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# Enterprise Risk Management

## Managing Uncertainty

10 February 2011

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Deloitte & Touche Enterprise Risk Services



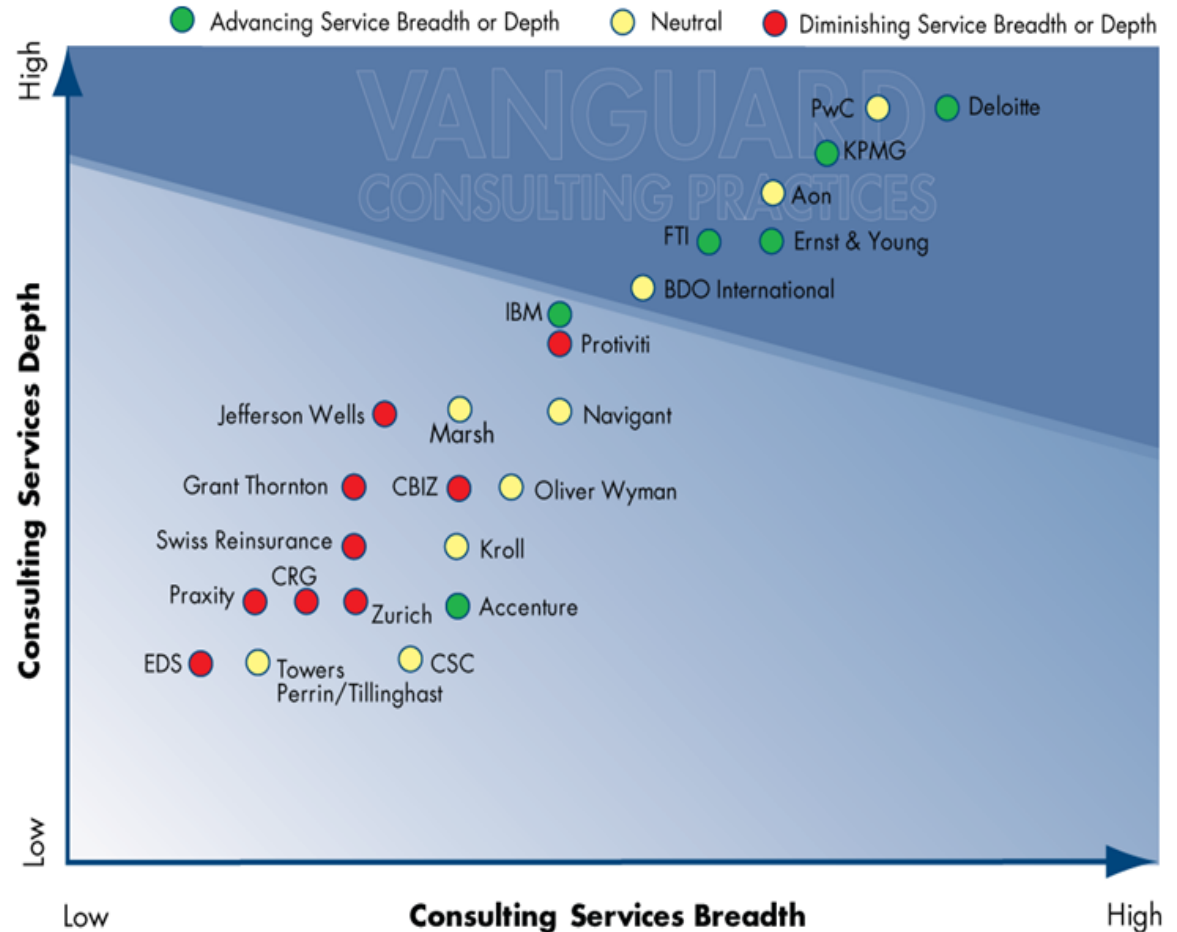


# Industry Experience & Recognition

“Deloitte operates the world’s largest and most robust risk consulting practice. Its offerings stretch across every segment of the market.”\*

“Deloitte... provides clients with a Risk Intelligence Map that helps them identify potential risks and risk interactions. Developed around 15 example clients to improve their risk management processes and identify key enterprise wide risks that need to be effectively managed and communicated to all levels of the organization.”\*

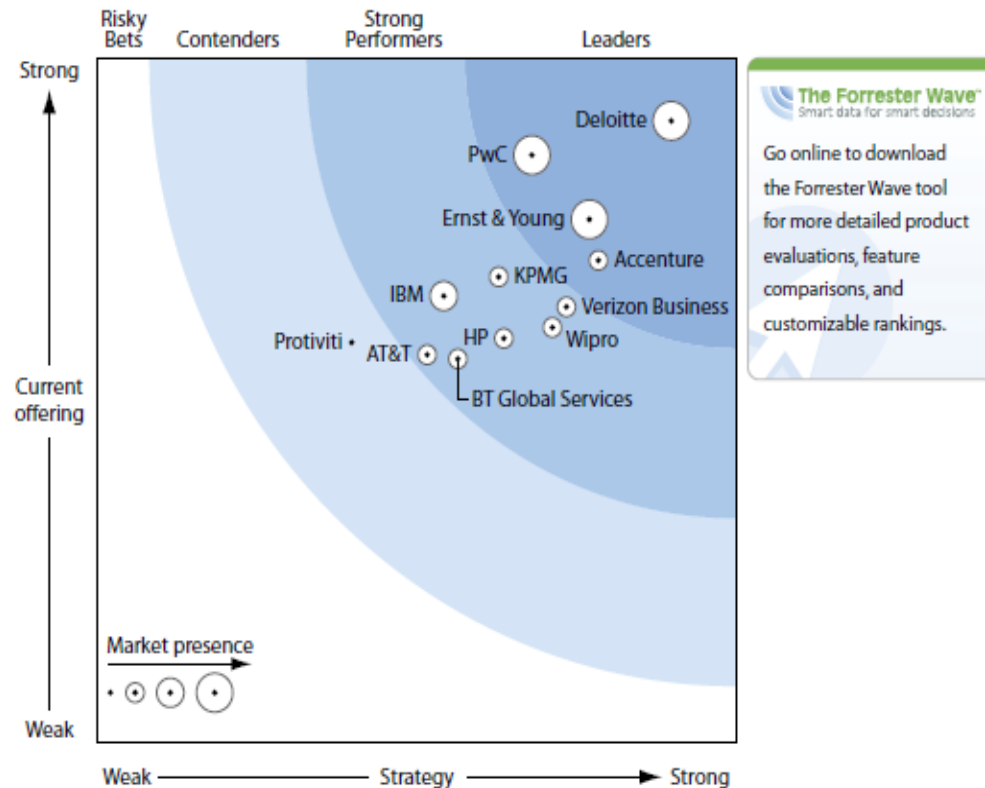
\*Source: Kennedy Information; Risk Management Consulting Marketplace 2009; © BNA Subsidiaries, LLC.; reproduced under license.



## Industry Experience & Recognition

Deloitte has been recognized as the global leader in Information Security and IT Risk Consulting

Figure 3 Forrester Wave™: Information Security And Risk Consulting, Q3 '10



Source: Forrester Research, Inc.

“Deloitte, (and three other firms ) lead the pack. All four service providers exhibited excellent breadth in their services portfolio and competencies; all of them also had a significant global reach and excellent client references. More importantly, Forrester found that all four service providers were tuned into the changing market dynamics and customer expectations. As a result, they are making significant investments in future capabilities and enhancement.”

“The Forrester Wave™: Information Security And Risk Consulting Services, Q3 2010,” Forrester Research, Inc., August, 2010 \*

\*Source: Forrester Wave™: Information Security and IT Risk Consulting, Q3 2010”, Khalid Kark

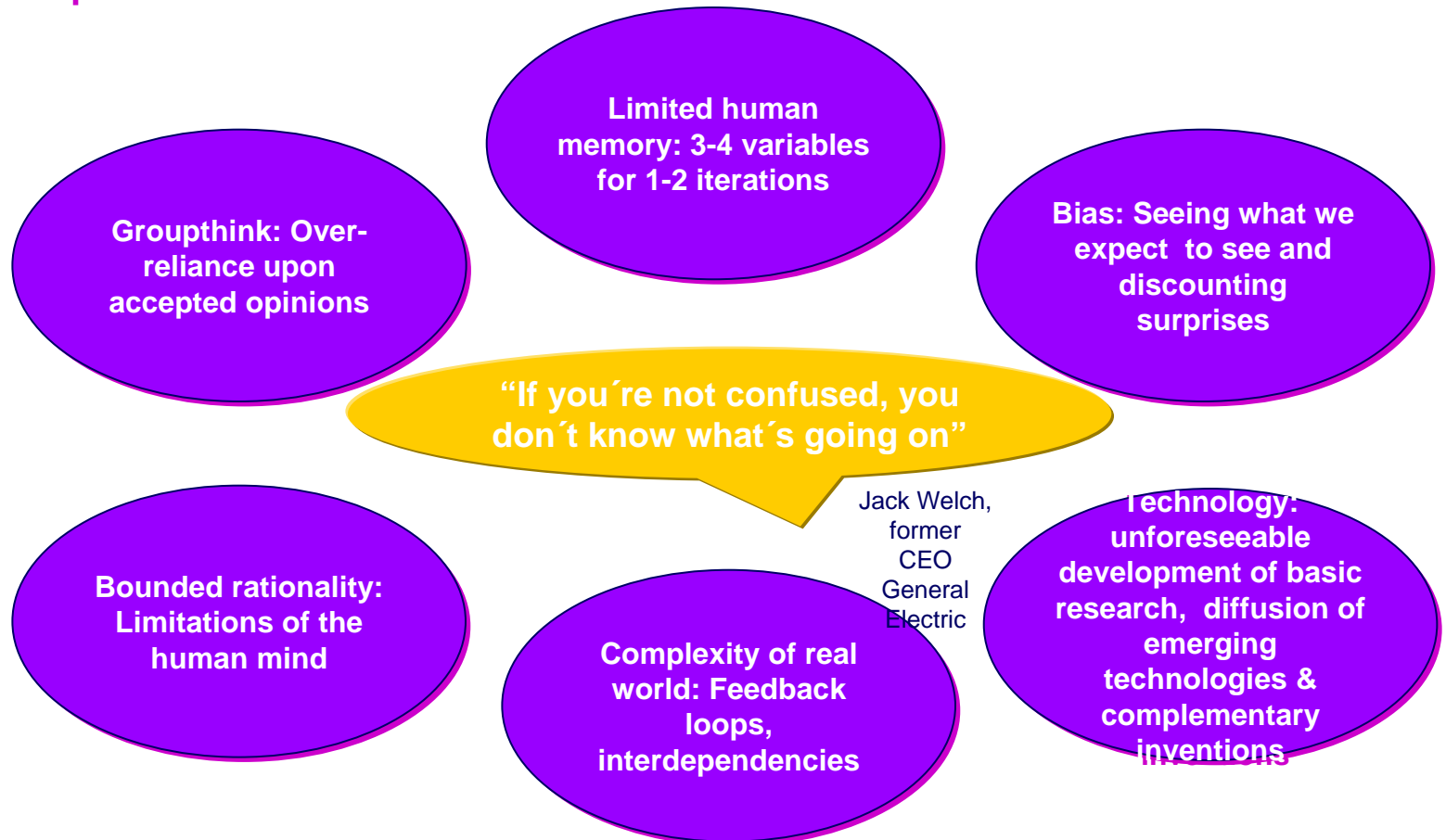


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# Change & Uncertainties

## There is genuine uncertainty about the future

Human cognition is not apt to discern unequivocally our complex real world



Thus the fact is that the future is unknown and cannot be predicted – even if actions today form the basis for outcomes in the future

- Change is the only constant

**“There is no reason anyone would want a computer in their home”**

Ken Olson, President, Chairman & founder of Digital Equipment Corp., 1977

**“The concept is interesting and well-focused, but in order to earn better than a ‘C’, the idea must be feasible”**

A Yale university management professor in response to Fred Smith’s paper proposing reliable overnight service (Smith went on to found Federal Express Corp.)

