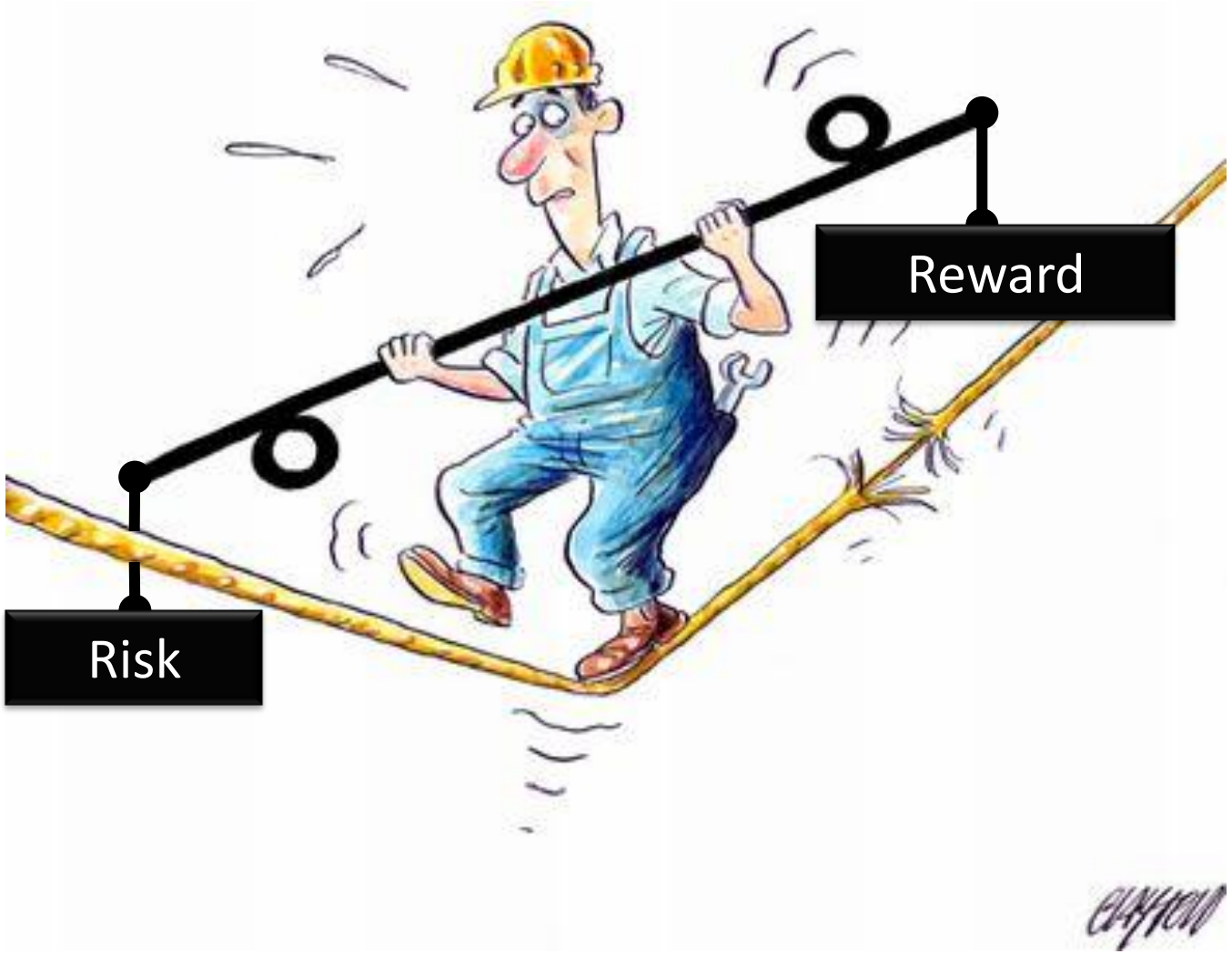
Attitudes in maintenance towards excellence :PAS55- 1 2008

by Dean Griffin

How do we achieve optimised asset contribution

While Managing the Risks



Sustainably

What is PAS55-2008?

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Some History

- Developed through an inclusive and internationally consultative approach.
- Proceeded through 10 publically commented drafts
- Input globally derived
- Holistic view of asset management.
- Interfaced with ISO 9000, ISO 14000 and OHSAS 18001

PAS55-1 2008

- Publicly Available Specification No 55 2008 edition *(PAS 55:2008)*
- Released by the British Standards Institution (BSI)
- In process of being incorporated into an ISO standard.
  - ISO 55000 Asset management – Overview, principles and terminology
  - ISO 55001 Asset management – Management systems - Requirements
  - ISO 55002 Asset management – Management systems - Guidelines on the application of ISO 55001
- The development of PAS 55 led by the IAM UK
- PAS 55:2008 is applicable to any organization where physical assets are key or a critical factor in achieving its business objectives and effective service delivery

Key Asset Management Definitions

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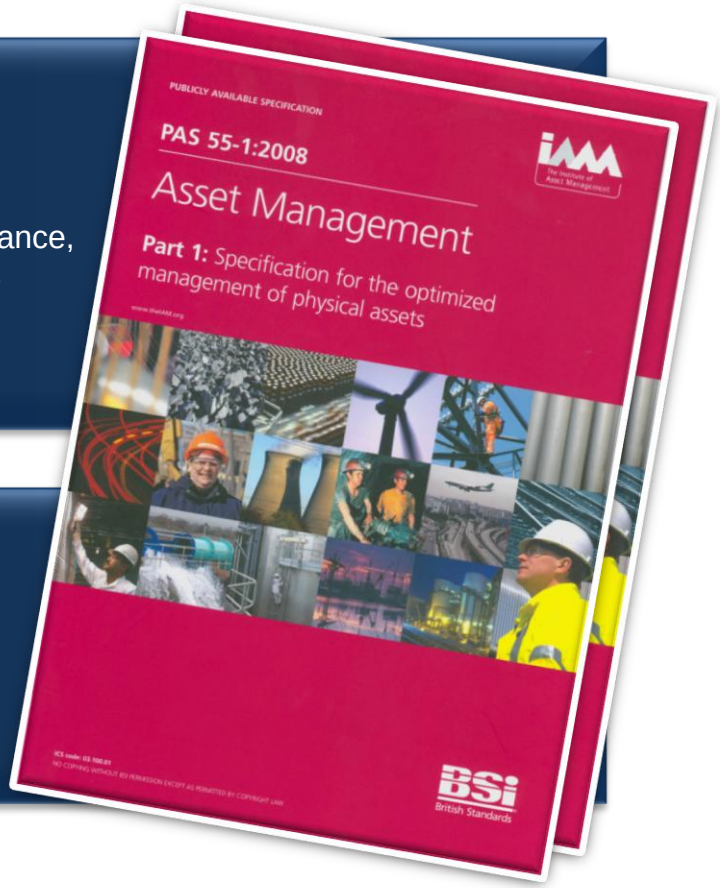
Physical Asset Management

systematic and coordinated activities and practices through which an organization optimally manages its assets, and their associated performance, risks and expenditures over their lifecycle for the purpose of achieving its organizational strategic plan

Organizational Strategic Plan

overall long-term plan for the organization that is derived from and embodies its vision, mission, values, business policies, stakeholder requirements, objectives and the management of its risks



What is PAS 55?

