



Enterprise Risk Management Symposium

Embedding ERM in the DNA of an insurer

Charlie Shamieh; Group Chief Risk Officer

Munich Re Group



Integrated Risk management at Munich Re: Integral part of CEO's agenda



Source: Munich Re CEO's Inaugural Presentation to Analysts, 16 April 2004



Integrated Risk Management within Munich Re: Departmental Structure Closely Follows Risk Management Process



- Structure aligned according to risk management process
- 4 departments with a total of around 40 staff
- Business liaison roles designed to “embed” all risk management tools and processes in our daily business
- IRM directly reports to the Group CRO, i.e. is independent from the risk taking process



Integrated risk management in the Munich Re Group: Supporting Group strategic objectives



Asset
derisking

+



Insurance
diversification

+

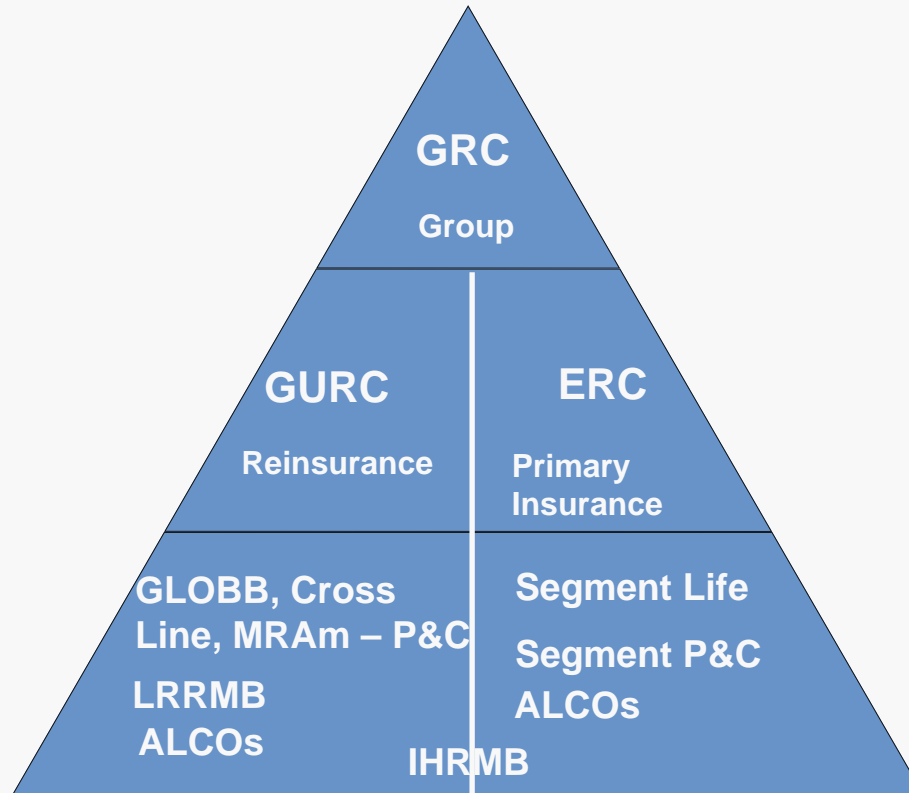


Portfolio
optimisation



Sustainable profitability

Risk Committee Pyramid Structure – Turning Risk Strategy into Action





Example :Comprehensive mandate of the Global Underwriting & Risk Committee (GURC) delegated by Reinsurance Committee

Mandate of GURC

- All risks of the Reinsurance Group: insurance, market, credit, and operational
- Risk management methods for risk identification, measurement, and monitoring
- Underwriting methods, exception handling, and reviews
- Large loss analysis (risks & opportunities), communication and “Post Mortems”
- Reserve methodology
- Risk mitigation for limit violations (including assets) and all external risk transfer
- Steering of Global Line of Business Boards and other sub-committees

Processes

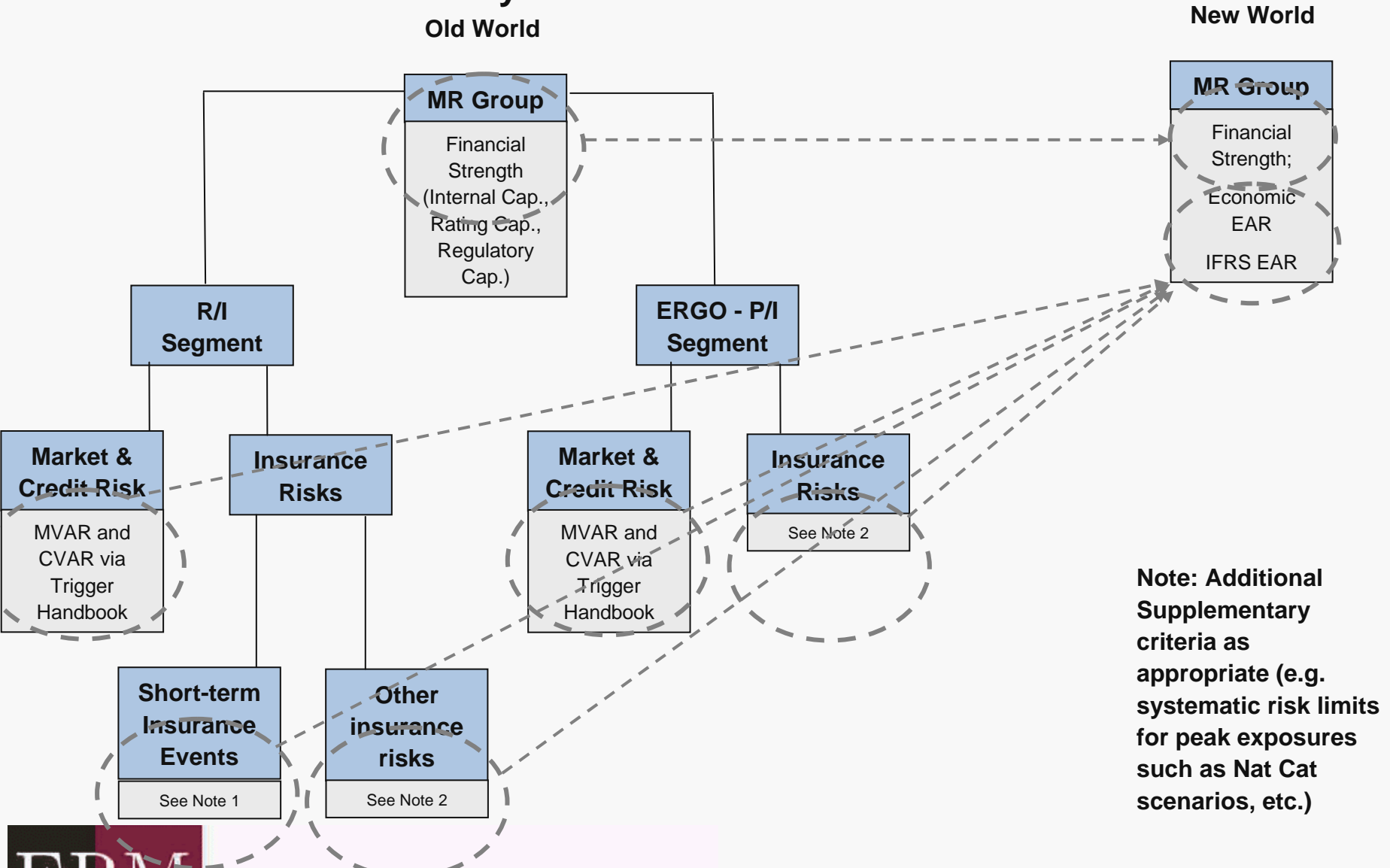
- Membership: three Board Members plus Board Member affected by decision and CRO, RI-CFO, RI-CIO, Head of Corporate Underwriting, Head of Life Underwriting
- Secretary: IRM
- Regular meeting frequency: monthly
- Ad-hoc meeting: as needed, target three day decision time
- Quarterly report to Reinsurance Committee
- Meeting minutes distributed to all members of MRG Board



Strategic Risk Management Framework (SRMF) Translates Risk Appetite into Risk Tolerance

- Has two aspects
 - Strategic Risk Criteria (SRC) – risk measures which we deem to be important steering tools
 - Strategic Risk Tolerances (SRT)
 - A SRT for each individual SRC
 - SRT regularly reviewed – i.e. not once-and-for-all
- SRC and SRT cascaded down to business segments
- Business segments operate within their tolerances
- When risk constraints arise – dealt with in a way that considers shareholder returns i.e. maximise expected profits subject to the risk constraints
- Reliant on our risk model, but recognising limitations of the modelling e.g. where we have less confidence in model, a lower level of SRT is to be applied