**“There is at least one point in the history of any company when you have to change dramatically to rise to the next performance level”**

Andy Grove  
Chairman Intel

**“The future has already happened, it’s just unequally distributed”**

William Gibson  
(Contemporary writer)

William Jennings Bryan  
(19/20<sup>th</sup> century politician)

**“What do 13 people in Seattle know that we don’t”**

Ross Perot when presented with a proposal for EDS to acquire Microsoft, 1980

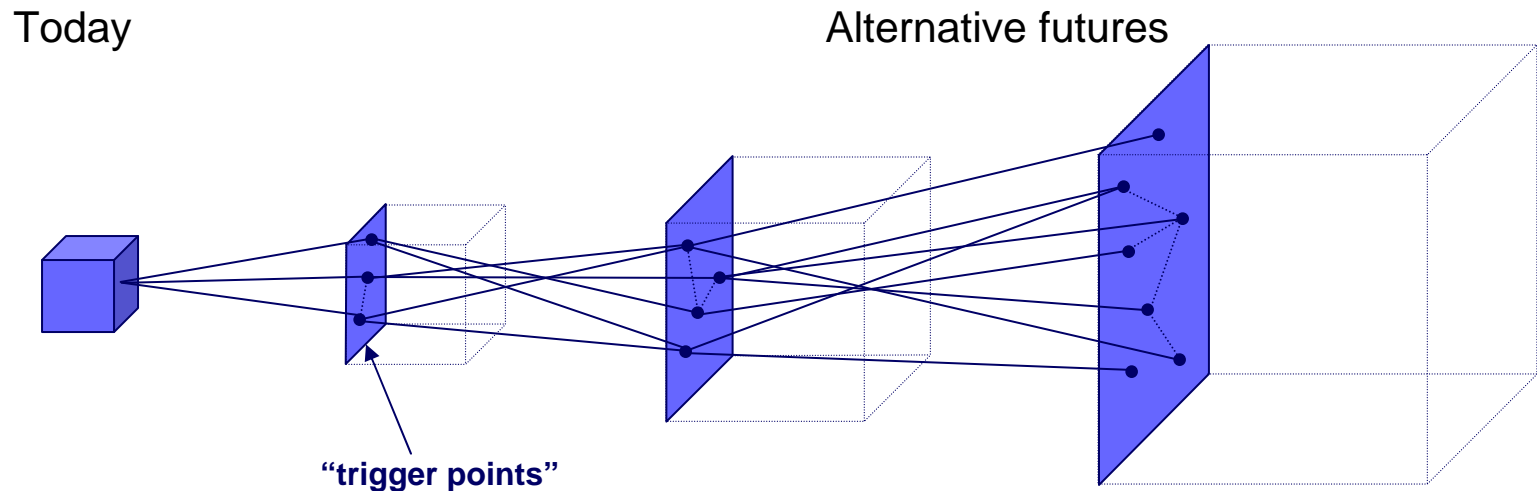
**“There are always two parties, the party of the past and the party of the future; the establishment and the movement”**

Ralph Waldo Emerson  
(19<sup>th</sup> century politician and writer)

**“Destiny is no matter of chance. It is a matter of choice; it is not a thing to be waited for, it is a thing to be achieved”**

## Outcomes in the future can take numerous paths

- There is no certainty for one specific path



► *• Usually companies commit to one path – but is this not more than betting on the future?*

## What makes the future so unpredictable?

- Forces shaping commercialization strategy

### Change in technology/skills

- What new skill sets are needed to develop and manage the technology?
- How are these different from the company's current skills?
- What percentage of the firm's current skill set will continue to be valuable when the new technology is commercialized

### Change in complementary assets

- What complementary assets are currently valuable to the firm?
- Which assets will retain their value and what new complementary assets are required?
- What proprietary architectural standards can the firm control?
- With what complementary product does the firm's product now interface?
- What complementary product areas should the firm enter?



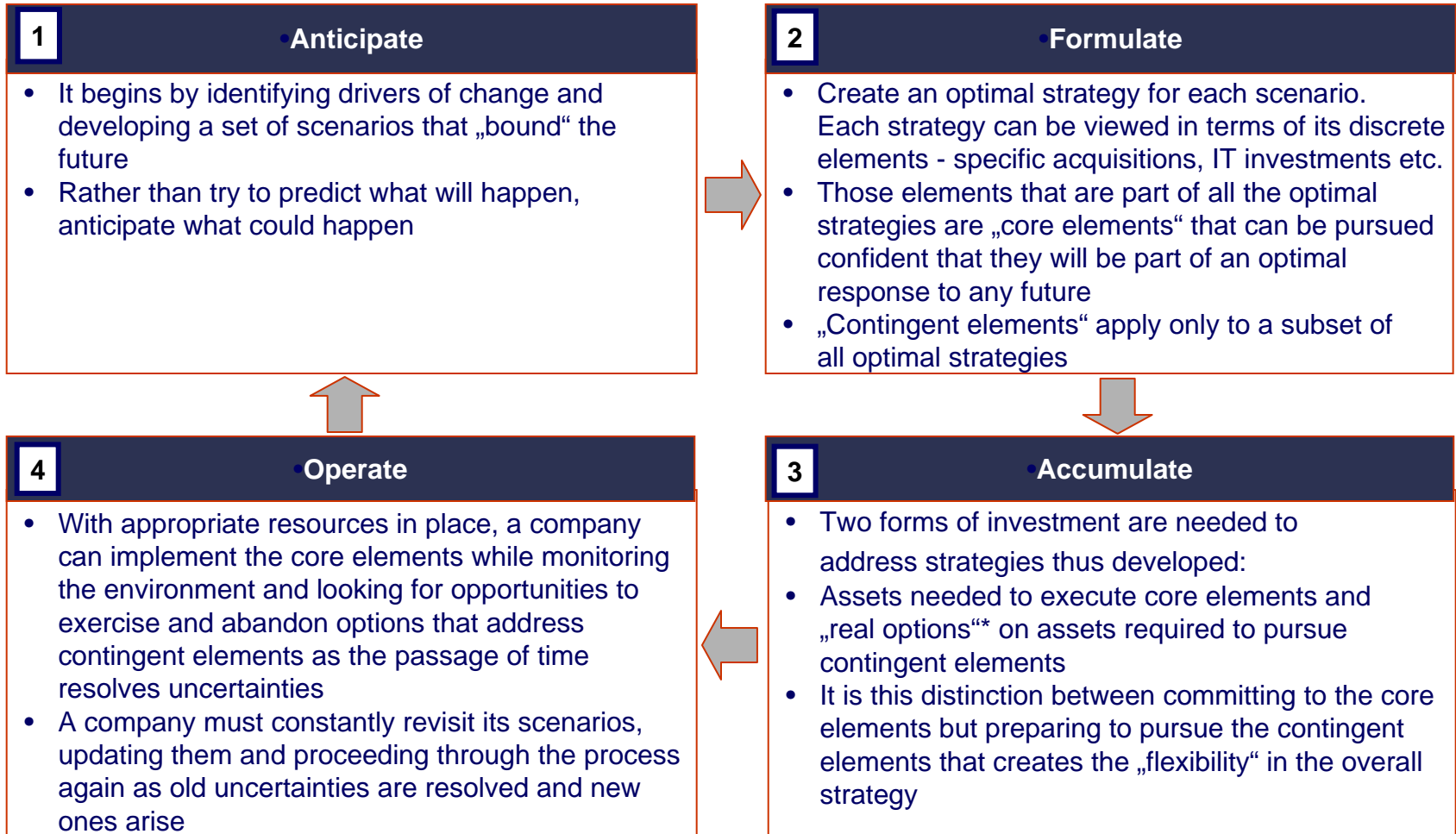
### Change in customers

- What new customer segments emerge?
- How do the needs of those customers differ from traditional customers?
- How does the new technology affect the capabilities of existing capabilities?
- Is there a way to ease the transition for existing customers and keep them tied in?

### Change in competitors

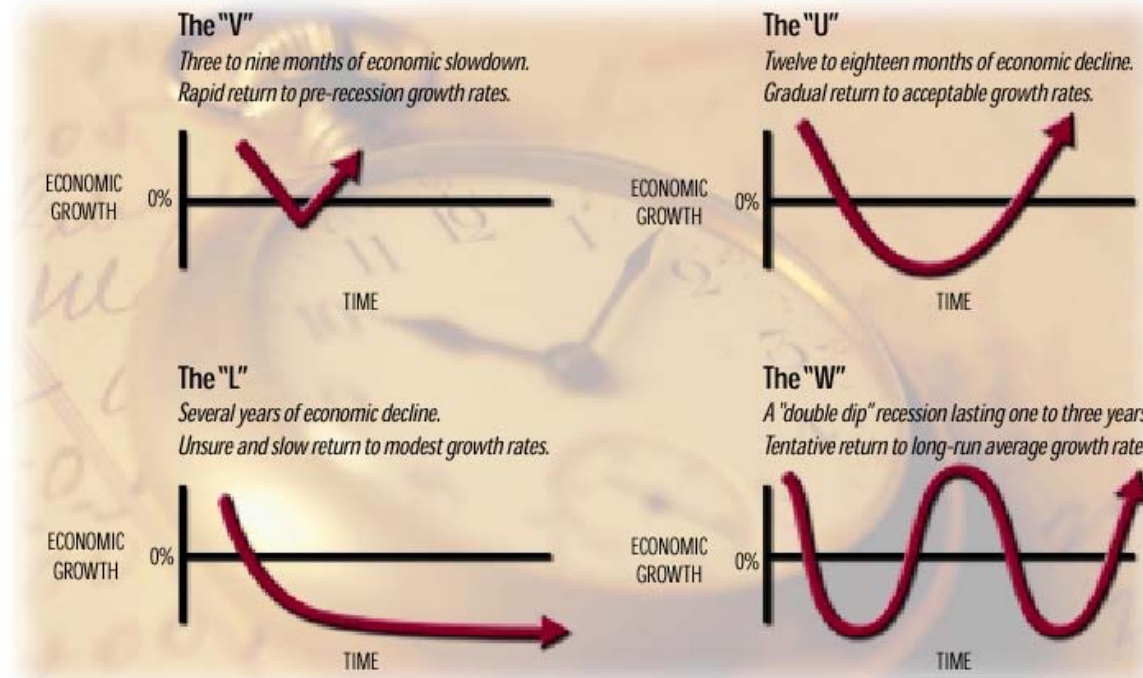
- What new competitors from different industries are likely to enter this market?
- How do their capabilities differ from those of traditional competitors?
- How do their incentives differ from those of traditional competitors