PAS 55 is the British Standards Institution's "Publicly Available Specification" for the optimized management of physical assets and infrastructure - it provides clear definitions and a 21-point requirements specification for joined-up, optimized and whole-life asset management systems

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Key Principles of Asset Management

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Business Context of PAS55

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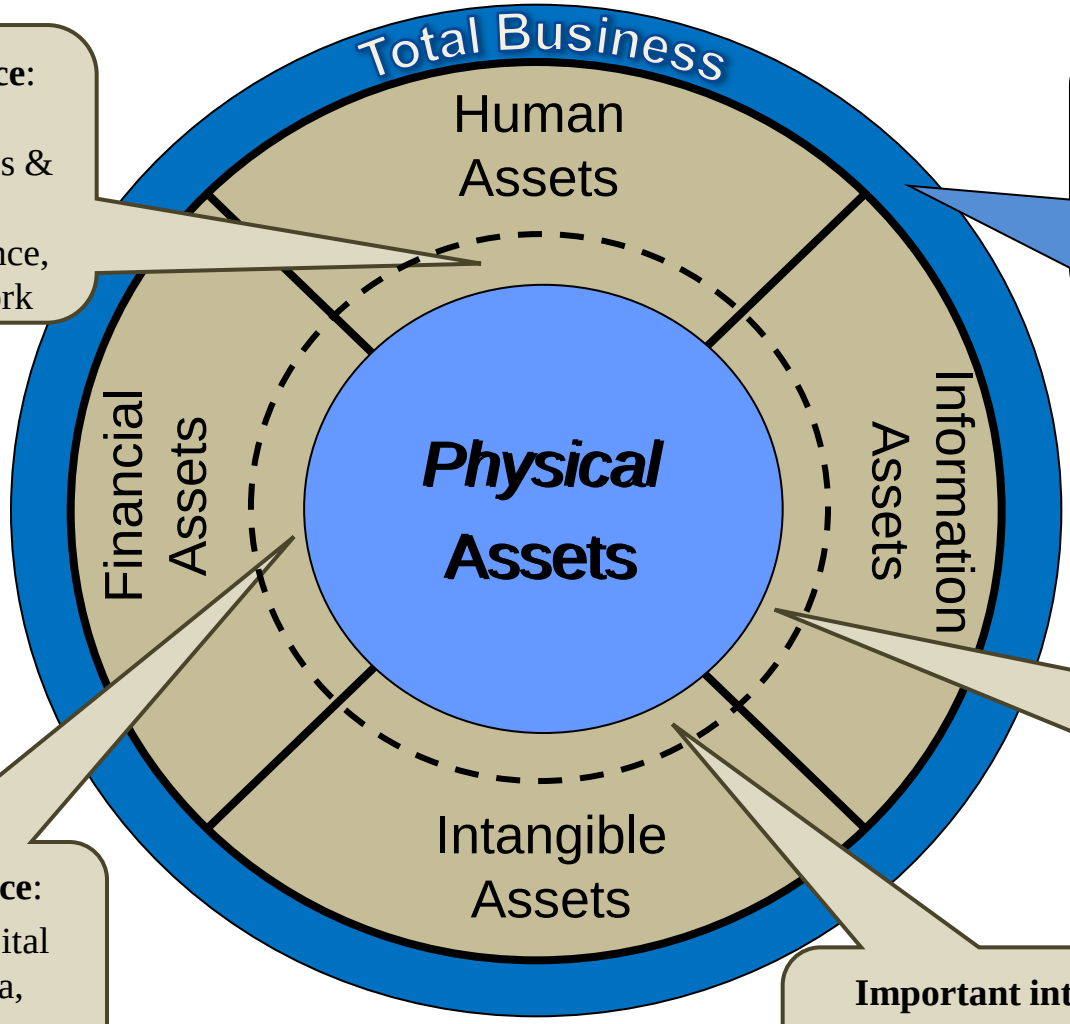

Important interface: motivation, communication, roles & responsibilities, knowledge, experience, leadership, teamwork

Vital context: business objectives, policies, regulation, performance requirements, risk mgmt.

Important interface: condition, performance, activities, costs & opportunities

Important interface: life cycle costs, capital investment criteria, operating costs