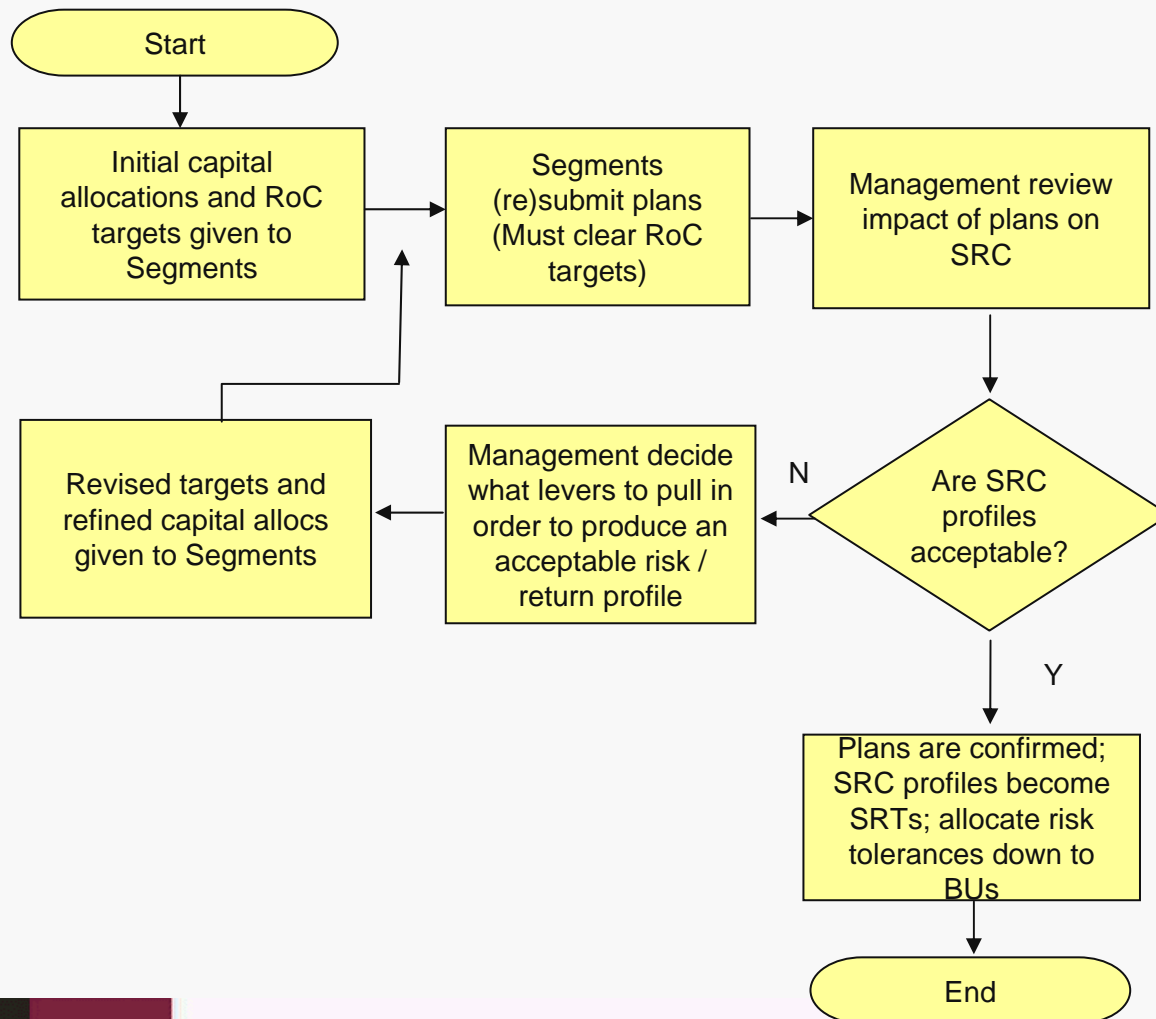
Whole Portfolio View is a key feature of SRMF



Note 1: Accumulation control operates on e.g. Nat Cat and Terrorism risk. These are carried over to the SRMF as supplementary criteria.

Note 2: Generally relates to diversifiable risks – taken into account in overall risk appetite

Integration of SRC and SRT into Business Planning Process



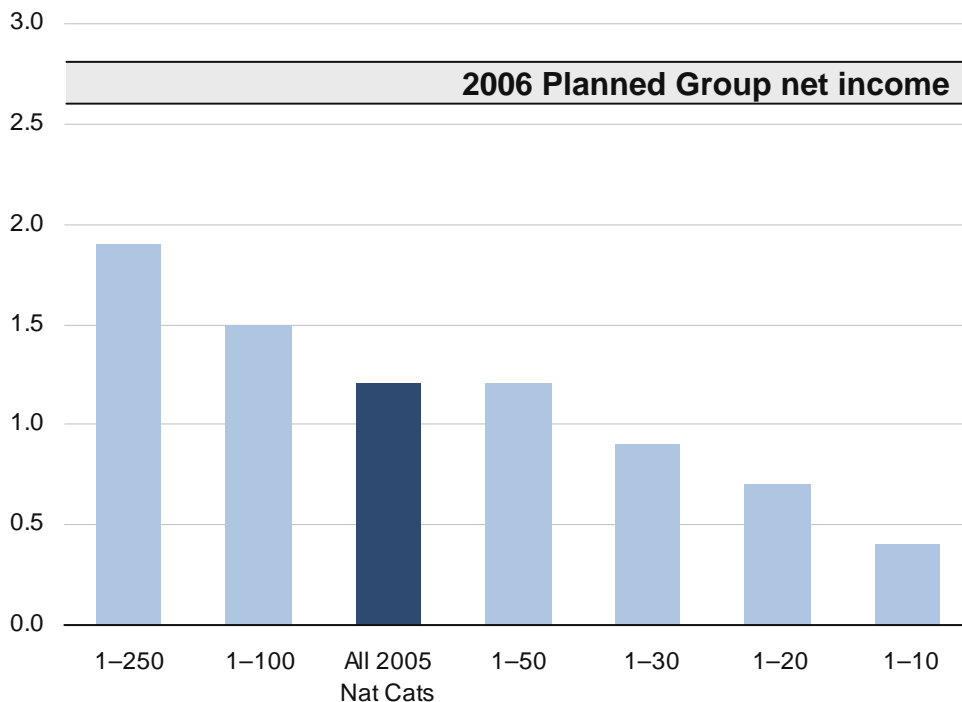
- Top-down allocation of risk tolerance which reflects Group risk appetite
- Segments to ensure that they remain within approved plans and risk tolerances.
- Need to repeat the process if there is a significant change in the internal or external environment.



Illustration : 2006 Risk-management strategy for peak (Nat Cat) exposures

Return period

After tax income at risk¹ in €bn



Our strategy

- Is to price and write inward business on a gross basis (assumes zero external capacity)
- Is based on a portfolio concept
- Aims to optimise risk-return profile

Lines of defence

- Risk-adequate pricing
- Strict budgeting and accumulation control
- Retrocession: Conventional and secured
- Capital markets

Net exposures do not represent a threat to excellent economic capital position



SRMF - Firmly embedded in management applications

Management applications	
Capital allocation	✓
A/L management	✓
Risk steering	✓
Pricing	✓
Performance measurement	✓
Risk mitigation (e.g. retrocession)	✓
Regulatory purposes	✓
Underwriting	✓
Management compensation	✓