## The firm can respond to threats or capitalize on opportunities



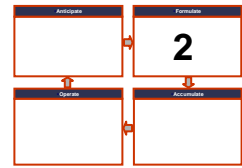
\* See chapter “Deloitte Tools & Methodologies” for an introduction into various risk & decisions analysis tools

## Anticipate - starts with defining the range of possible futures



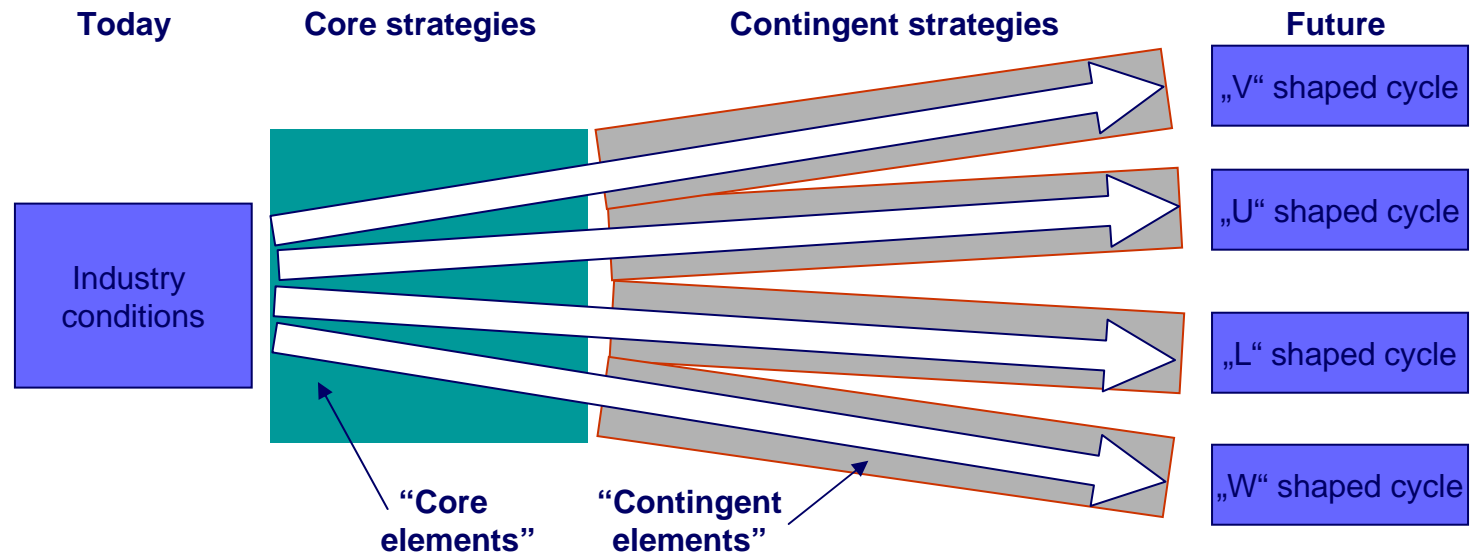
### Example : Business Cycle

- Each of these shapes constitutes not a prediction of how the economy will cover
- Rather, each one is a form of boundary marker, and collectively the scenarios serve to limn the future, rather than predict it
- In other words, a set of scenarios marks out a "possibility space" with detailed scenarios serving as buoys in uncertain and potentially turbulent waters



**Formulate** - the next step is to create an optimal strategy for each scenario and to define „core“ & „contingent“ elements

## Flexibility through core and contingent elements



- *Analysis of the commonalities and differences between the optimal strategies*
- *Those initiatives suggested by all of the optimal strategies constitute the organization's core strategy - a strategy that can be pursued confident that it will be a useful response to whatever future emerges*
- *Examples might include investment in customer relationship capabilities, adopting shareholder-focused performance metrics, investing in HR, etc.*



Accumulate - developing a complement of core & contingent strategies provides insights for the management of resources



A framework for accumulating resources

		Relevant to which scenarios		
		None	All	Some
Resources the firm has	Sell	Keep and maintain	Scale back	
Resources the firm does not have	Avoid	Acquire	Take real options	

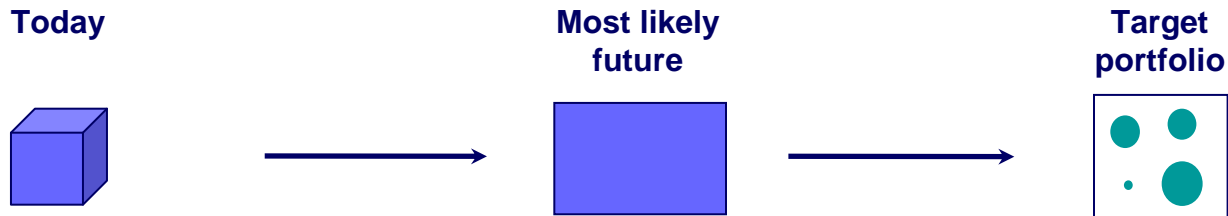
These are elements of the core strategy
 These are elements of contingent strategies

- The fundamental challenge that the Strategic Flexibility framework solves is how to prepare for multiple possible futures – each of which requires different responses – simultaneously
- This is done through the creative use of real options – small -scale investments in capabilities a firm might need which confer the right, but not the obligation to invest more money in the future in order to fully deploy that capability