Important interface: reputation, image, morale, constraints, social impact

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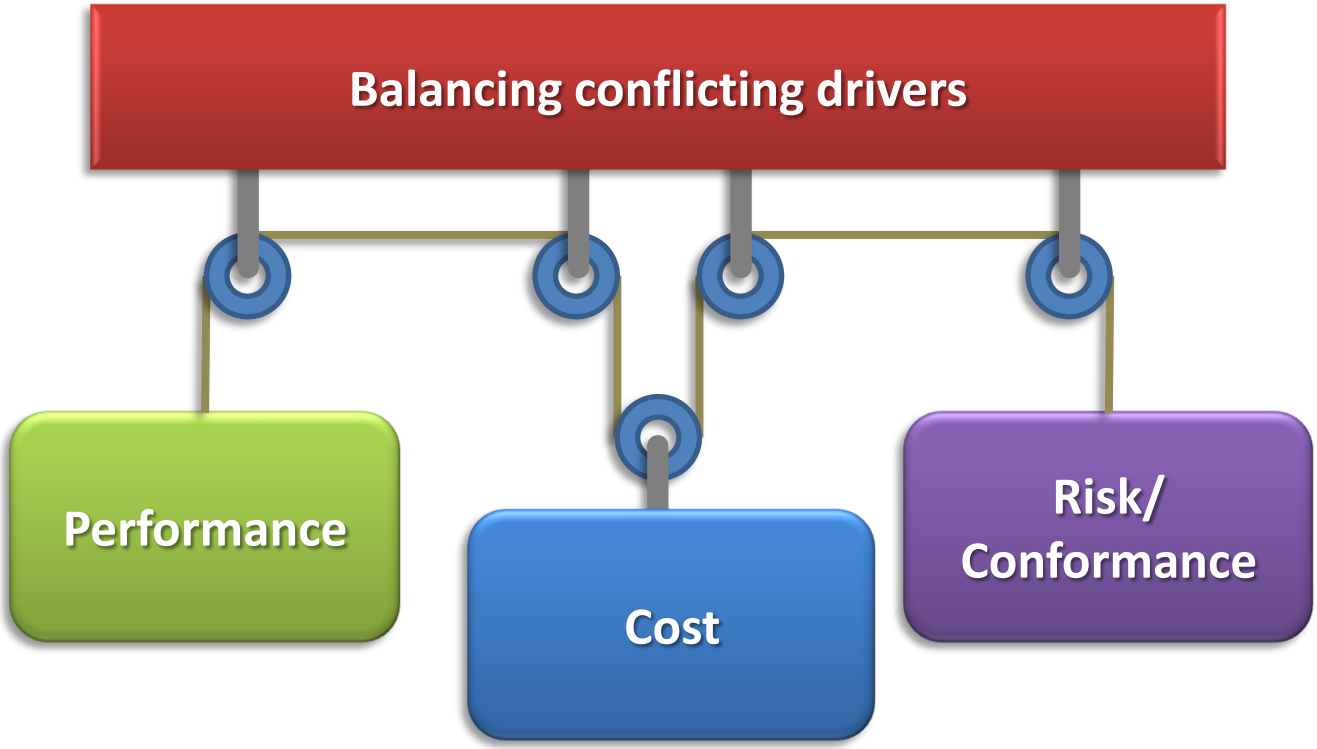
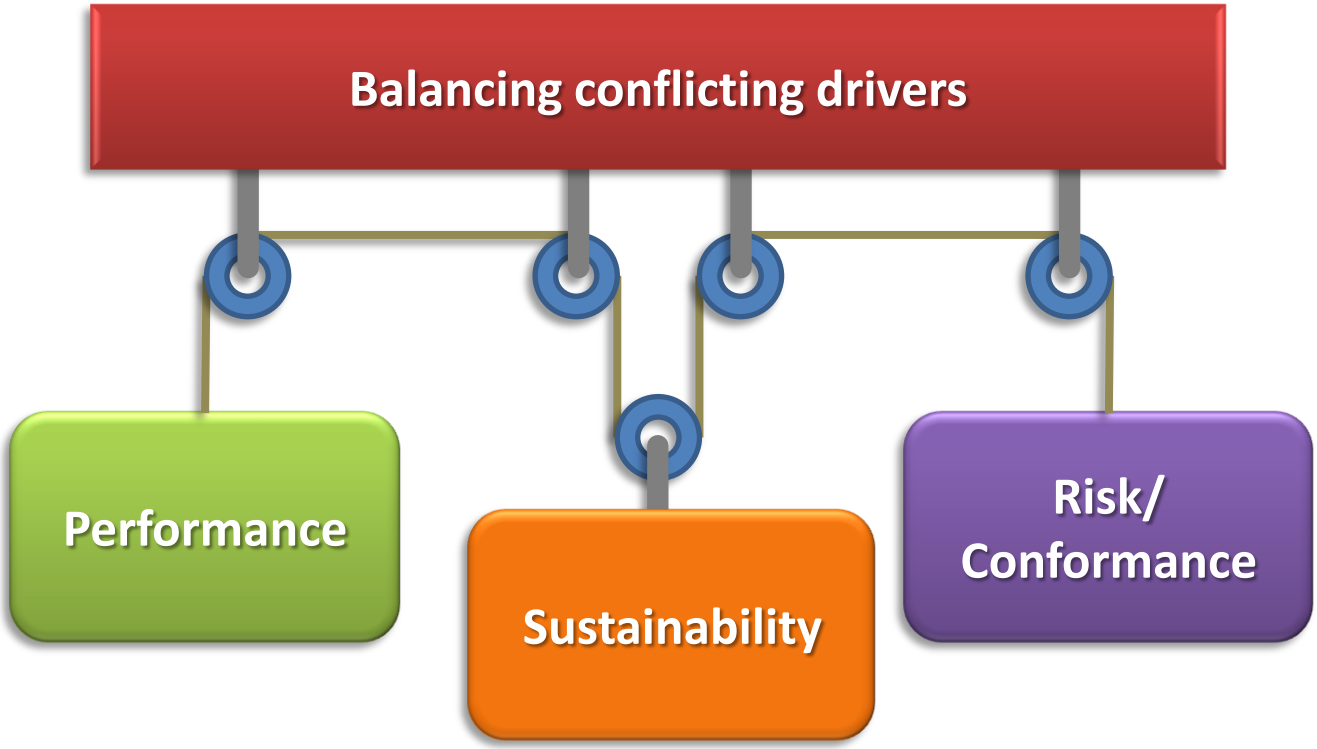
Business Drivers - Traditional