ERM

Actively steering the path to sustainable profitability

Realizing the Value of ERM

ERM Symposium – Common Issues -- Concurrent Session 4

Stephen Lowe, Tillinghast
Charlie Shamieh, Munich Re
Victor Masch, AIG

30 March 2007

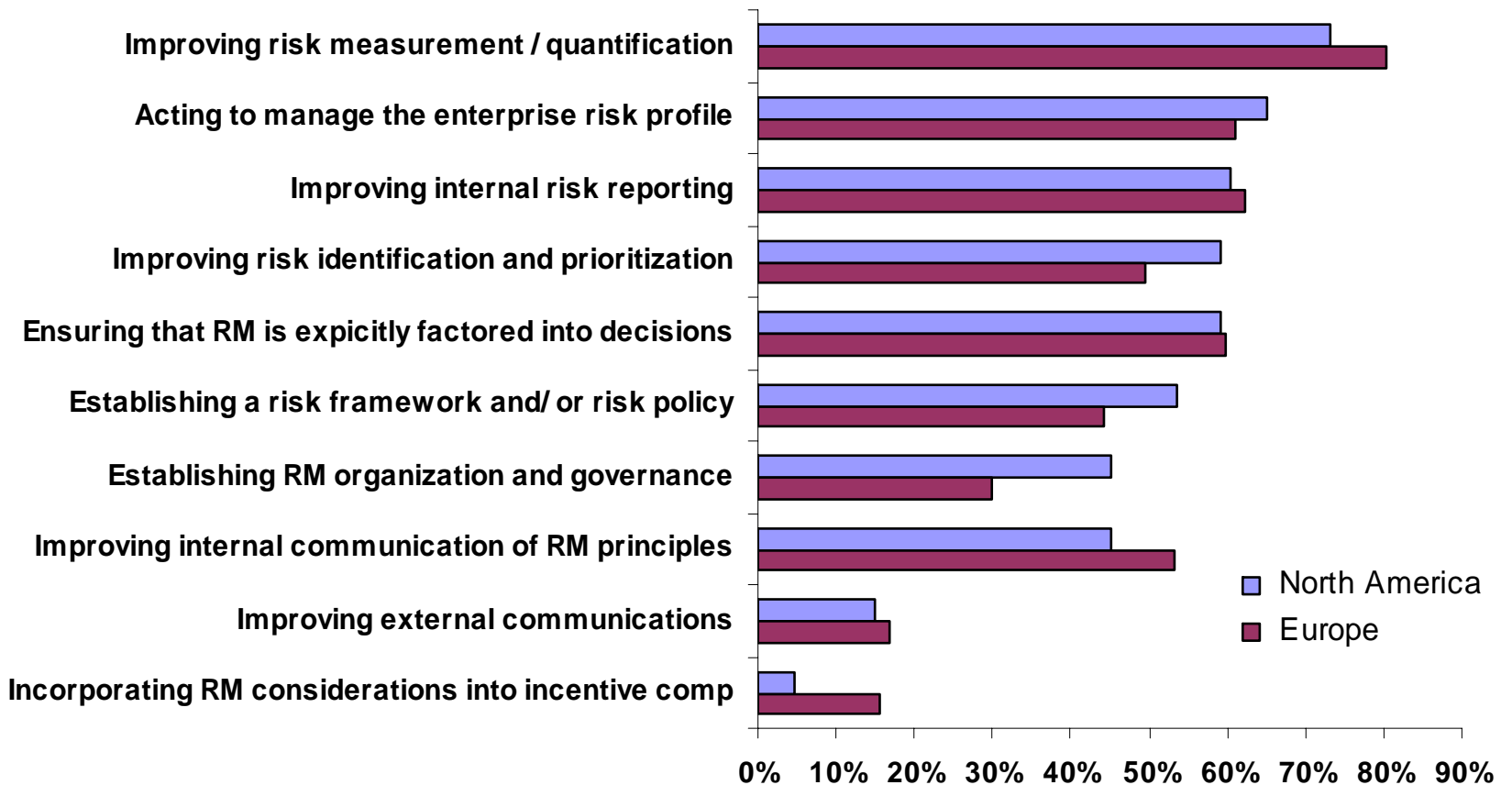
Tillinghast's 2006 fourth biennial ERM survey

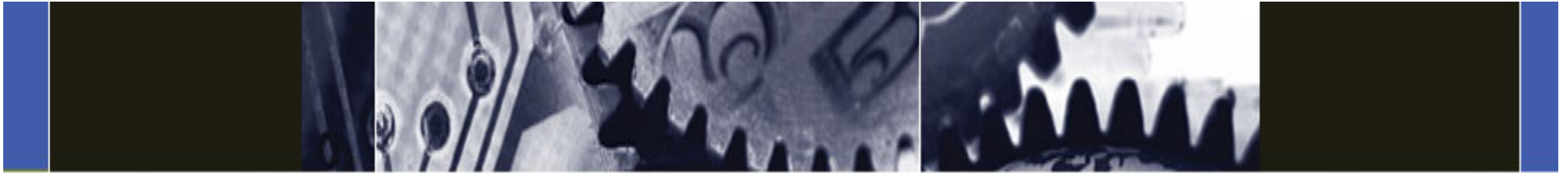
- Areas of inquiry
 - Risk management objectives
 - Roles and responsibilities
 - Risk measurement / Economic capital
 - Risk reporting practices
 - Risk-based decision making
 - Solvency II (for European insurers)

- Over 200 respondents globally
- Broad mix of respondents
 - Public, private, mutual
 - Life, P/C, Multi-line
 - Many of the largest insurers; some regional and specialty
 - North America, Bermuda, Europe, UK, Asia

While risk management efforts continue to focus on improving processes, efforts also focus on business use

Q: Where are your risk management efforts now being focused? (Select all that apply.)



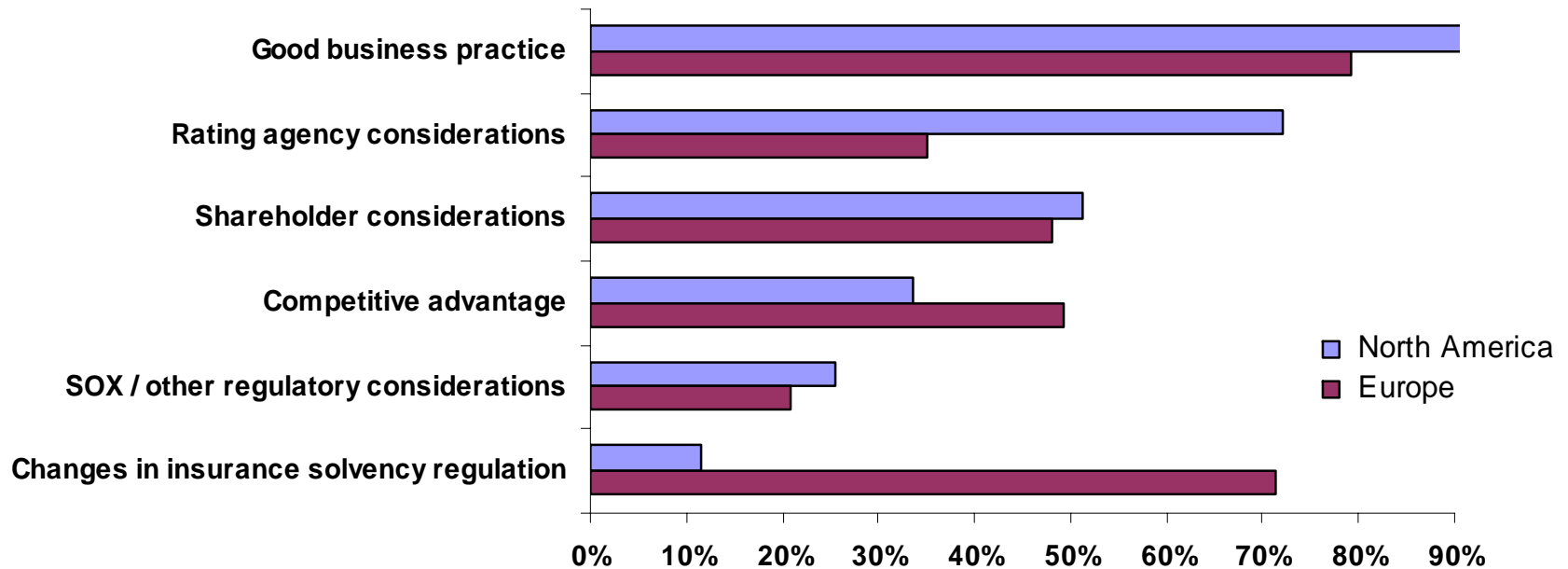


Proactive ERM Function Is Required

- Risk Monitoring
 - Financial Engineering
 - Actuarial Knowledge
 - Governance
 - Data
 - Systems
- All have to be developed over time

Naturally, 'good business practice' is a principal driver of current risk management efforts

Q: What are the principal drivers for your current risk management efforts? (Select all that apply.)

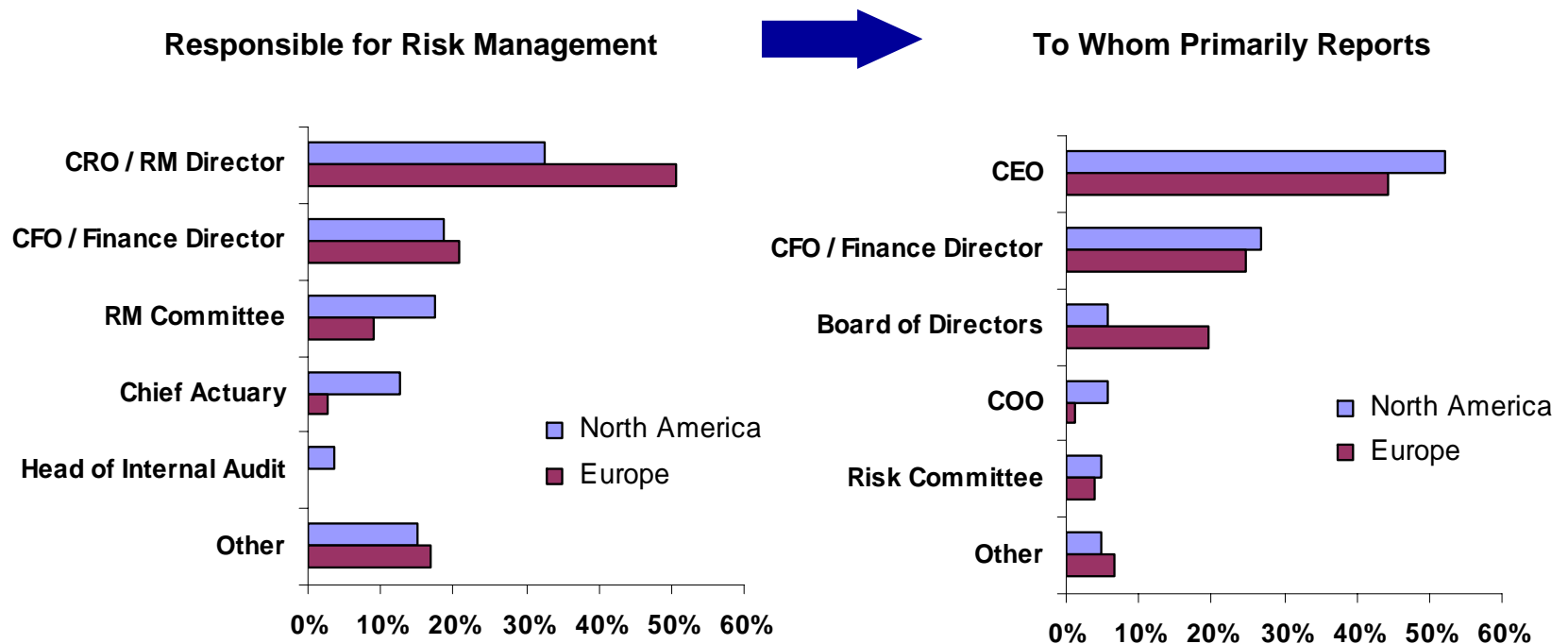


- While North American insurers are focused on rating agency capital requirements, Europeans are focused on Solvency II requirements

The CRO or Risk Management Director is the primary person responsible for risk management efforts within insurers

Q: Who is responsible for risk management in your organization? (Select one response.)

