/Regulator	5%
Corporate banking	14%
Credit card issuer/services	2%
Financial services consulting	0%
Hedge fund	6%
Investment banking	7%
Life insurance	3%
Non-life insurance	5%
Wealth management	4%
Private equity/Venture capital	2%
Trading	4%
Real estate/Leasing	1%
Reinsurance	1%
Retail banking	17%
Stock exchange/Trading system	1%
Other, please specify	10%



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