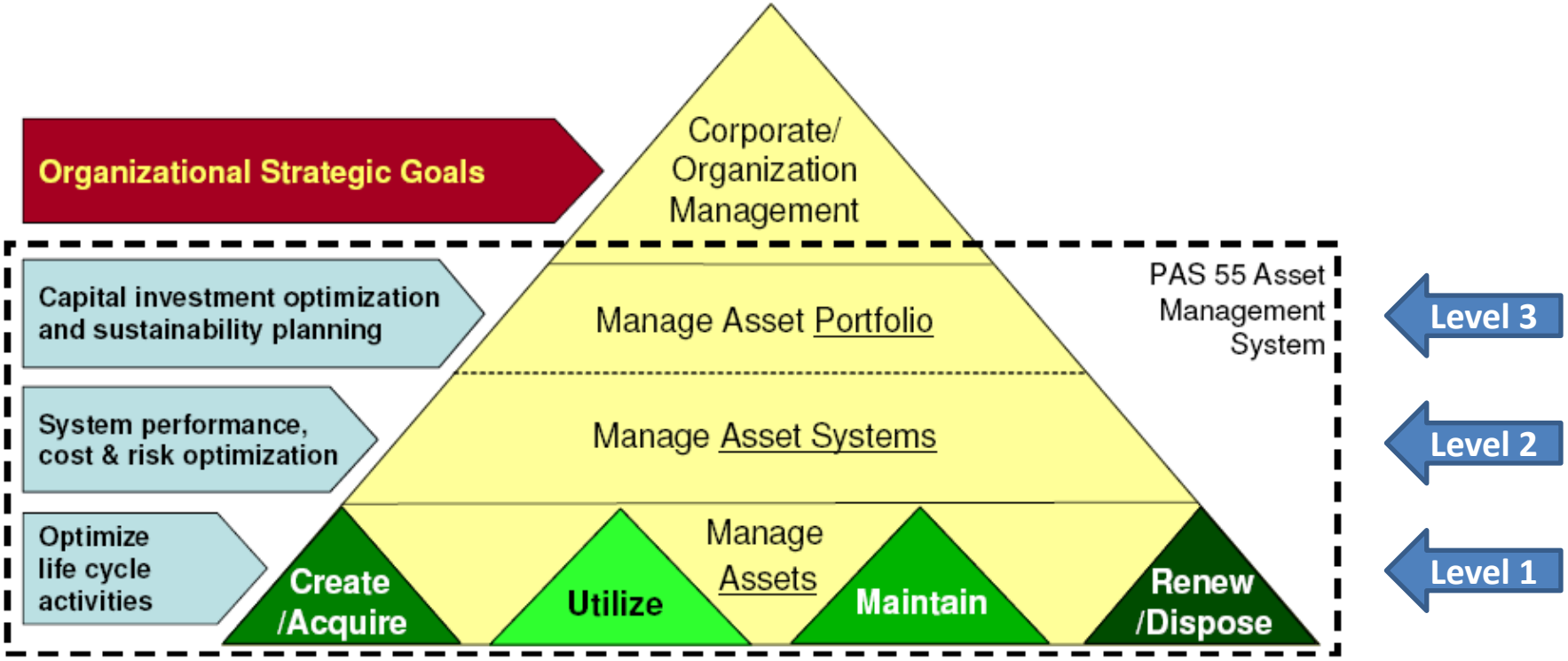


Business Drivers – Future Normal



PAS55 - Levels

Figure 1 - Levels of asset management and scope of PAS 55



Conformance vs Performance

Conformance

- Requirement against a standard
- Preventing value from slipping.
- Passive activity
- Doesn't enforce improvement
- Implies at times a minimum requirement
- Mandated

Performance

- Recognised accomplishment
- Implies an advance
- Exceeded a standard
- Implies achievement
- Creating and enhancing value
- Driven by a quest for improvement / getter better/ excellence

Success

&

Failure

House of Representatives letter to Tony Hayward regarding the BP Gulf of Mexico Oil Spill

The Committee's investigation is raising serious questions about the decisions made by BP in the days and hours before the explosion on the Deepwater Horizon. On April 15, five days before the explosion, BP's drilling engineer called Macondo a "nightmare well." In spite of the well's difficulties, BP appears to have made multiple decisions for economic reasons that increased the danger of a catastrophic well failure. In several instances, these decisions appear to violate industry guidelines and were made despite warnings from BP's own personnel and its contractors. In effect, it appears that BP repeatedly chose risky procedures in order to reduce costs and save time and made minimal efforts to contain the added risk.

Conclusion

The Committee's investigation into the causes of the blowout and explosion on the Deepwater Horizon rig is continuing. As our investigation proceeds, our understanding of what happened and the mistakes that were made will undoubtedly evolve and change. At this point in the investigation, however, the evidence before the Committee calls into question multiple decisions made by BP. Time after time, it appears that BP made decisions that increased the risk of a blowout to save the company time or expense. If this is what happened, BP's carelessness and complacency have inflicted a heavy toll on the Gulf, its inhabitants, and the workers on the rig.

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LON:BP

Finance

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Vol. 28.12M EPS -0.05

BP 414.80 0.84%

Historical prices

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Recent quotes

		chg | %
BP	414.80	0.84%
BP	38.59	-0.23%

Sign in to create portfolio

Compare: Enter ticker here Add ☐ FTSE 100 ☐ BP ☐ CVX ☐ XOM ☐ FP ☐ COP ☐ RDSA ☐ BG ☐ SU

Zoom: 1d 5d 1m 3m 6m YTD 1y 5y 10y All

Nov 06, 2009 - Sep 21, 2010 -170.5 (-29.04%)

Settings | Plot feeds | Technicals | Link to this chart

Related companies Show: Most Recent Annual

				Valuation
	Company name	Price	Change	Chg %
BP	BP plc	414.80	+3.45	0.84%
BP	BP plc (ADR)	38.59	-0.09	-0.23%
CVX	Chevron Corporation	79.75	-0.15	-0.19%

Done

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BP Update (March 2011)

- According to a Bloomberg report citing anonymous sources, federal prosecutors are considering charging **BP managers** with **involuntary manslaughter** or seaman's manslaughter charges (a "more serious penalty of **up to 10 years**") for sacrificing **safety** for **speed** prior to the oil rig accident that **killed 11 workers** last year.

- Investigators are also combing through the Congressional testimony of the gaffe-prone former BP CEO Tony Hayward and other industry executives "to determine whether their testimony was at odds with what they knew."

- British Petroleum has said they **will pay $20 billion to settle claims** by businesses and individuals who were affected by the massive oil spill. The company has **so far paid out more than $4 billion** to settle certain claims and to pay state, local and federal governments for cleanup costs, response and losses, according to their website