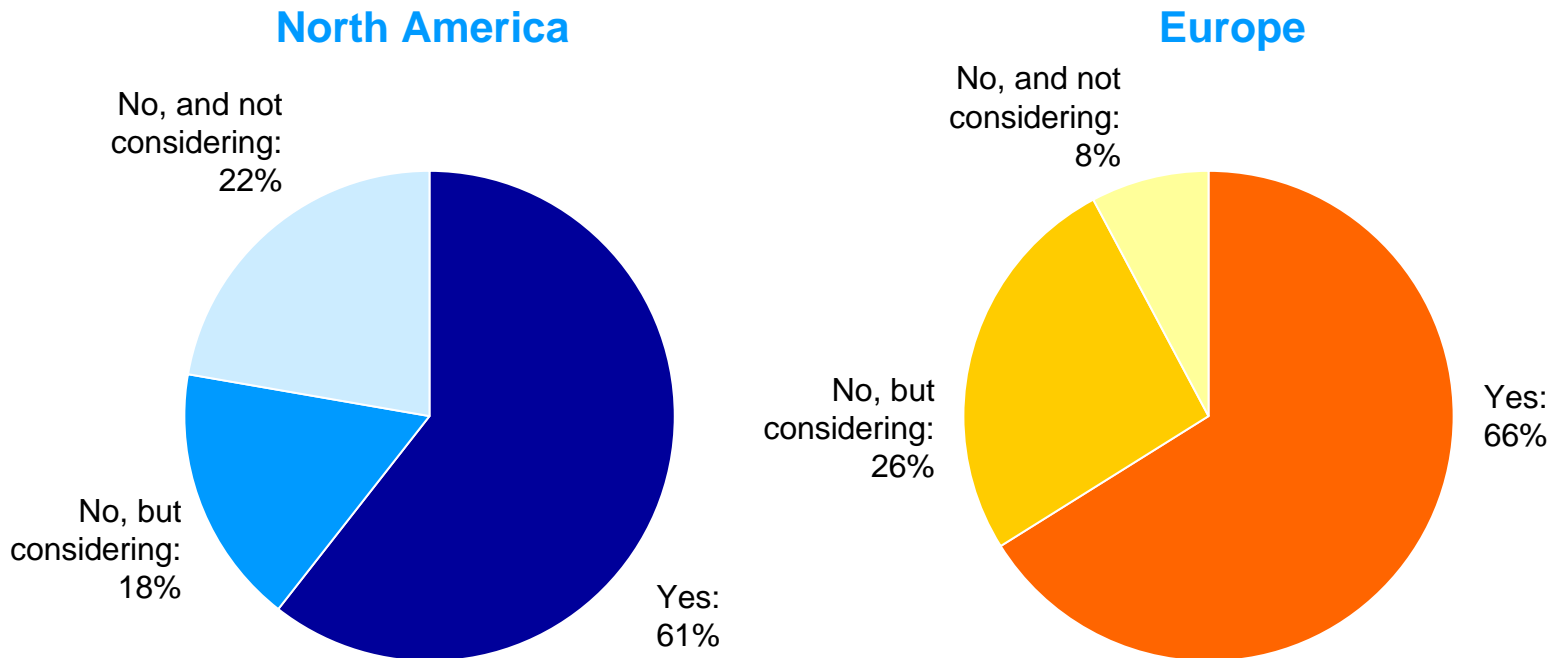
Q: To whom does the person responsible for risk mgmn't primarily report? (Select one response.)



- CROs are more prevalent in Europe; RM committees are more prevalent in North America

The presence of a cross-functional risk management committee is now fairly typical

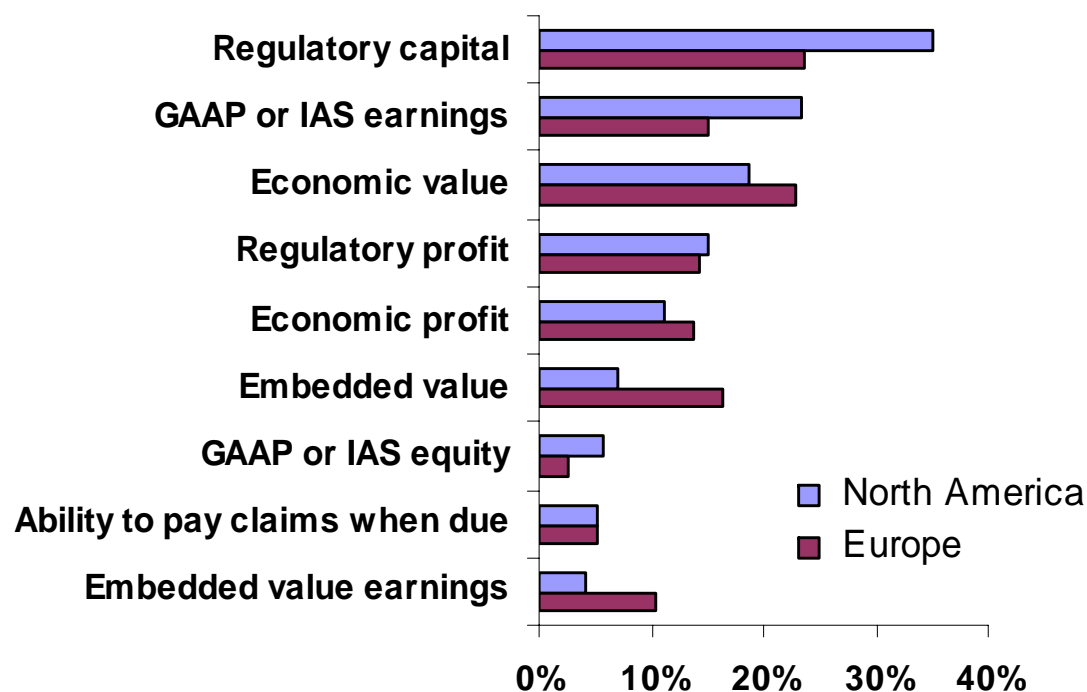
Q: Does your organization have a cross-functional committee? (Select one response.)



- Cross-functional committees are more prevalent in Europe; will become standard practice there

When measuring the impact of risk, statutory or regulatory capital and surplus is the financial measure most frequently cited

Q: When measuring risk, what are the principal financial measures on which the impact of the risk is assessed? (Select up to three responses.)

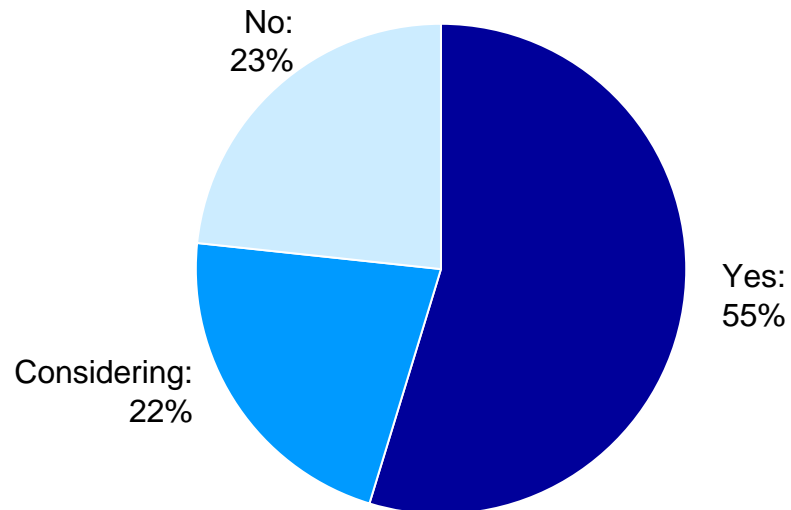


- In Europe there is a greater preference for economic measures over regulatory accounting measures