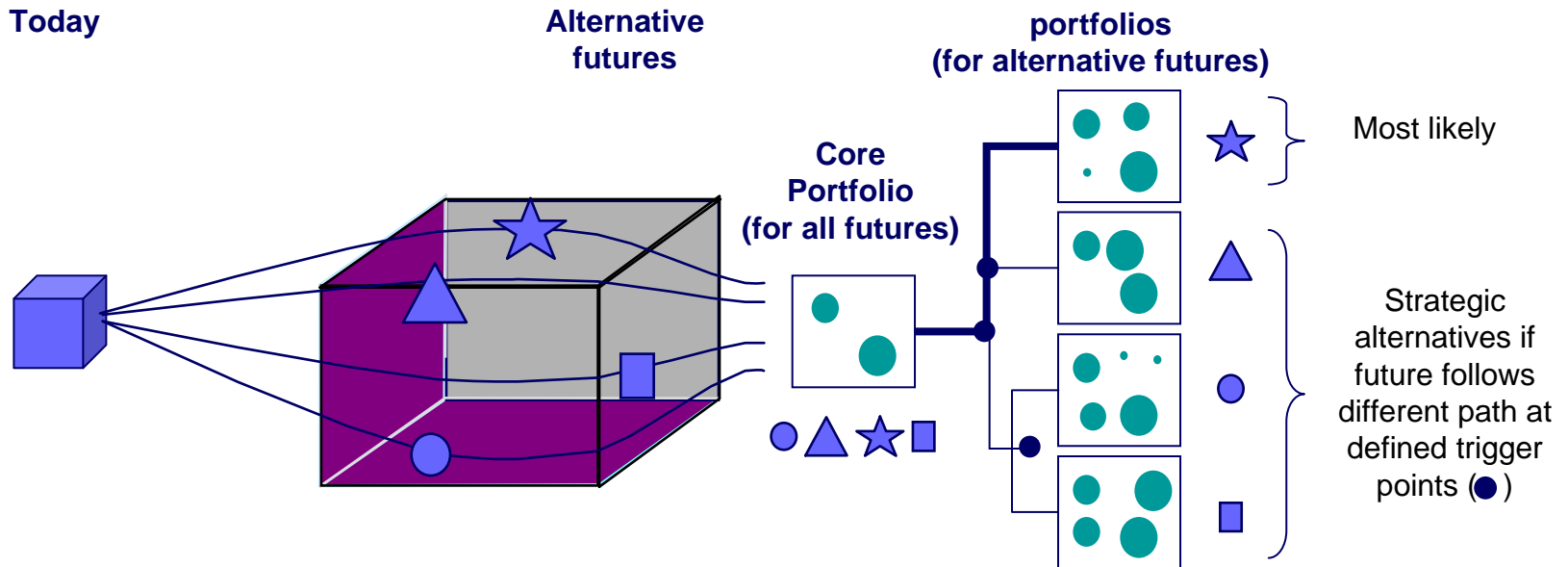


## Creating target portfolios for alternative futures keeps strategic flexibility

### Conventional approach



### Uncertainty based approach





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# Enterprise Resilience

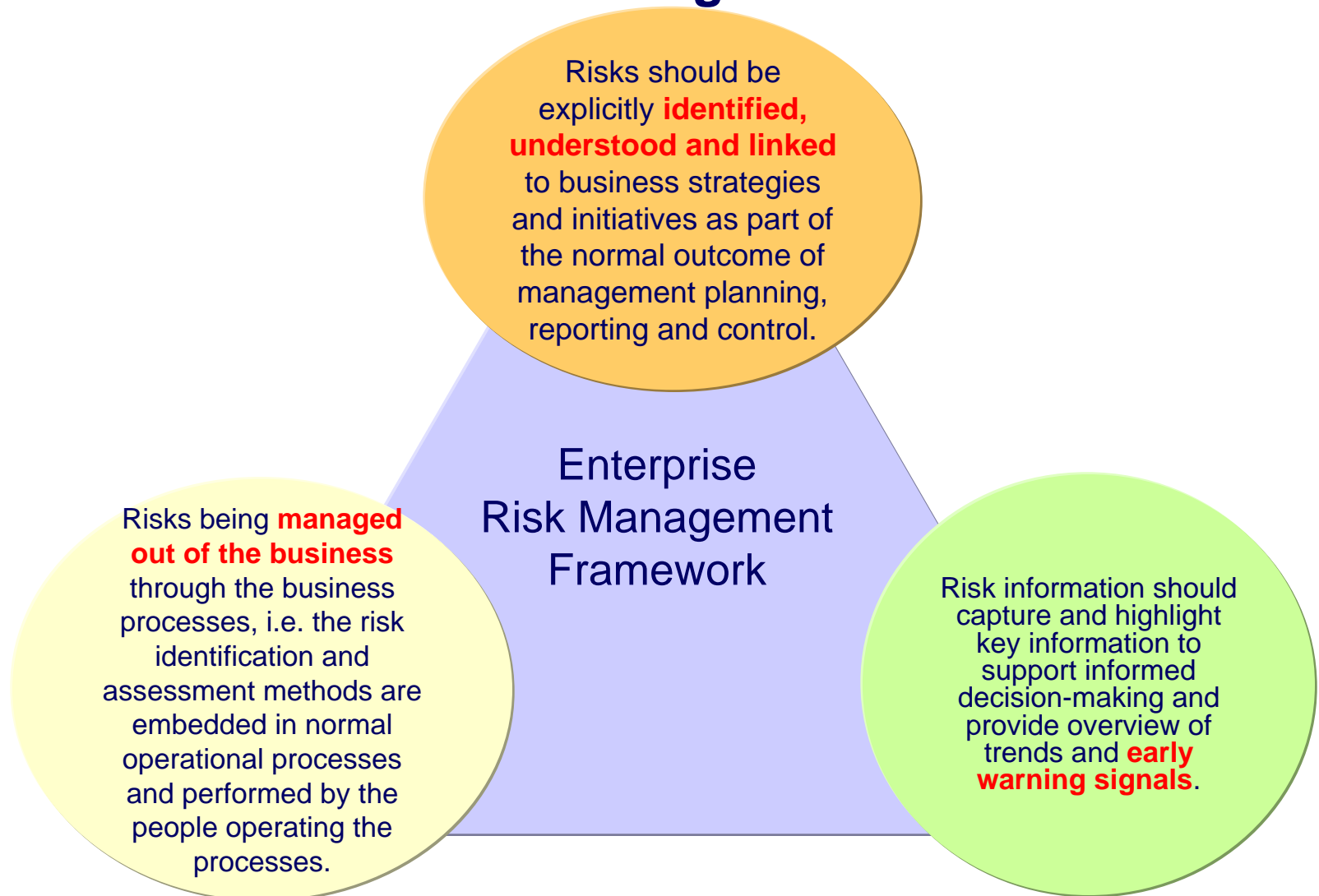
## Enterprise Resilience

- Ability and capacity to withstand systemic continuities and adapt to new risk environments
- Resilient organizations align strategy, operations, management systems, governance structure and decision support capabilities so that it can uncover and adjusts to continually changing risks, endure disruptions to its primary earning drivers and create advantages over less adaptive competitors

## Enterprise Resilience

- A resilient organization establishes transparency and controls for the CEO and Board to address risks across the enterprise
- It can withstand improper and fraudulent employee behaviour, IT infrastructure failures, disruptions to the supply chain or customer channel, intellectual property theft, adverse economic conditions across markets and the myriad disruptions in today's globalised environment

## The Role of Enterprise Risk Management

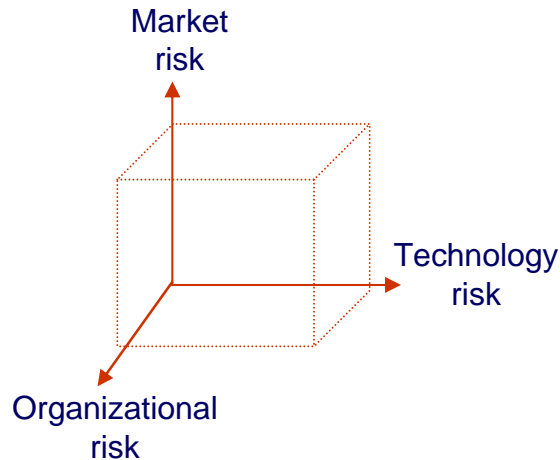


## Identify Risk

- Risk profiling considers different sources of risk

### Sources of market risk

- Market size and scope
- Definition of customer base
- Knowledge of customer needs
- Distribution channels
- Regulatory environment
- Intellectual property regimes
- Competitors' position and reaction



### Sources of technology risk

- Technical feasibility
- Uncertain standards
- Physical dangers
- Product liability
- Supply of materials
- Manufacturability

### Sources of organizational risk

- Fit with capabilities
- Cost
- Speed of organizational change
- Dependence on new organization
- Dependence on external partners
- Quality & availability of personnel
- Burn rate vs. cash and capital

## Building on ERM Towards Enterprise Resilience

- Manage individual risks or groups of risks from a top-down enterprise-wide point of view
- Seek to understand the inter-relationships between risks and based on that understanding, develop more integrated risk management solutions

## Understanding Risks

**Risks** should be explicitly identified, understood and linked to business drivers and strategies as part of the normal outcome of management planning, reporting and control

- Key value drivers
  - Quality of management/strategy execution
  - Effectiveness of new product development
  - Strength of reputation/market position
  - Strength of corporate culture
  - Effectiveness of executive compensation policies
  - Quality of investor/stakeholder communication
  - Quality of products and services
  - Level of customer satisfaction

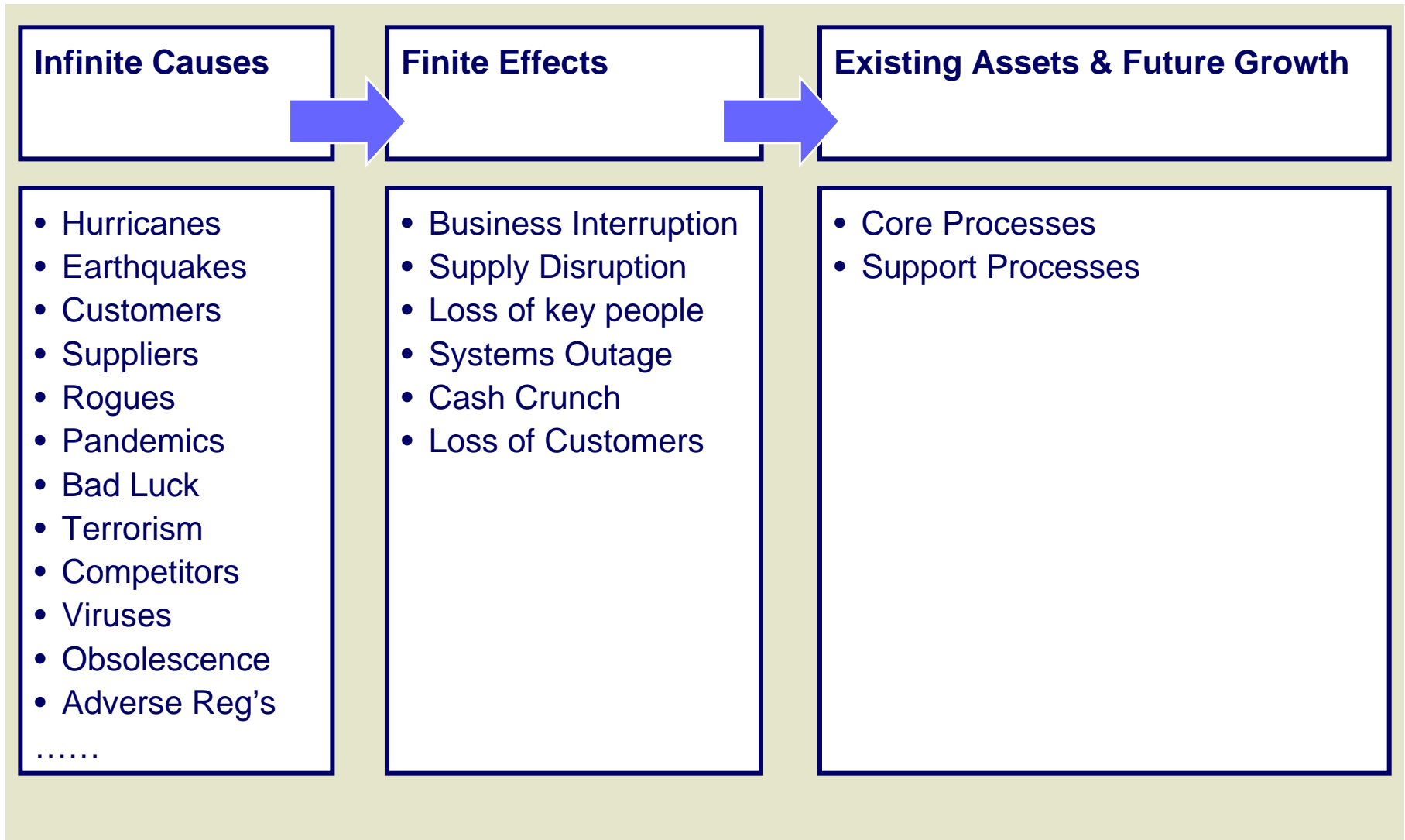
## Understanding Risks

- Beyond assessing risk, it is equally important to perform understand risk i.e. risk sourcing
- Risk assessment focus on what can happen
- Risk sourcing focus on why, where and how they can happen

## Understanding Risks

### – Sourcing for Risk Drivers & Red Flags

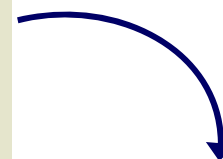
- Sources of risks
  - Changes in environmental conditions
  - Anomalies or deficiencies in business processes or systems
  - Inadvertent or deliberate errors
  - Breakdown in flow of information supporting business processes
  - Facilities or equipment that malfunction or not suited for the job
  - Internally driven event that derives from management action or inaction
  - Inappropriate performance incentives or expectations



## Potential Catastrophic Impact of Structural Risks During a Downturn

### Initial IntEvaR™ Results for XYZ

Level	Scenario Description	Details	EBIT Impact (\$MM)
Parent	Currency changes impact competitive landscape	15% volume decrease 20% price decrease Sustained for 9 months Recovery takes addn. 9 months	\$500
Parent	Natural gas prices increase	\$5/MMBtu increase Sustained for 12 months No ability to pass thru increase	\$200
Sub	Crude oil prices increase	100% increase Sustained for 3 months Pass thru 25% of cost increase	\$20
Sub	Technology shift in optical data storage	15% ODS volume decrease/year 15% price decrease/year \$2MM less in R&D expenditures	\$150
Sub	Competitive pressure	10% price decrease Sustained for 24 months	\$175
Sub	Supply chain disruption	10% volume decrease Sustained for 6 months	\$50