Scottish Power - Outline

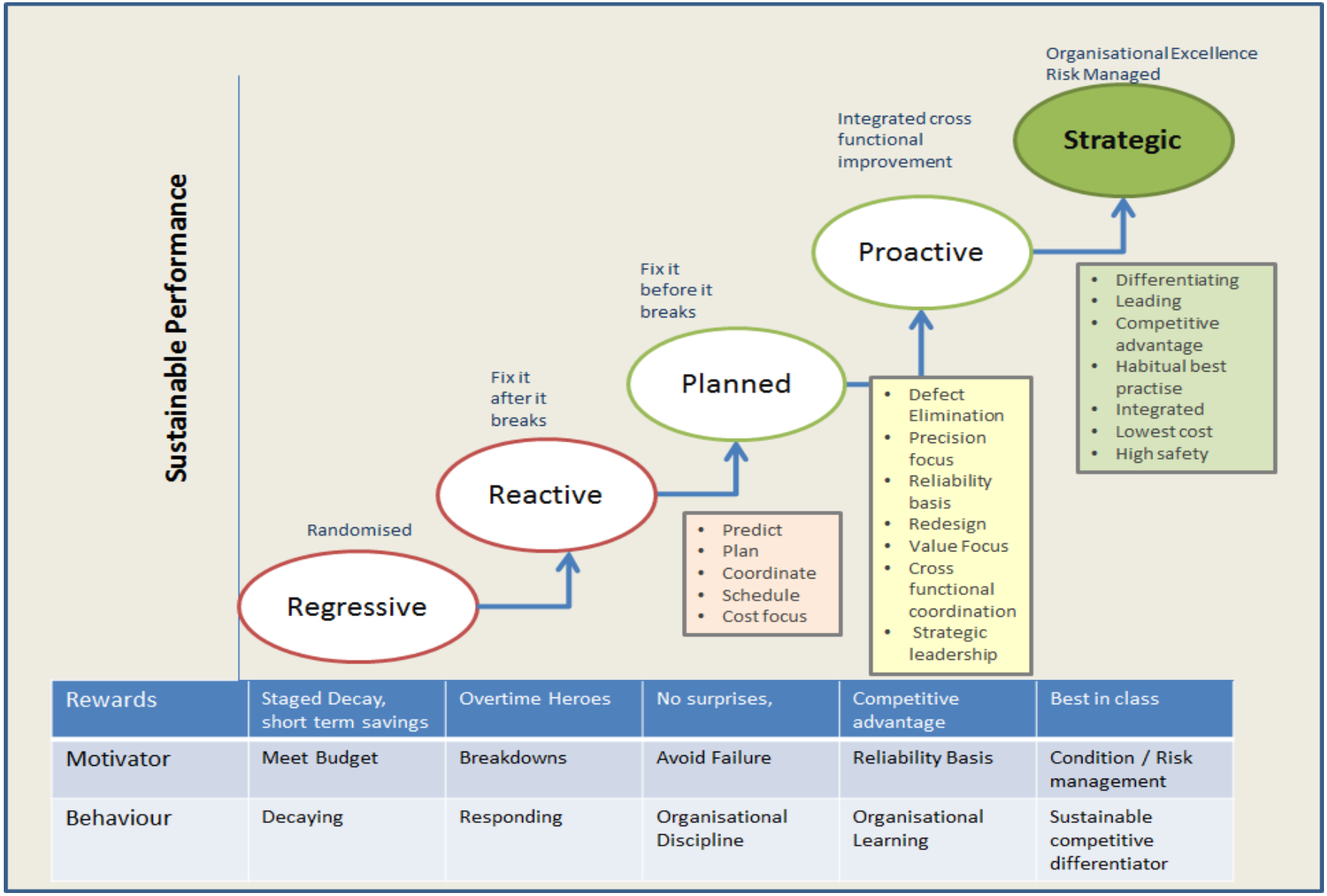
- Scottish Power's project to gain PAS55 Certification was part of larger Operational Transformation Programme which over a 2 year period saw the company realise the following benefit;
  - £2m reduction in insurance premiums,
  - 20% reduction in operation and maintenance costs,
  - 22% increase in plant availability and a
  - 25% reduction in plant forced outage rates.

- It is a very impressive project which saw Scottish Power recently awarded the IChemE awards for their Process Safety system, which is even more impressive when you consider it was an award from outside their Industry. They are also in the process of finalising a case study with the HSE which will cover the project in more detail.

Wessex Water

I led Wessex Water's journey to certification for PAS55 in 2008 and can state that the benefits realised since have included a high level buy-in to structured asset management systems, a greater awareness of risk at every level of asset management (strategic, tactical and operational) and an ability to demonstrate to our regulators that we have structured systems in place and a means of getting external surveillance and monitoring in addition to internal 'Plan-Do=Check-Act' approaches..

Steve Arthur



Rewards	Staged Decay, short term savings	Overtime Heroes	No surprises,	Competitive advantage	Best in class
Motivator	Meet Budget	Breakdowns	Avoid Failure	Reliability Basis	Condition / Risk management
Behaviour	Decaying	Responding	Organisational Discipline	Organisational Learning	Sustainable competitive differentiator

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Implementing

PAS 55:2008

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PAS 55:2008 Management system structure

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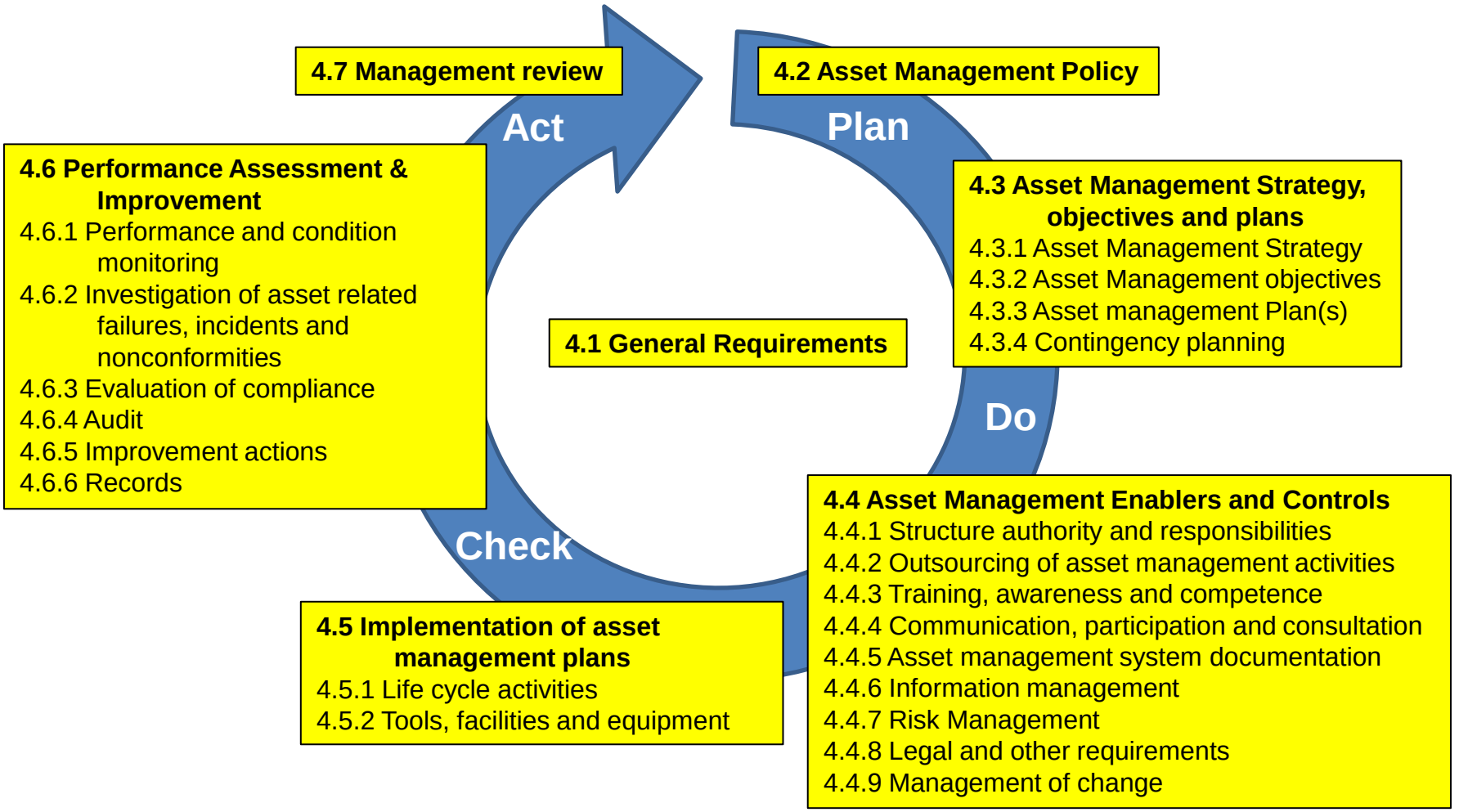