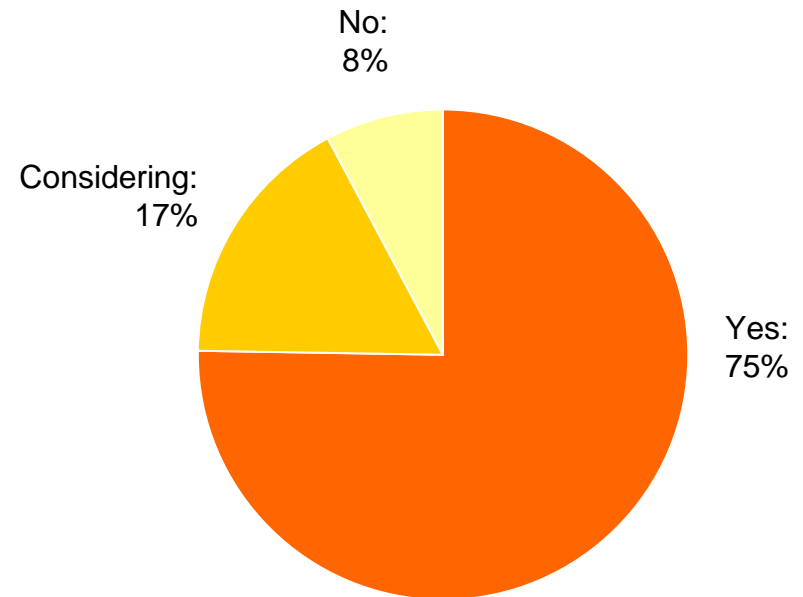
Globally, more insurance organizations are calculating economic capital

Q: Does your organization calculate economic capital (EC) (e.g., measure the amount of capital needed based on the risk of the business)? (Select one response.)

North America



Europe



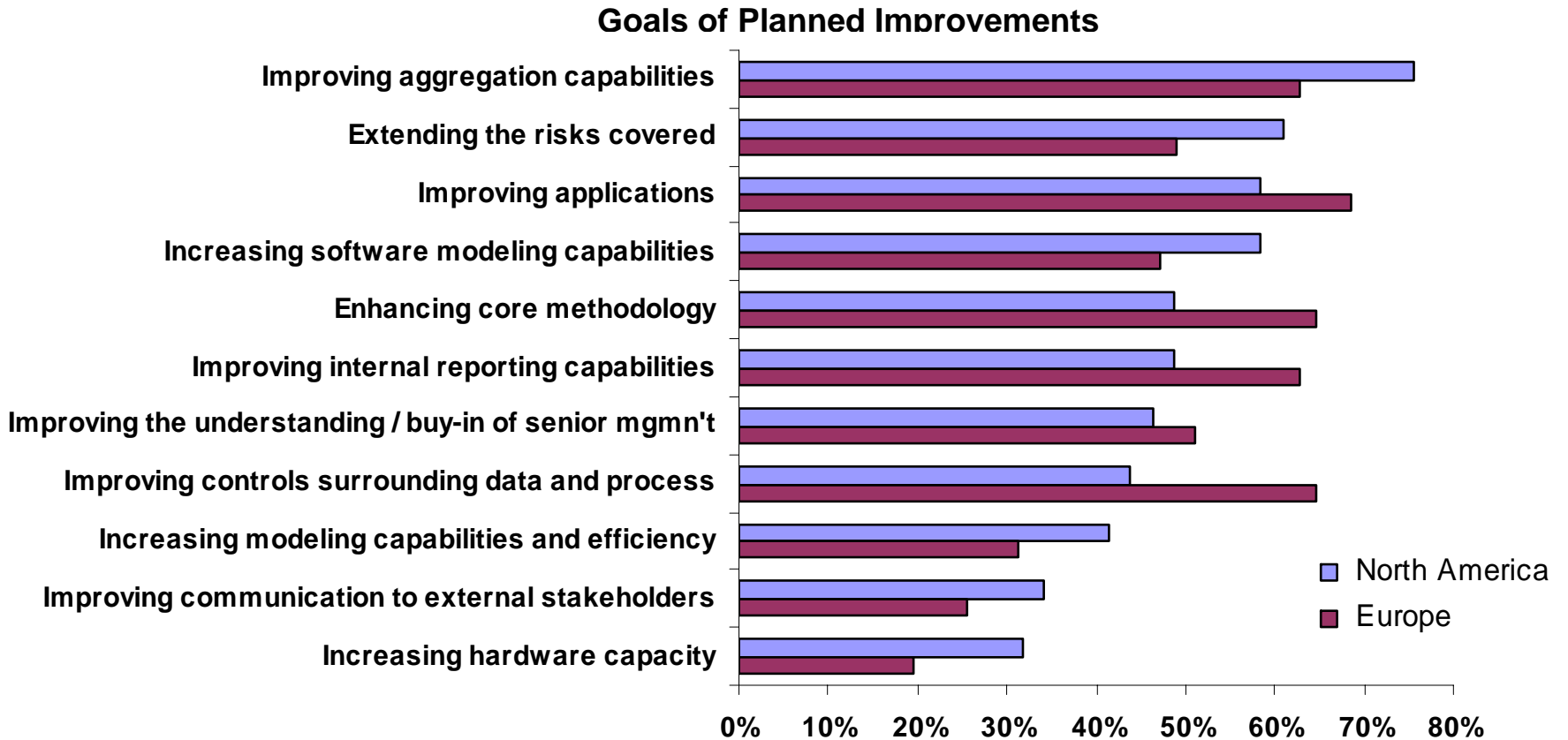
The allocation of capital is a principal driver for calculating EC

Q: What are your principal drivers for calculating EC? (Select up to three responses.)

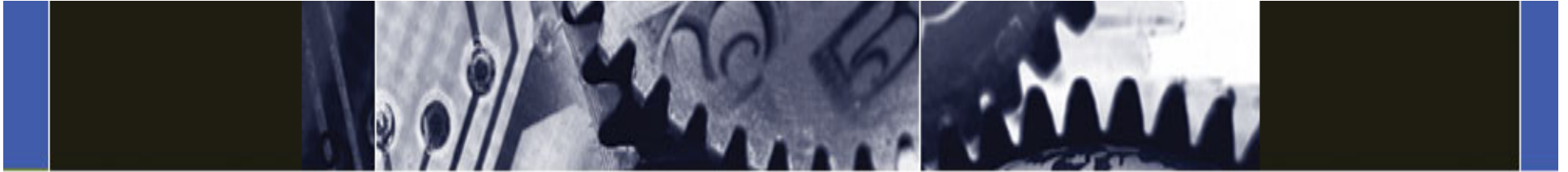


Almost all of the respondents that calculate EC are planning to make further improvements

Q: What are the goals of the planned improvements to EC? (select all that apply.)



■ In Europe there is a greater focus on EC applications and controls



Some EC Implementation Issues

- Reconciling Actuarial and
 - Financial Engineering Viewpoints:
 - RM vs. ALM vs. DFA
- Discount rate for long maturity instruments
- Time horizon issues

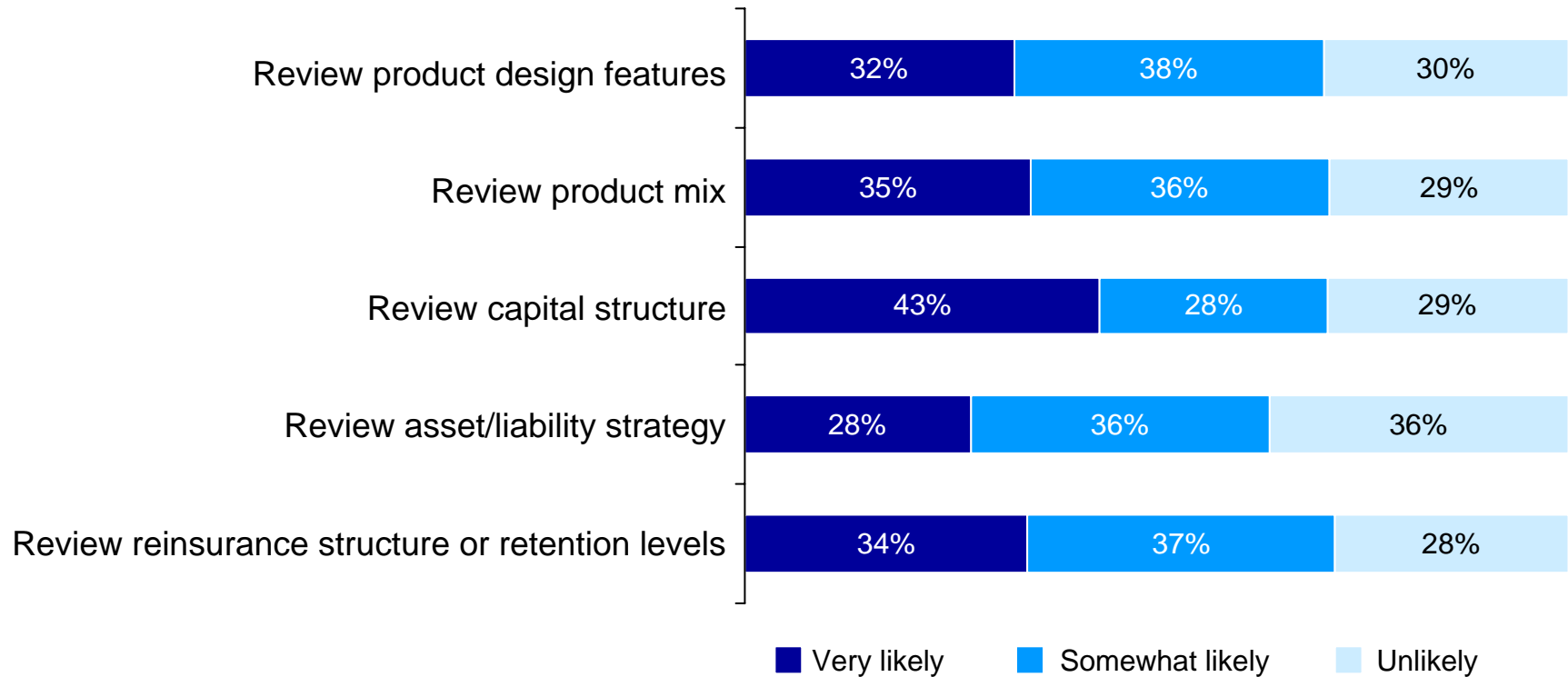
While enhancing risk quantification has the highest priority, governance and organizational issues are also given priority