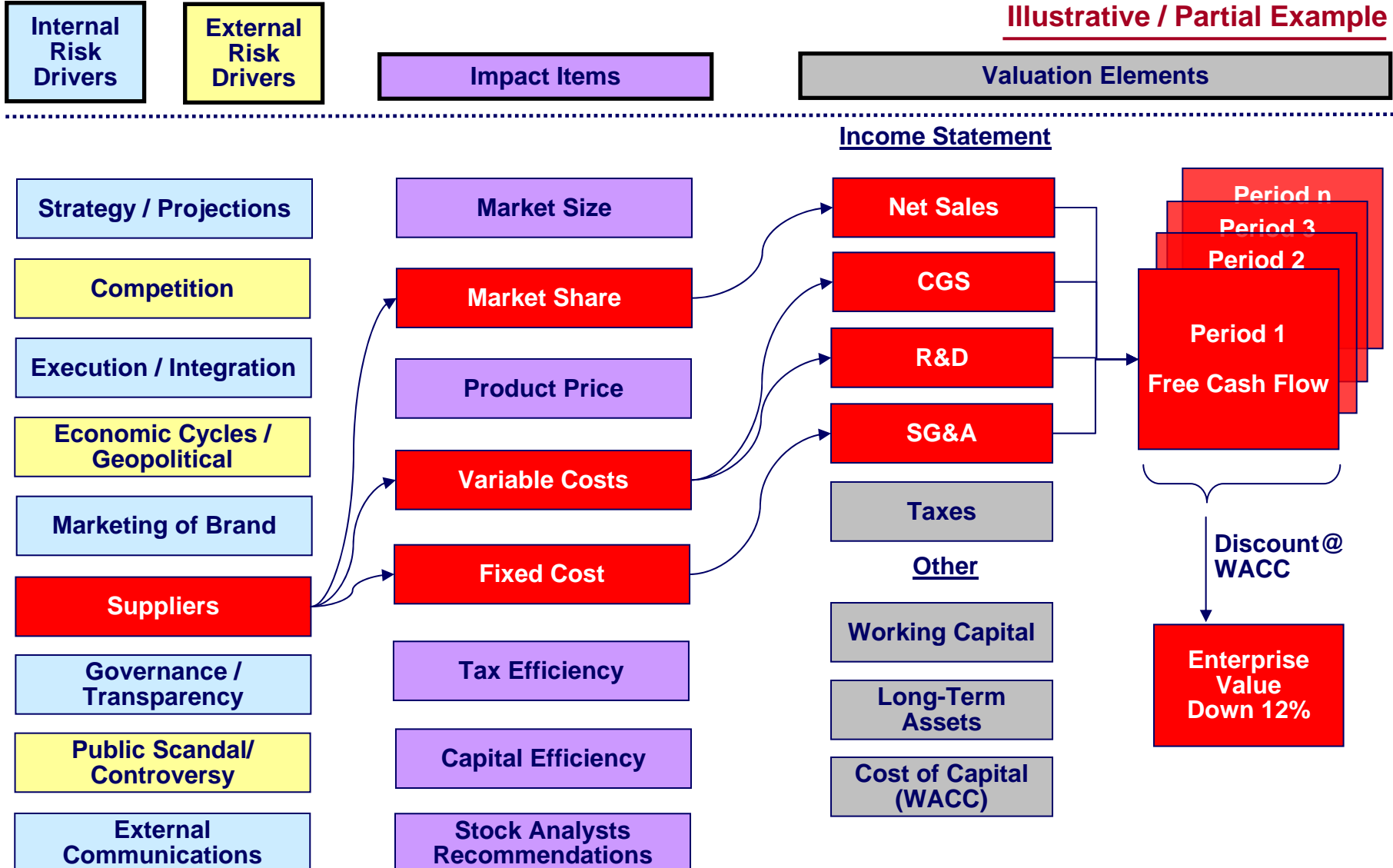


### Sensitivity Analysis: Scenario 1

EBIT Impact (\$MM)		Volume Decrease		
		5%	10%	15%
Price Decrease	5%	\$200	\$225	\$250
	10%	\$250	\$275	\$300
	15%	\$325	\$350	\$400
	20%	\$400	\$450	\$500

## Manufacturing Company: Fire destroys plant of key sole-source supplier

**Illustrative / Partial Example**





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# Risk Management Framework

*The key elements that need to be in place if risk management is to be effective, and innovation encouraged, include:*

**Leadership**

*Senior management who support, own and lead on risk management*

**Communication**

*Risk management policies and the benefits of effective management are clearly communicated to all staff*

**Approved Framework**

*Risk management framework, approved at senior level, within which risk is to be identified and managed*

**Culture**

*Organisational culture which supports well thought through risk taking and innovation*

**Processes**

*Risk management is fully embedded in management processes and consistently applied*

**Objective-led**

*Management of risk is closely linked to achievement of objectives*

**Partnership Risk Assessment**

*Risks associated with working with other organisations are assessed and managed*

**Monitor & Review**

*Risks are actively monitored and regularly reviewed*

## Decisions about Risk



- Willingness to 'take a risk' depends on the opportunity to achieve benefits associated with the risk
- Also important is the ability of the organisation to limit its exposure to risk
- Decisions about risk will vary depending on whether it relates to long, medium or short term goals
- Strategic decisions** are primarily concerned with **long-term goals**; these set the context for all other decisions within the organisation.
- Medium term goals** are usually addressed through **programmes and projects to bring about business change**.
- At the operational level the emphasis is on **short term goals** to ensure **ongoing continuity of business services**

## Where Risks Occur



- At the **corporate or strategic level**, where the organisation is concerned with setting and maintaining its strategic direction and high level objectives.
- Programme level**, where interdependencies between projects and the wider business environment are being managed
- Project level**, where the risks typically relate to progress against plans
- At **operational level** they may relate to technical problems, supplier management or the wider services marketplace
- A risk may materialise initially at one level but subsequently have a major impact at a different level.
  - A High Street bank facing technical faults at the operational level; ultimately customers' confidence in the bank's online service became a strategic risk.

#### 1. Corporate/ Strategy

- *Commercial, financial, political, environmental, directional, cultural, acquisition and quality risks. There is a focus on business survival and growth for the future.*
- *Programme, project and operational risks should be escalated to this level against set escalation criteria – e.g. not acceptable, outside agreed limits, could affect strategic objectives*

#### 3. Project

- *Personal, technical, cost, schedule, resource, operational support, quality and provider failure.*
- *Operational issues/risks should be considered as they affect how project needs to be run.*
- *Strategic and programme related risks should be communicated to this level where they could affect project objectives.*
- *Project managers should communicate risks to other projects and operations as appropriate*

#### 2. Programme

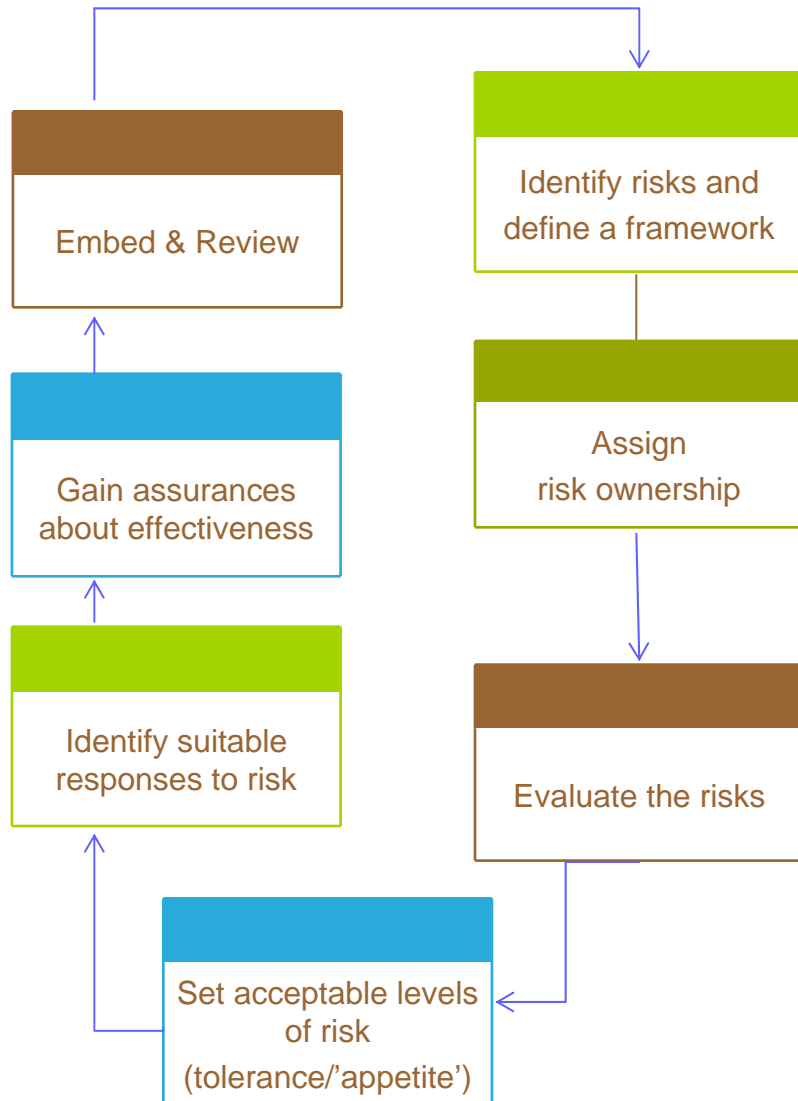
- *Procurement/acquisition, funding, organisational, projects, security, safety, quality and business continuity risks*
- *Project and operational risks should be escalated to this level against set escalation criteria –eg not acceptable, outside agreed limits, could affect programme objectives*

#### 4. Operations

- *Personal, technical, cost, schedule, resource, operational support, quality, provider failure, environmental and infrastructure failure.*
- *All the higher levels have input to this level; specific concerns include business continuity management/contingency planning, support for business processes and customer relations.*

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## The Risk Management Framework



Source: HM Treasury Orange Book

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## Role



## Responsibilities

- Risk owners may not be the person tasked with the assessment or management of the risk, but are responsible for ensuring the process is applied.
- Each risk must have an owner; there may be separate owners for the actions to mitigate the risks.
- Identification of who owns the following:
  - setting policy and the organisation's willingness to take risk
  - the risk process at the different levels – strategic, programme, project, operational
  - different elements of the risk process- identifying threats, to producing risk response and reporting
  - implementation of the actual measures taken in response
  - interdependent risks that cross organisational boundaries- business processes, IT systems, or projects

## The Risk Management Framework Embedding the Risk Management Culture

### Role Responsibilities

#### Risk Culture

- Awareness of and responsibility for, risk issues must be linked to key objectives
- Priorities and the relative importance of risks will shift and change, as its business and wider environment does
- Regular revisit assumptions about risk, perhaps by annual review of the risks associated with each key organisational objective.

#### Risk Identification

- High level risk focuses on recognising and identifying the key risks to successful achievement of organisational objectives.
- At a lower level it detail at the risks affecting programmes, projects and operational services.
- Identified risks are usually held in a 'risk register' or 'risk log'

### Role Responsibilities

#### Risk Evaluation

- Assessing probability and impact of individual risks, taking into account interdependencies or factors outside immediate scope:
  - ✓ evaluated probability of a particular outcome actually happening
  - ✓ impact is the evaluated effect or result of a particular outcome actually happening.
- Financial risk can be evaluated in numerical terms; adverse publicity can only be evaluated in subjective ways, with the help of a framework:

Probability	Criteria
Very Low	0–5% (Extremely unlikely, or virtually impossible)
Low	6–20% (Low but not impossible)
Medium	21–50% (fairly likely to occur)
High	51–80% (More likely to occur than not)
Very high	>80% (Almost certainly will occur)

## The Risk Management Framework

### Role Responsibilities

#### Risk Tolerance

- To establish optimum balance of a risk occurring against the costs and value of limiting that risk.
- Organisation's overall tolerance of exposure to risk as well as a view of individual risks.
- senior managers can then decide on risk tolerance levels for individual projects.
- These tolerance levels dictate when information about risk has to be referred upwards.