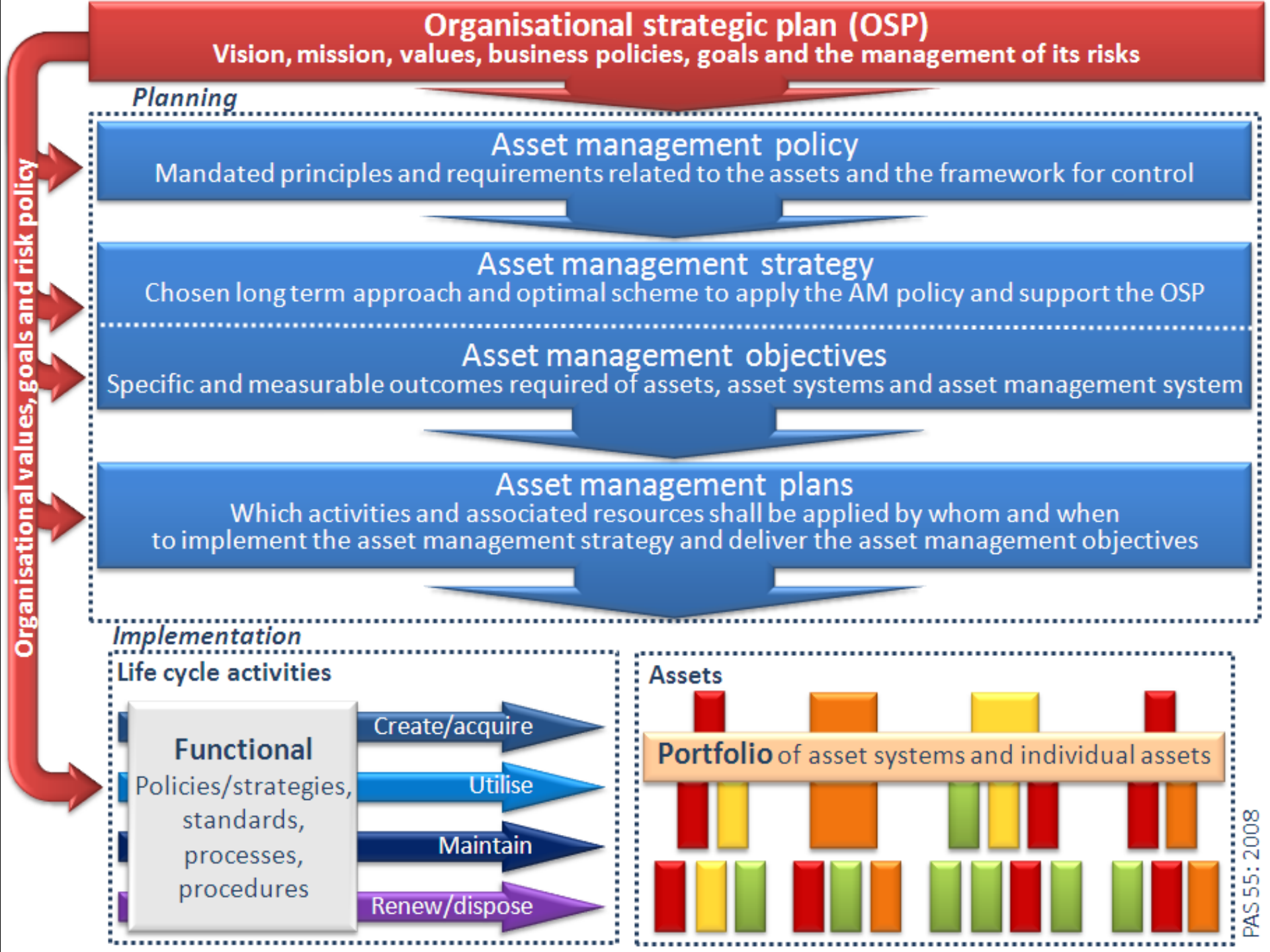
Organisational strategic plan (OSP)
Vision, mission, values, business policies, goals and the management of its risks
Planning
Asset management policy
Mandated principles and requirements related to the assets and the framework for control
Asset management strategy
Chosen long term approach and optimal scheme to apply the AM policy and support the OSP
Asset management objectives
Specific and measurable outcomes required of assets, asset systems and asset management system
Asset management plans
Which activities and associated resources shall be applied by whom and when
to implement the asset management strategy and deliver the asset management objectives
Organisational values, goals and risk policy
Implementation
Life cycle activities
Functional
Policies/strategies, standards, processes, procedures
Create/acquire
Utilise
Maintain
Renew/dispose
Assets
Portfolio of asset systems and individual assets
PAS 55: 2008

AMIP Framework

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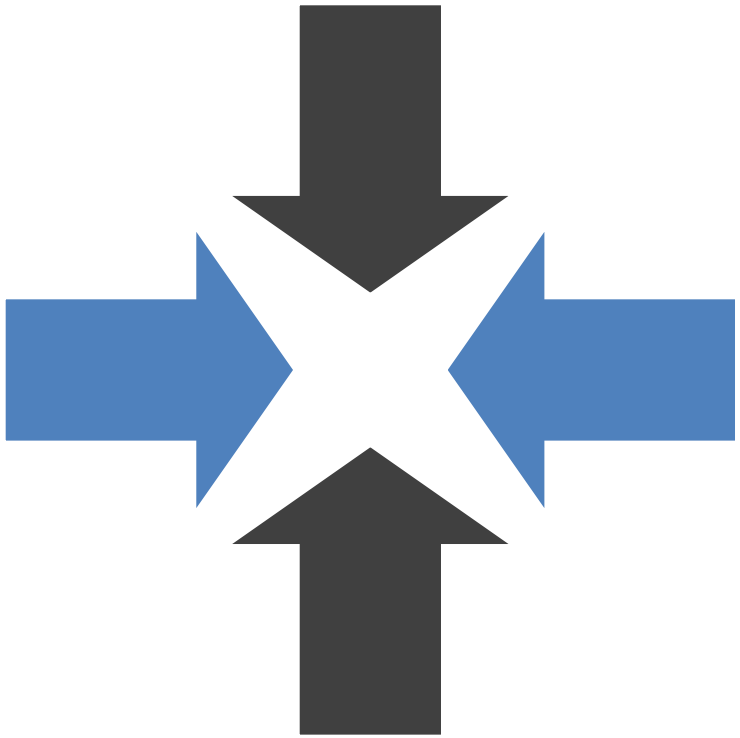
AM directional clarity