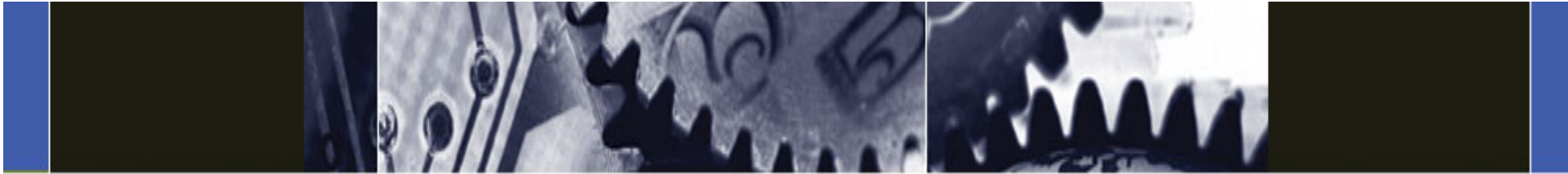
Q: What level of priority does your organization place on each of the following actions?



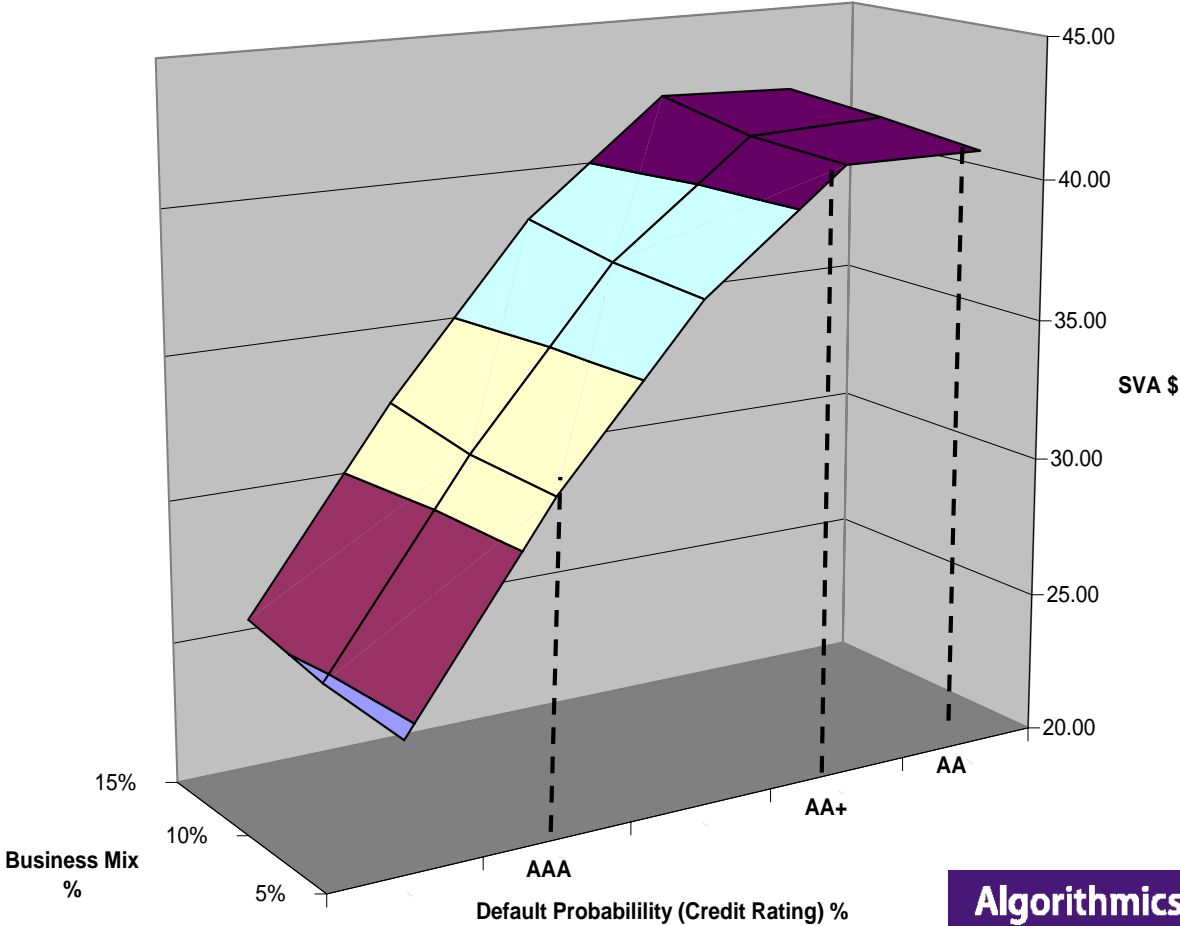
Over 40% of European respondents are very likely to review their capital structure as a result of Solvency II

Q: How likely are you to take advantage of the increased risk sensitivity and flexibility of Solvency II to review the risk exposure of your business? (Select one response for each review.)



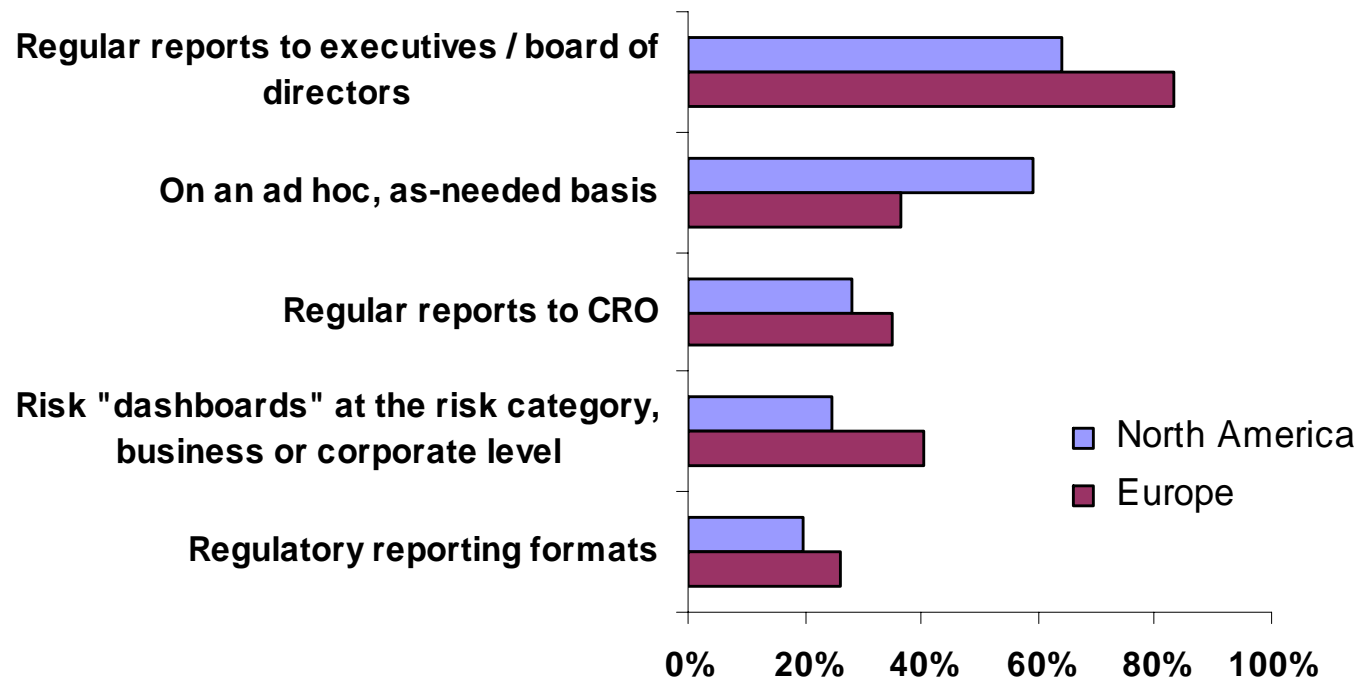


3-D Surface of Shareholder Value Added Optimal Frontier



Internal communication of key risk exposures and risk management activities is a major focus