#### Risk Response

- Responses to risk can be to:
  - transfer some aspects of the risk
  - tolerate the risk
  - treat the risk
  - terminate the risk
- The risk response process should involve identifying and evaluating a range of options and implementing risk management

Approach to risk reduction	Summary
Eliminating or avoiding	Changing goals, or choosing alternative approaches
Risk sharing	Sharing risks in part or full with another who could be involved solely
Reducing the probability	Changing approach identifying causal links between threat and impact, and intervening to mitigate occurrence
Reducing the consequences	Developing contingency plans, even if other steps have been taken

### Role Responsibilities

#### Assurance & Review

- To enable upward reporting about how risk management is being achieved.
- Owned by and report to, the Accounting Officer.
- Regular reporting to keep risk and control procedures in line with business need.
- Make provision for Internal Audit, to provide independent assurance about how well risk is managed

- When actions have been taken to respond to risks, the full range of risks must continue to be monitored.
- Common approaches to monitoring responses to risk includes risk registers (risk log):

Risk ID No.	Raised By + Date	Description	Impact	Probability	Pos. Response	Target Date	Owner	Action
			VL, L, M,		VL, L, M,			
			H, VH		H, VH			
			Time	Cost	Quality			
1			L	L	M	VL		
3			H	M	M	M		
4			H	L	VH	H		



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# Tools & Techniques - Risk Intelligence Map?



## Deloitte's Enterprise Value Map™ (EVM)

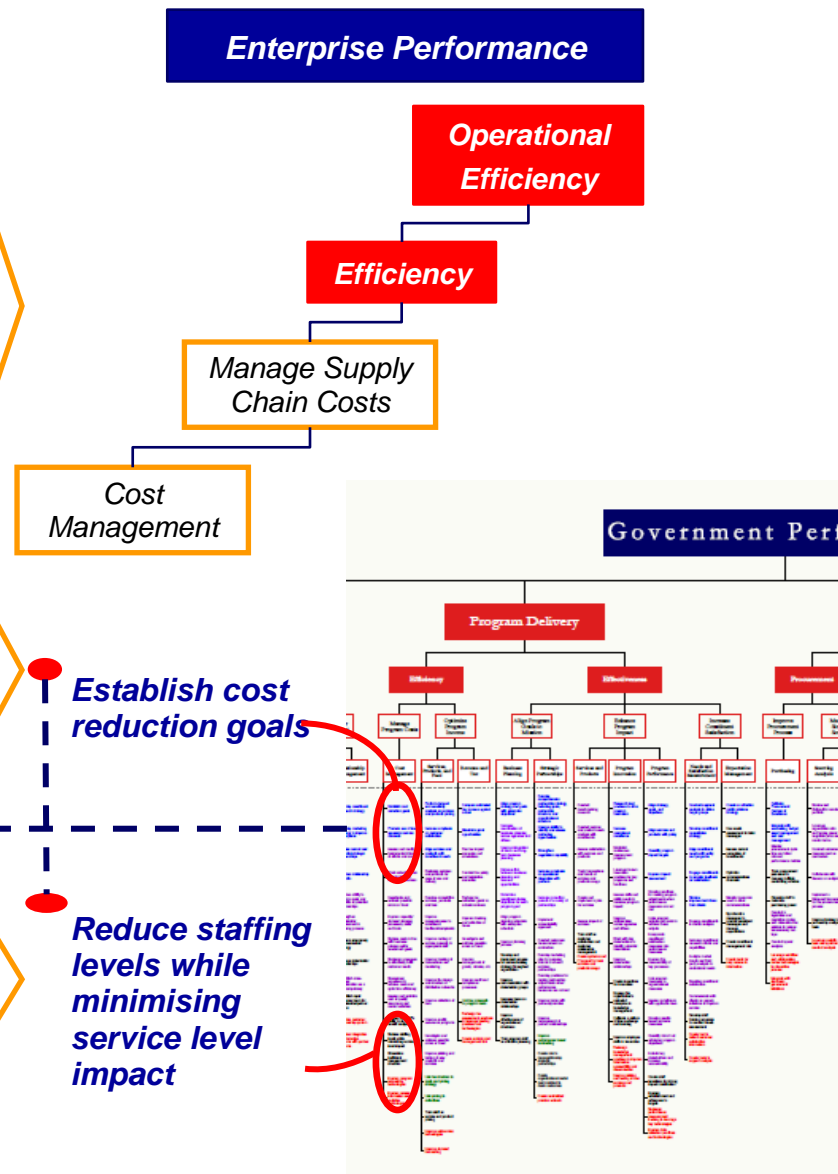
The EVM can be used to identify core value drivers for the business activities, current and potential actions deployed to enhance shareholders' values. We utilize the EVM to map client strategies, financial performance, issues and projects . . . and identify gaps which introduces risks

This is complemented with the Risk Intelligence Map in identifying key risks that hinder the value drivers, strategies, initiatives and operations of the entity.

How Value is Created (Value Driver)

Change What You Do (Strategy)

Do What You Do Better (Tactics)