Direction, criticality & weighted objectives



AM delivery tools

What is worth doing, when (RCM, OMM, TPM, LCC etc)
How best to deliver it (EAM {On Key}, CMMS, MRP, CRM etc)

PAS 55:2008 Maturity Scale

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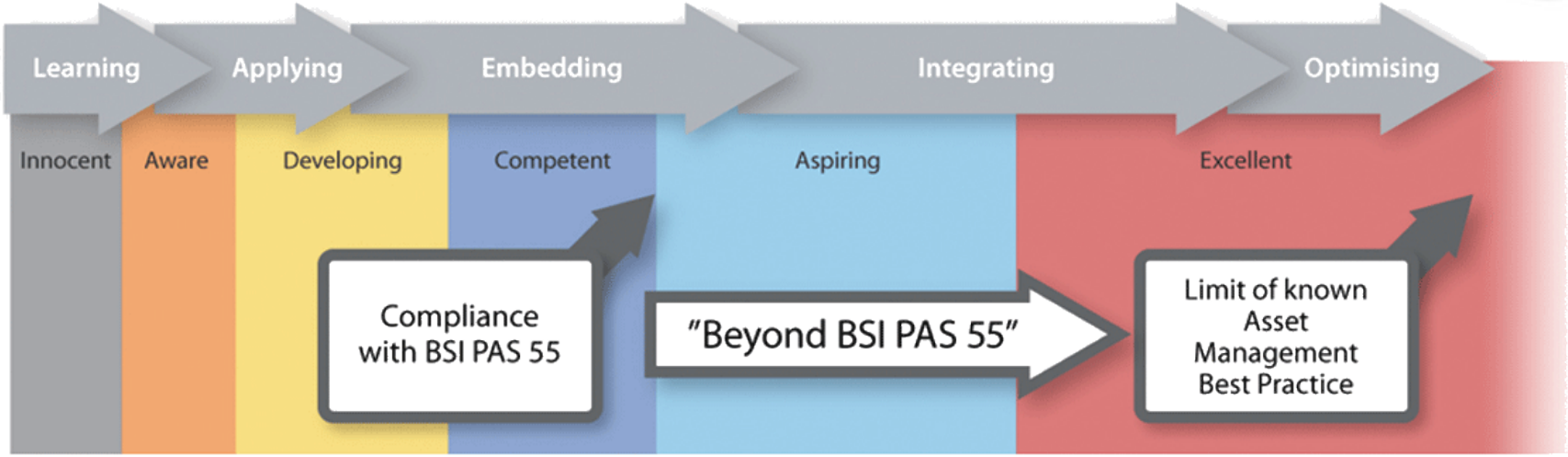
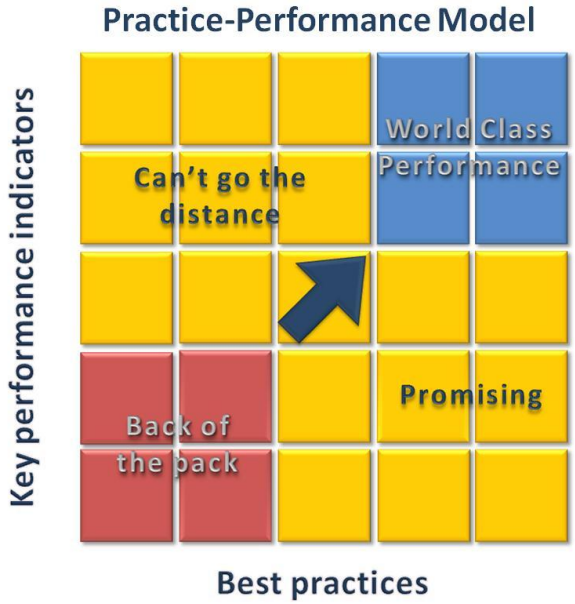