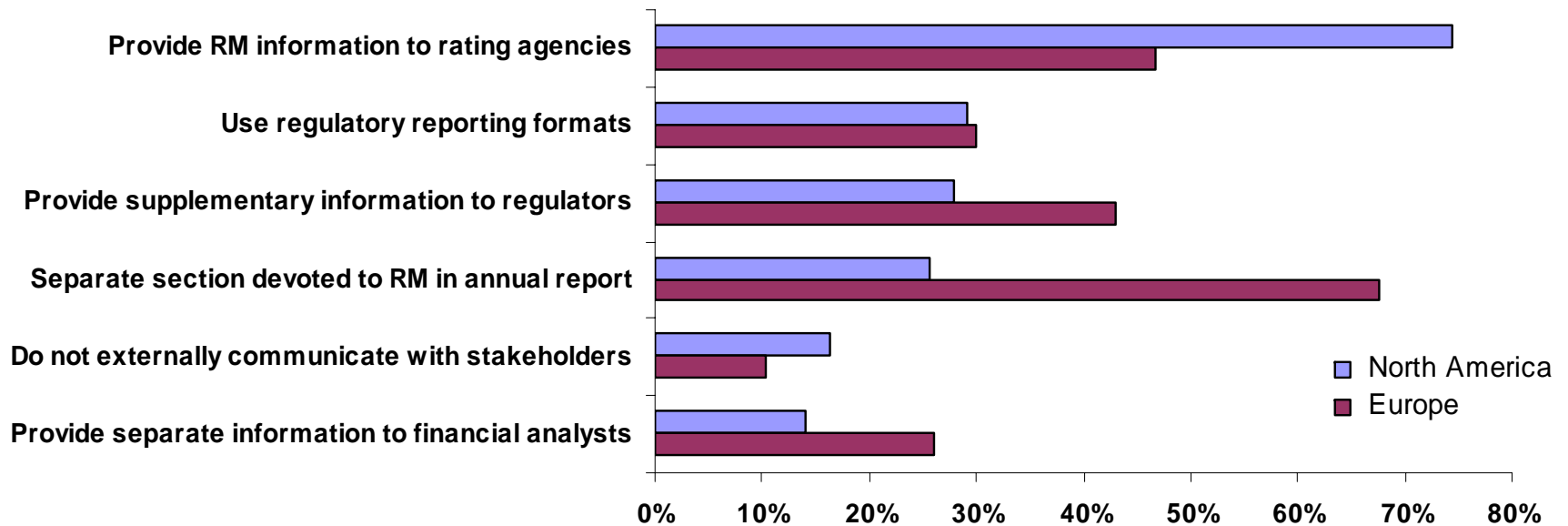
Q: How does your organization internally communicate its key risk exposures and risk management activities? (Select all that apply.)



- Risk reporting has progressed slightly further in Europe

Communication of key risk exposures and risk management activities to external groups is also a major activity

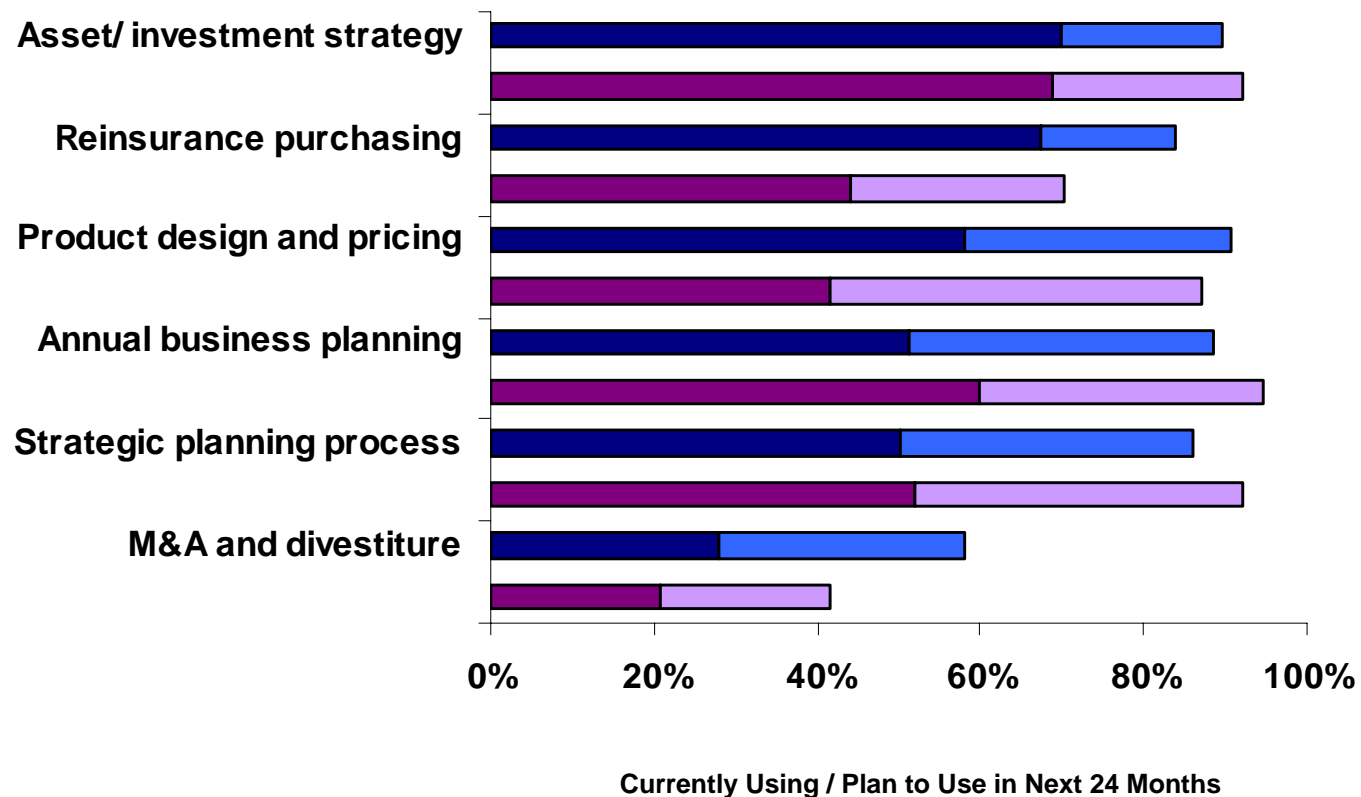
Q: How does your organization externally communicate with key stakeholders about risks and risk management activities? (Select all that apply.)



- A higher proportion of European companies say they are providing risk reporting to shareholders

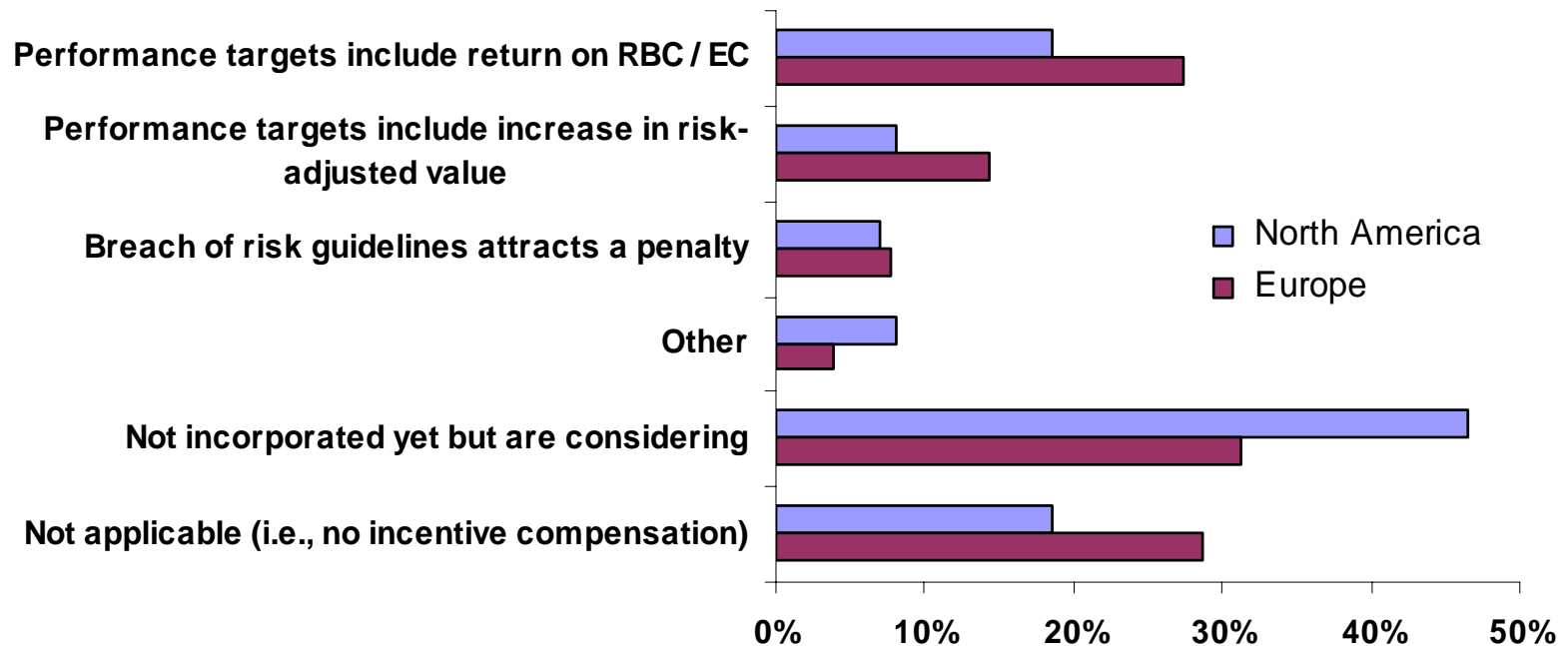
Use of risk and capital management models is increasing across a broad spectrum of applications

Q: Do you currently use or plan to use any risk and capital management models in your decision making regarding the following? (Select one response in each row.)