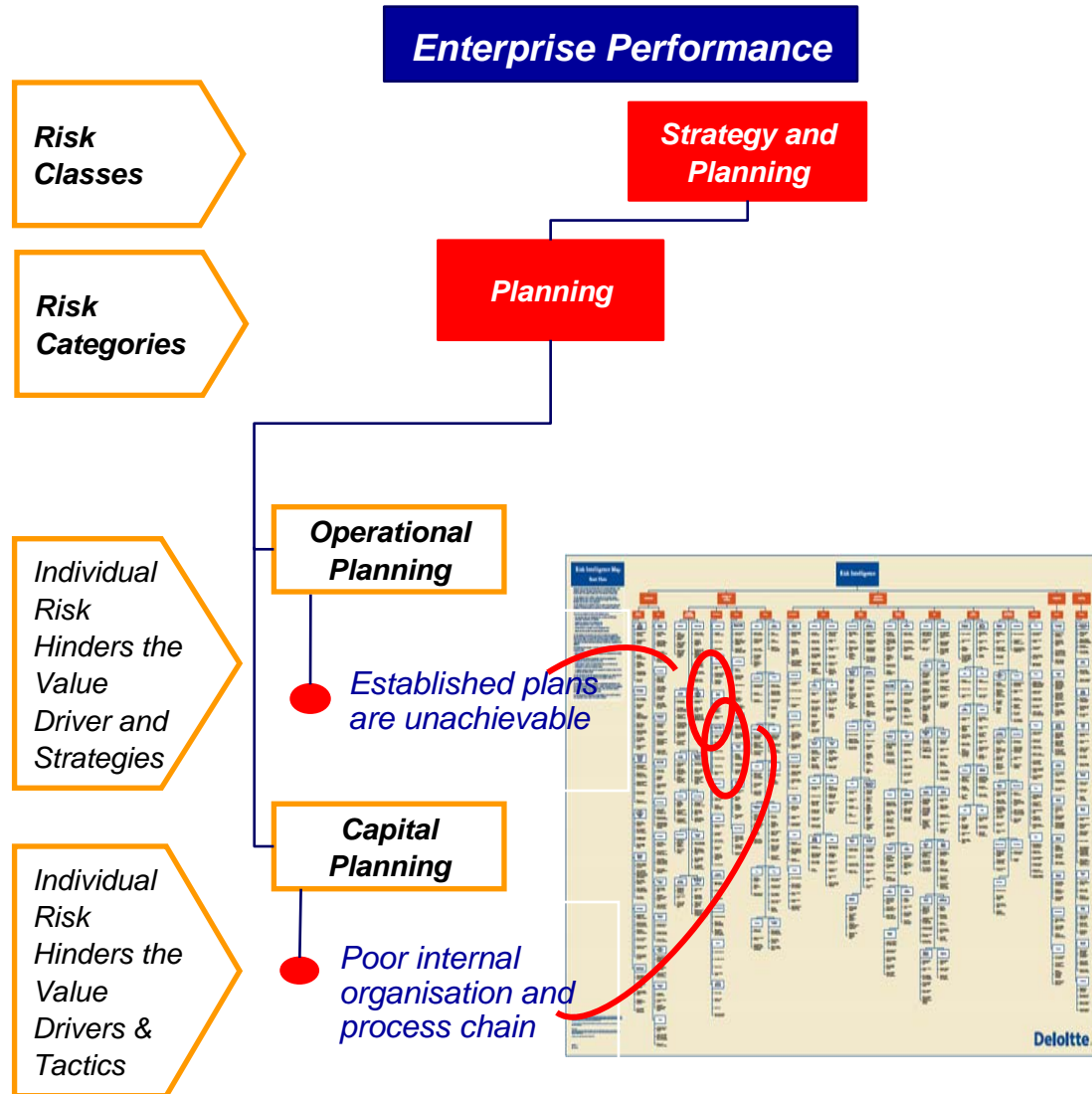




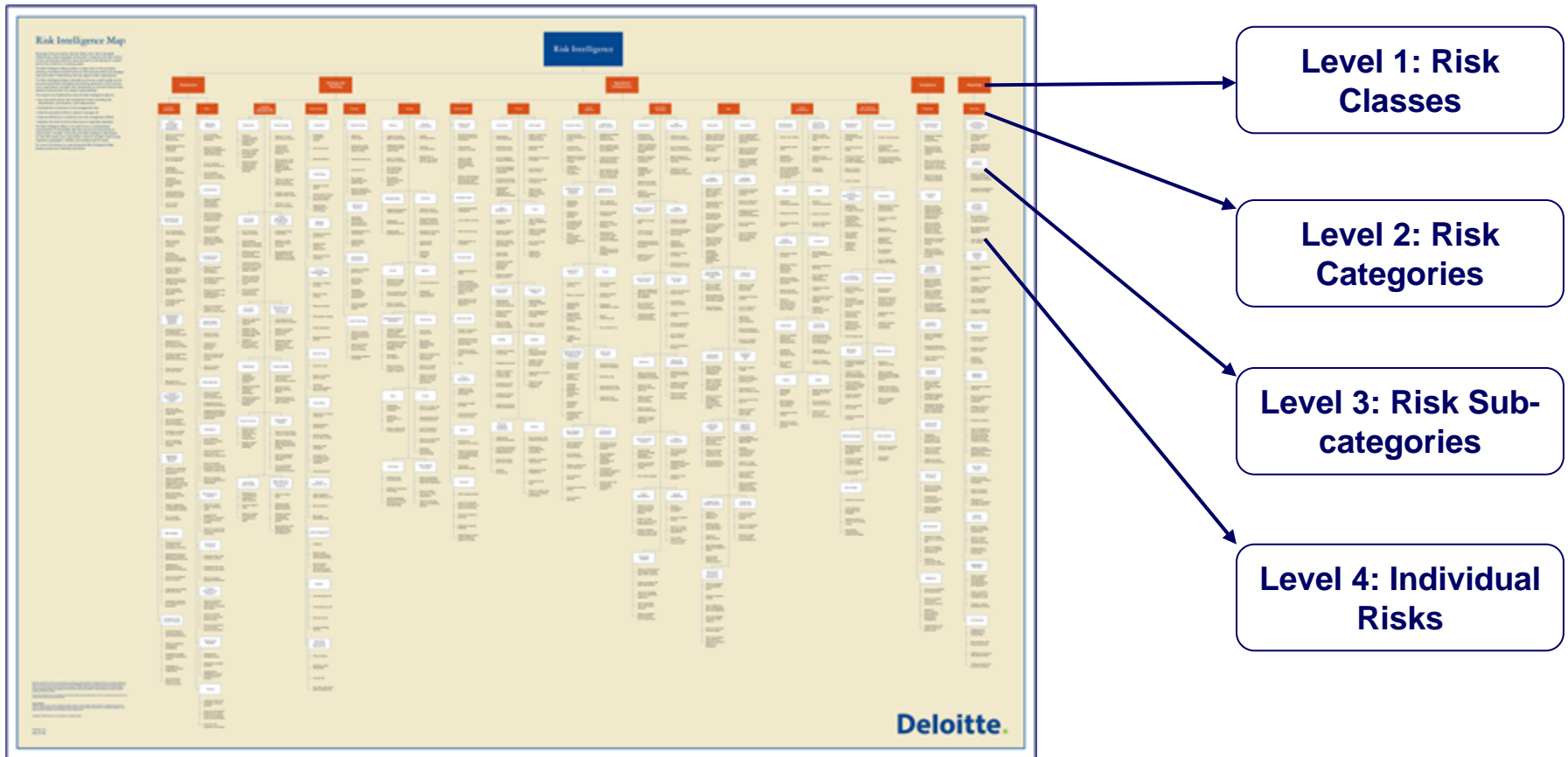
**Deloitte Risk Intelligence Map™ (RI Map)**

*The RI Map can be used to identify, understand and manage risks embedded in processes, activities and company.*

*This tool can be used to gain in-dept views of the business activities / operations and provide value-adding services to the organisation.*



## Snapshot of the Risk Intelligence Map





## Why use the Risk Intelligence Map?

The Risk Intelligence Map can help an organization:

- Promote critical thought on overall risk exposure
- Promote exploration of the various impacts risks can have
- Identify potential risk interactions
- Prioritize risk mitigation
- Identify and coordinate risk management silos
- Make risk-based strategic decisions

## How to use the Risk Intelligence Map



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## Opportunities to use the Risk Intelligence Map

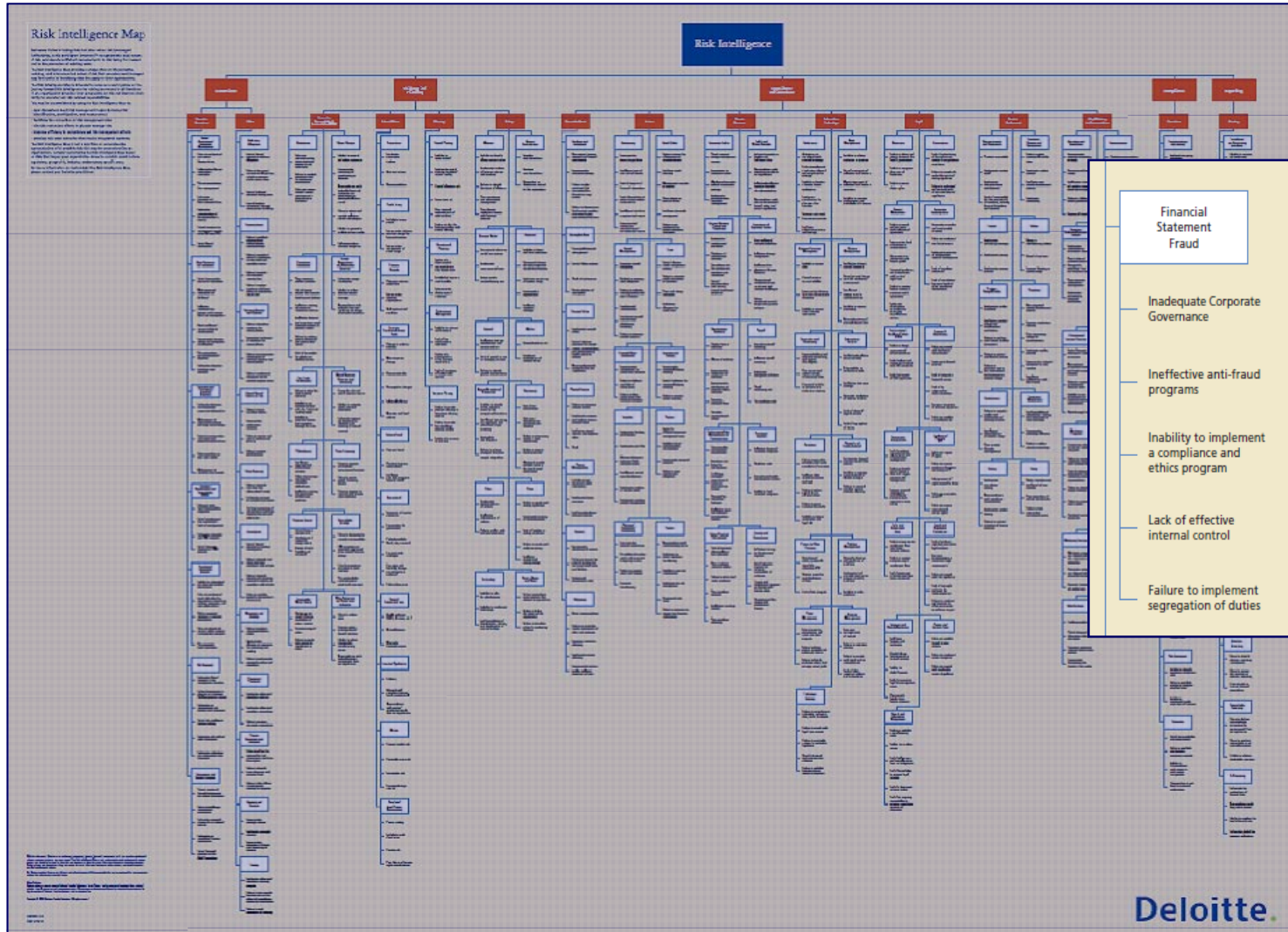
### At the CxO level

- Understand their pervasive risk issues
- Help us gain access to the diverse buyers
- Increase the client's appreciation of our understanding of managing risk

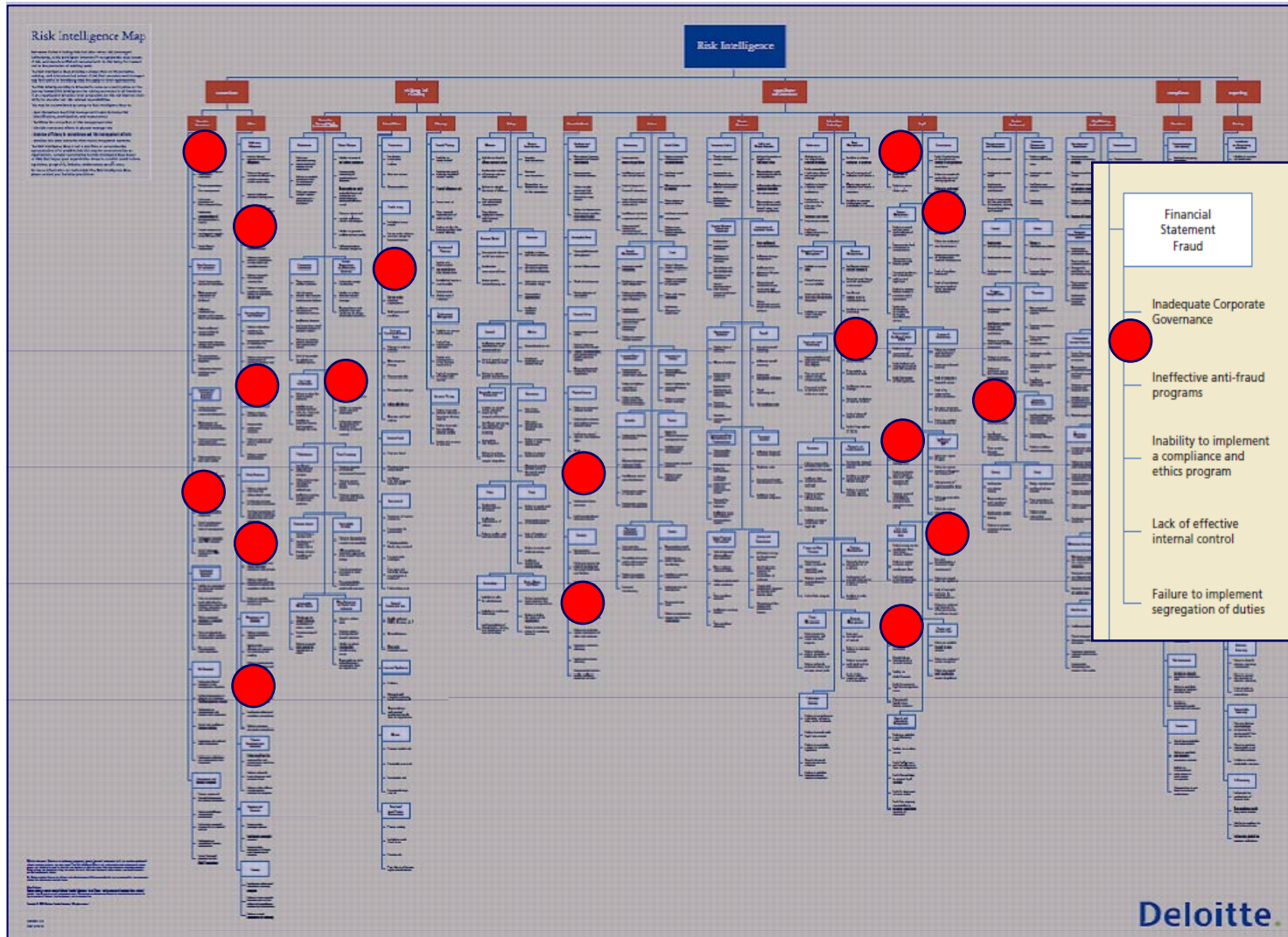
### Below CxO level

- Focus on key business risk issues
- Become an advisor to managers

## Information in the Risk Intelligence Map – Fraud



## Information in the Risk Intelligence Map – Fraud





## How to use the Risk Intelligence Map: Illustrative scenarios

The Risk Intelligence Map can be used in many ways, including:

- Scenario 1: Understand clients' strategies/ issues and conduct conversations to identify and manage risk
- Scenario 2: Demonstrate to the client how risks interact in an organization
- Scenario 3: Identify key individual risk owners and demonstrate how to break down silos

### ***What***

- Understand organizations strategies/ issues and conduct conversations to identify and manage risk

### ***How***

*This objective may be achieved by:*

- Utilize Deloitte's Market Intelligence tool to identify client and competitor goals and disclosed risks
- Identify risks to the client's goals on the Risk Intelligence Map
- Engage the client to identify what is being done to mitigate those risks
- Identify competitor's disclosed risks and legal filings on the Risk Intelligence Map
- Engage the client to see if they are experiencing similar risks as competitors, and what is being done to mitigate those risks

### ***Tools and Resources***

[Market Research for Client Risk Profile](#)

[Risk Intelligence Whitepaper series](#)

[Risk Intelligence Framework](#)

### **What**

- Demonstrate how risks interact in the organization

### **How**

*This objective may be achieved by:*

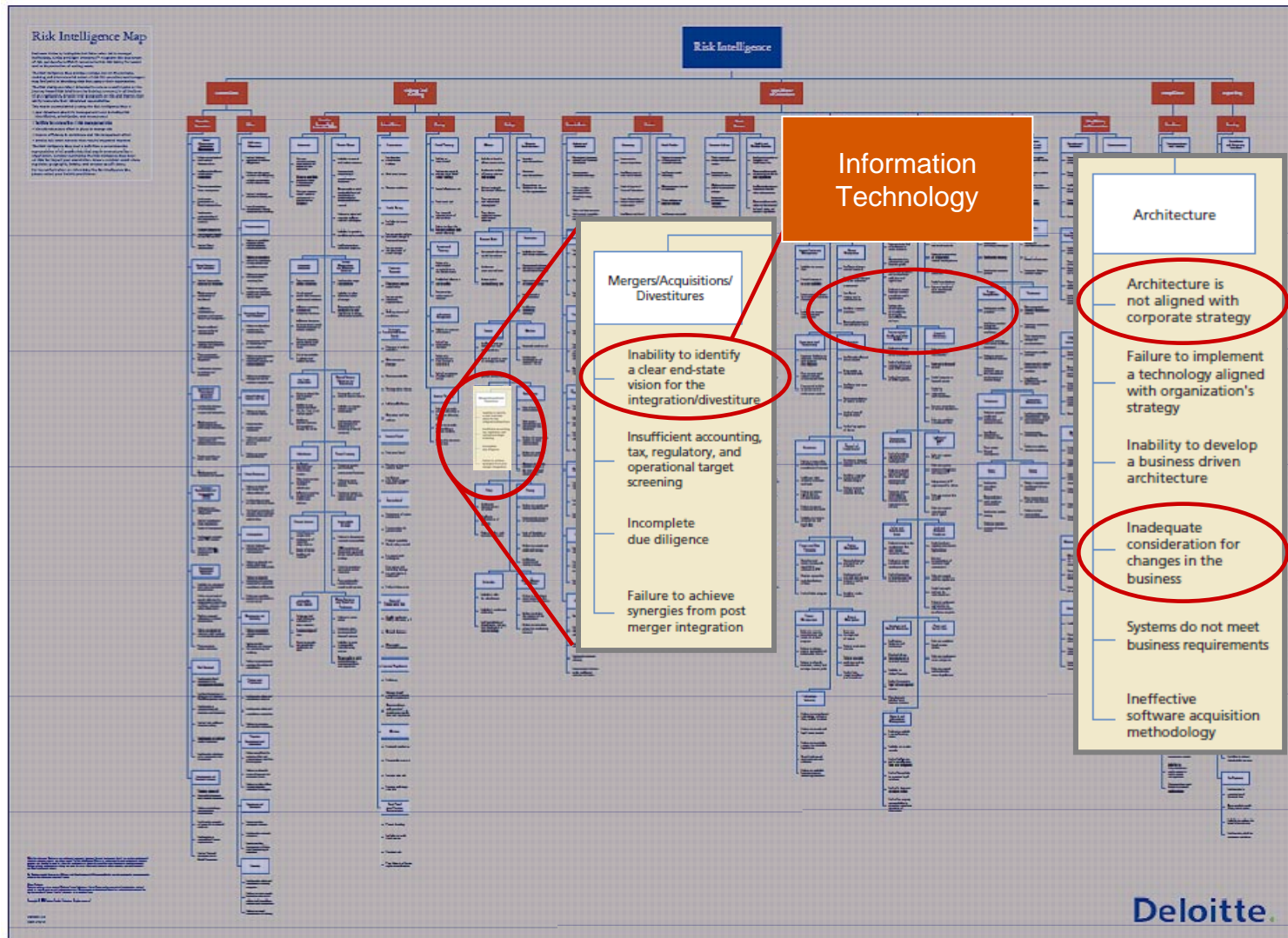
- Leverage the organization's most recent risk assessment to identify the risks of highest concern
- Identify where these risks may be represented on the Risk Intelligence Map (they may either be present on the Map, or you can identify the Category and Sub-category where they would reside)
- Link risks together in an example conversation
- Discuss exposure to newly identified risks, and how those risks can be mitigated

### **Tools and Resources**

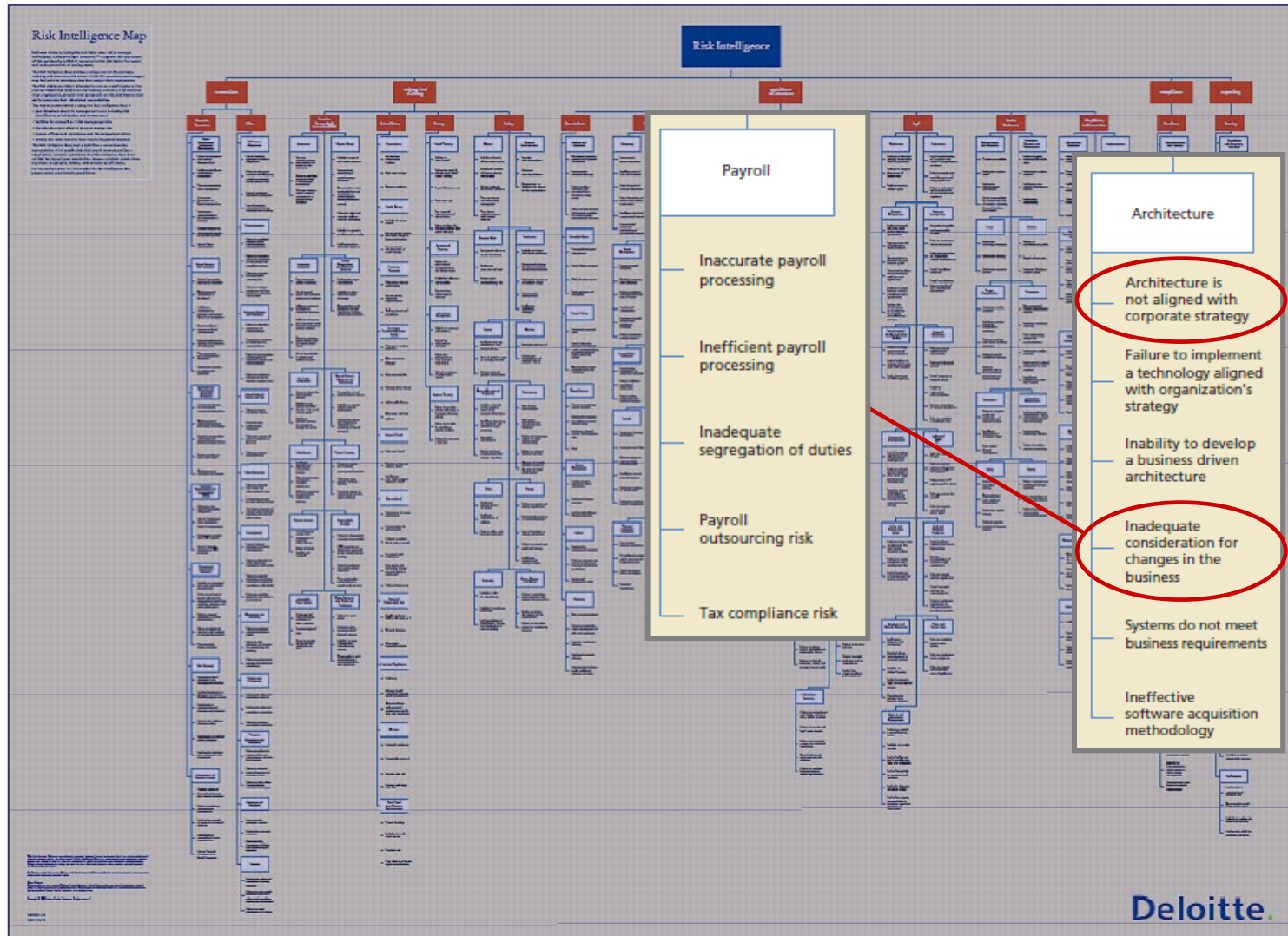
Risk Intelligence Map Detail (for internal use only)

[Risk Intelligence Whitepaper series](#)

[Risk Intelligence Framework](#)



## Scenario 2 - Example



### ***What***

- Identify key individual risk owners and demonstrate how to break down silos

### ***How***

*This objective may be achieved by:*

- Leverage the client's most recent risk assessment to identify the risks of highest concern
- Identify where these risks may be represented on the Risk Intelligence Map (they may either be present on the Map, or you can identify the Category and Sub-category where they would reside)
- Discuss with the client who is managing the identified risks
- Identify what risk management activities are taking place in these areas (e.g., separate risk assessments)
- Engage the different risk owners to discuss where they can combine efforts to manage the various risks

### ***Tools and Resources***

[Risk Intelligence Map Website](#)

[Risk Intelligence Whitepaper series](#)

[Risk Intelligence Framework](#)

When to do it?

Factors	Description
<p><i>When to do it</i></p>	<p>Risk management activities should be triggered when:</p> <ul style="list-style-type: none"> <li>identifying, reviewing, agreeing and setting corporate/departmental objectives</li> <li>assessing and choosing options for implementation of strategic initiatives</li> <li>Formulating or reviewing business cases to support future strategies</li> <li>testing the underlying assumptions within the business case or proposed strategies</li> <li>formally instigating, approving or reviewing programmes and operational activities</li> <li>Indication that changes in external factors, such as political or financial issues could affect the strategy, mission, objectives and goals</li> <li>there have been changes identified to stakeholder involvement</li> <li>an unforeseen event occurred, having an impact on the corporate objectives</li> <li>making key acquisition decisions e.g. at the start of a new acquisition lifecycle.</li> </ul>

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