Despite the extent of risk management activity, almost two-thirds of the respondents are not currently linking management compensation to the results

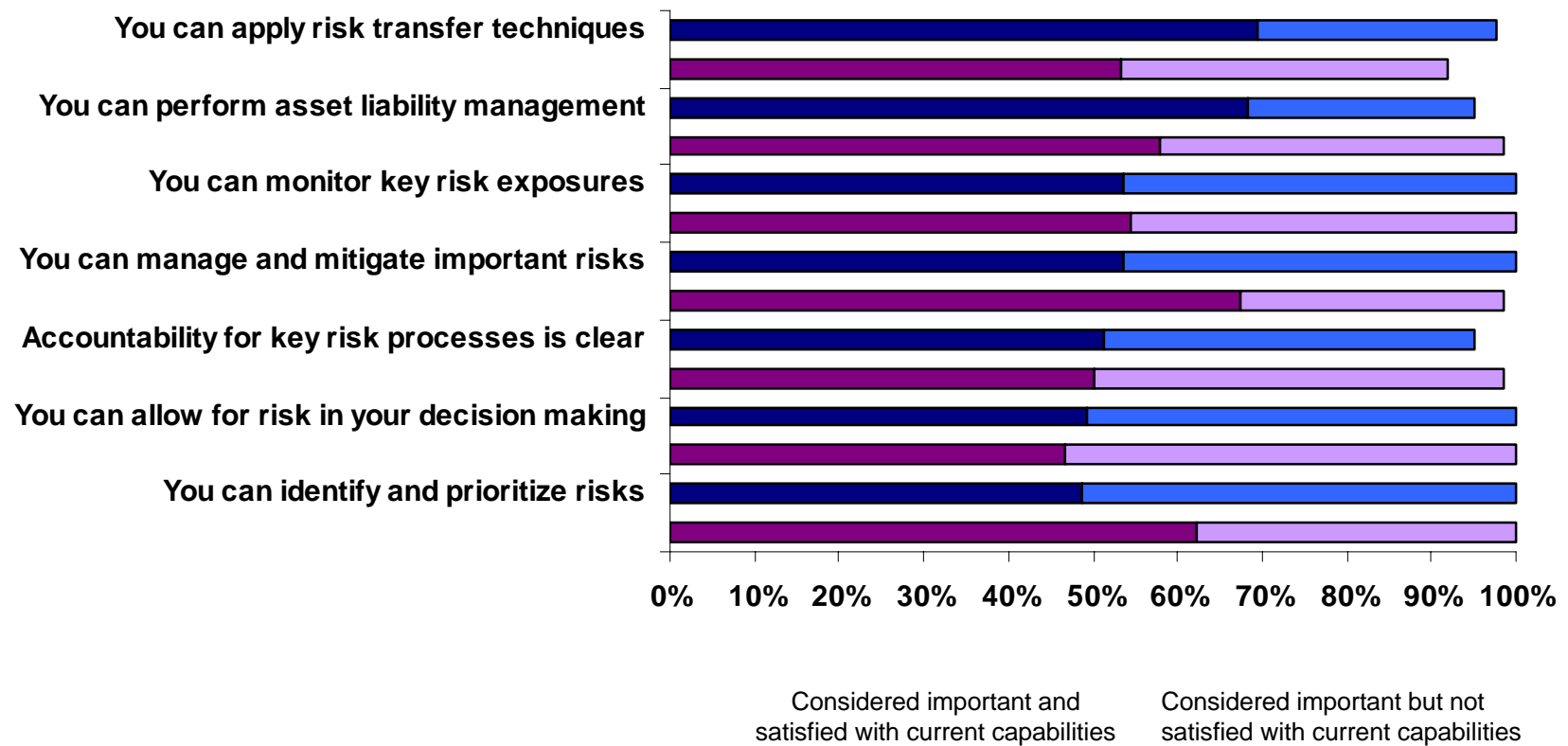
Q: To what extent are risk measures incorporated into your organization's incentive compensation? (Select all that apply.)



- Progress on incentive linkage is greater in Europe than in North America

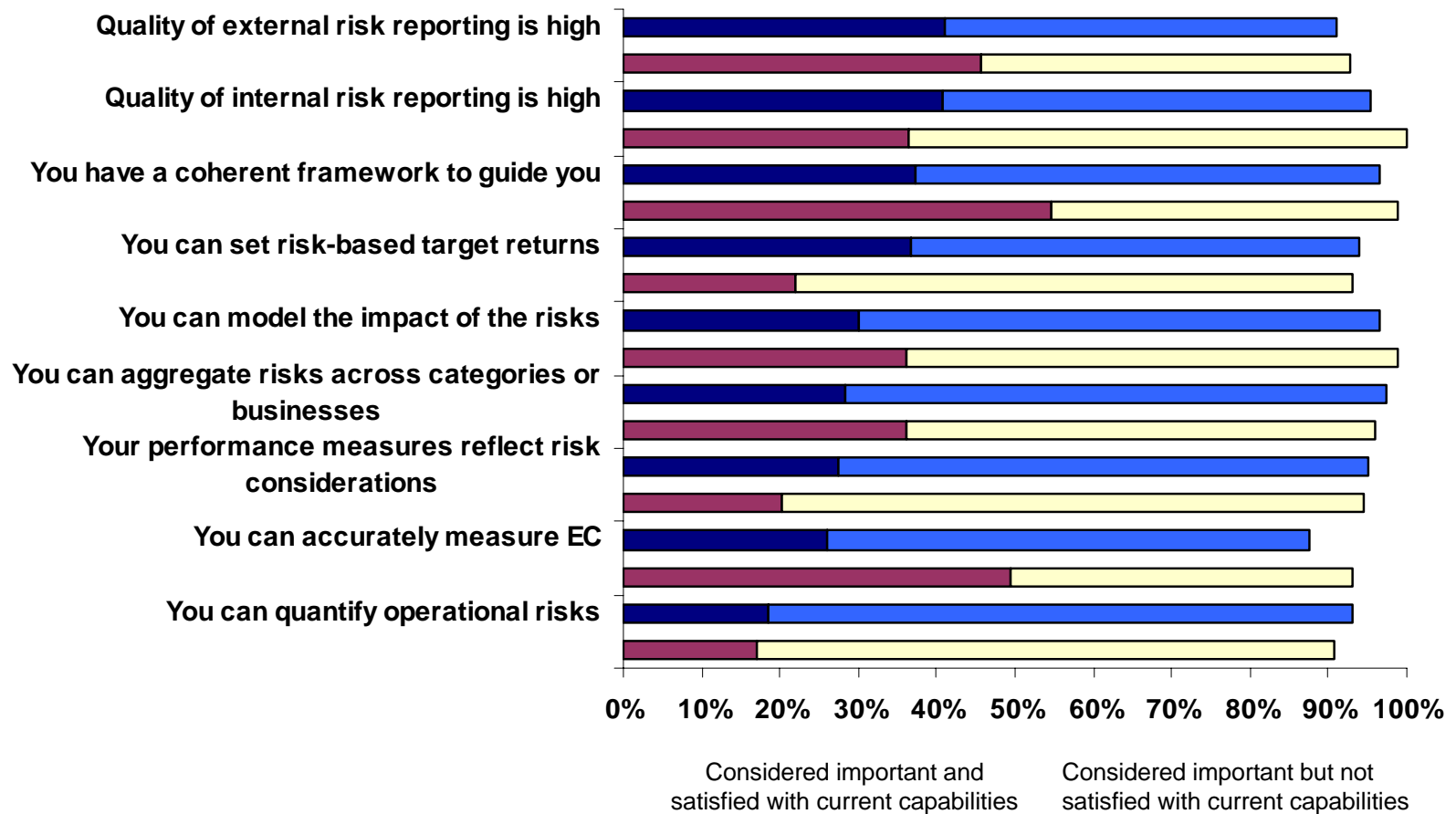
Many respondents are not satisfied with current ERM capabilities that they consider important

Q: How important are the following to your organization and what is your level of satisfaction with your current capabilities?



Satisfaction is quite low on some current ERM capabilities that are considered important

Q: How important are the following to your organization and what is your level of satisfaction with your current capabilities?



Q&A