Pragma mapping of maturity



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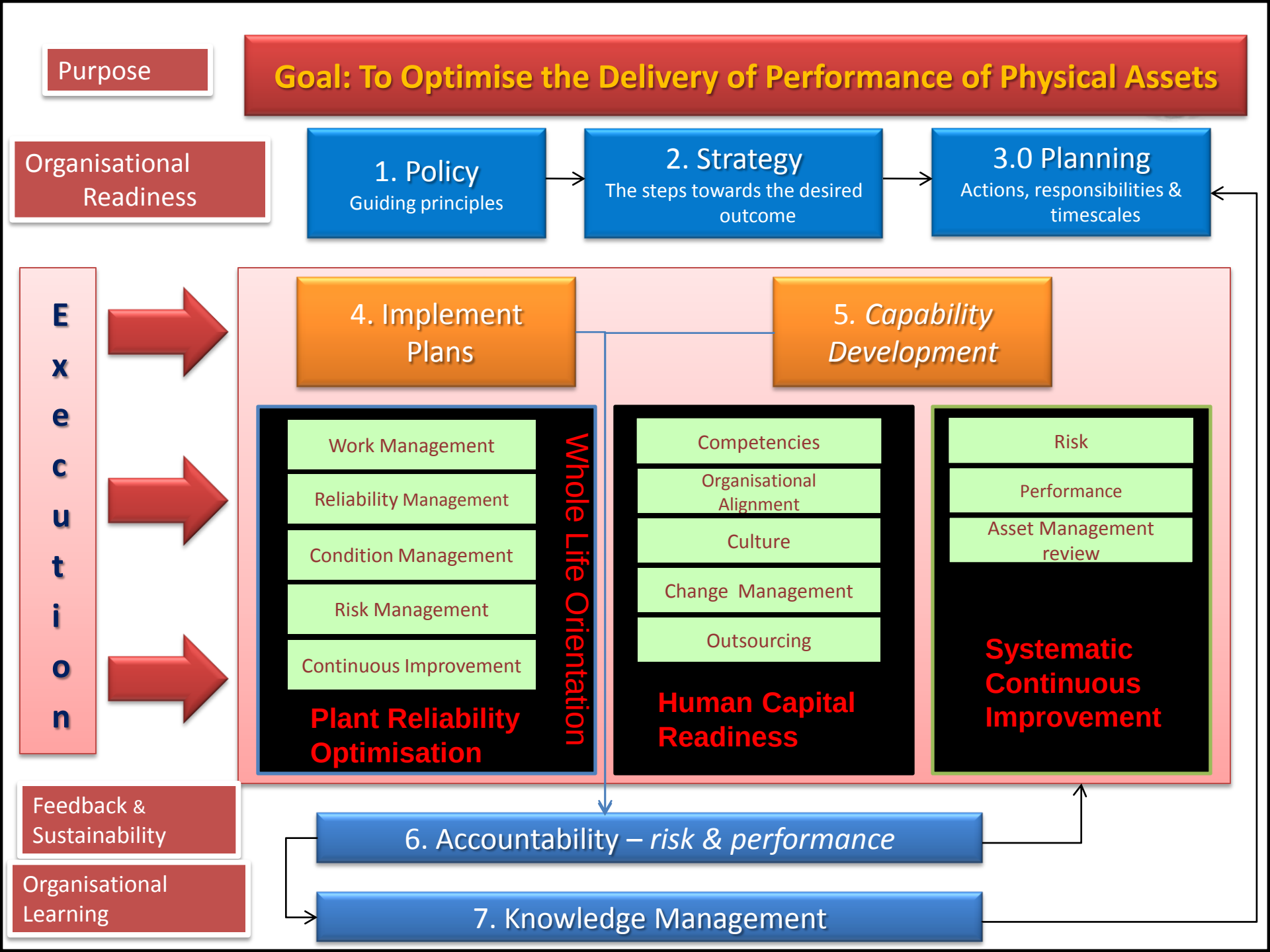
Purpose
Goal: To Optimise the Delivery of Performance of Physical Assets
Organisational Readiness
1. Policy
Guiding principles
2. Strategy
The steps towards the desired outcome
3.0 Planning
Actions, responsibilities & timescales
Execution
4. Implement Plans
5. Capability Development
Work Management
Reliability Management
Condition Management
Risk Management
Continuous Improvement
Whole Life Orientation
Plant Reliability Optimisation
Competencies
Organisational Alignment
Culture
Change Management
Outsourcing
Human Capital Readiness
Risk
Performance
Asset Management review
Systematic Continuous Improvement
Feedback & Sustainability
Organisational Learning
6. Accountability – risk & performance
7. Knowledge Management

Implementation Methodology – Operational Excellence model

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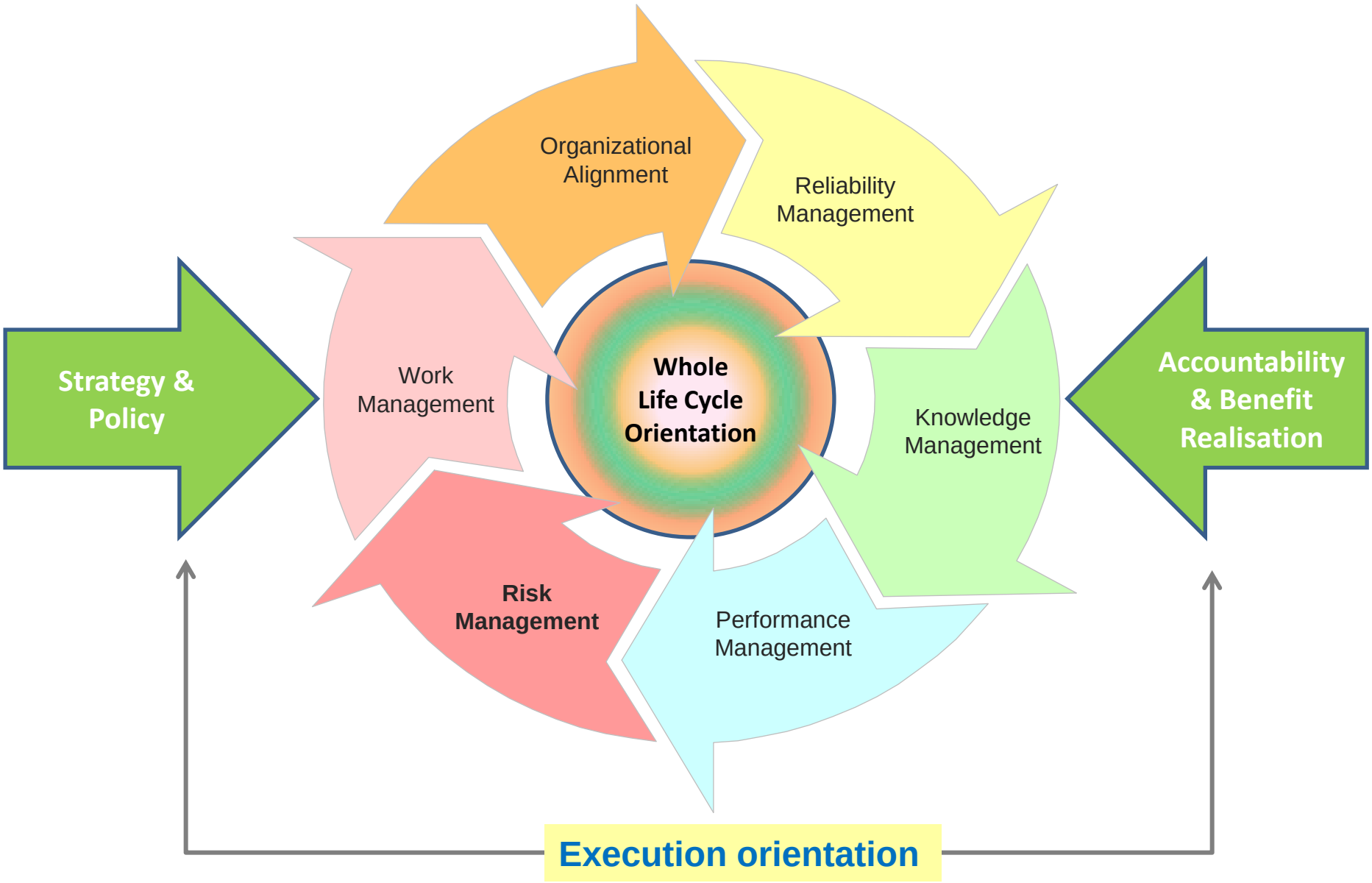

Lets look at 4.4.7 Risk Management

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Various risk assessments at different levels of asset management

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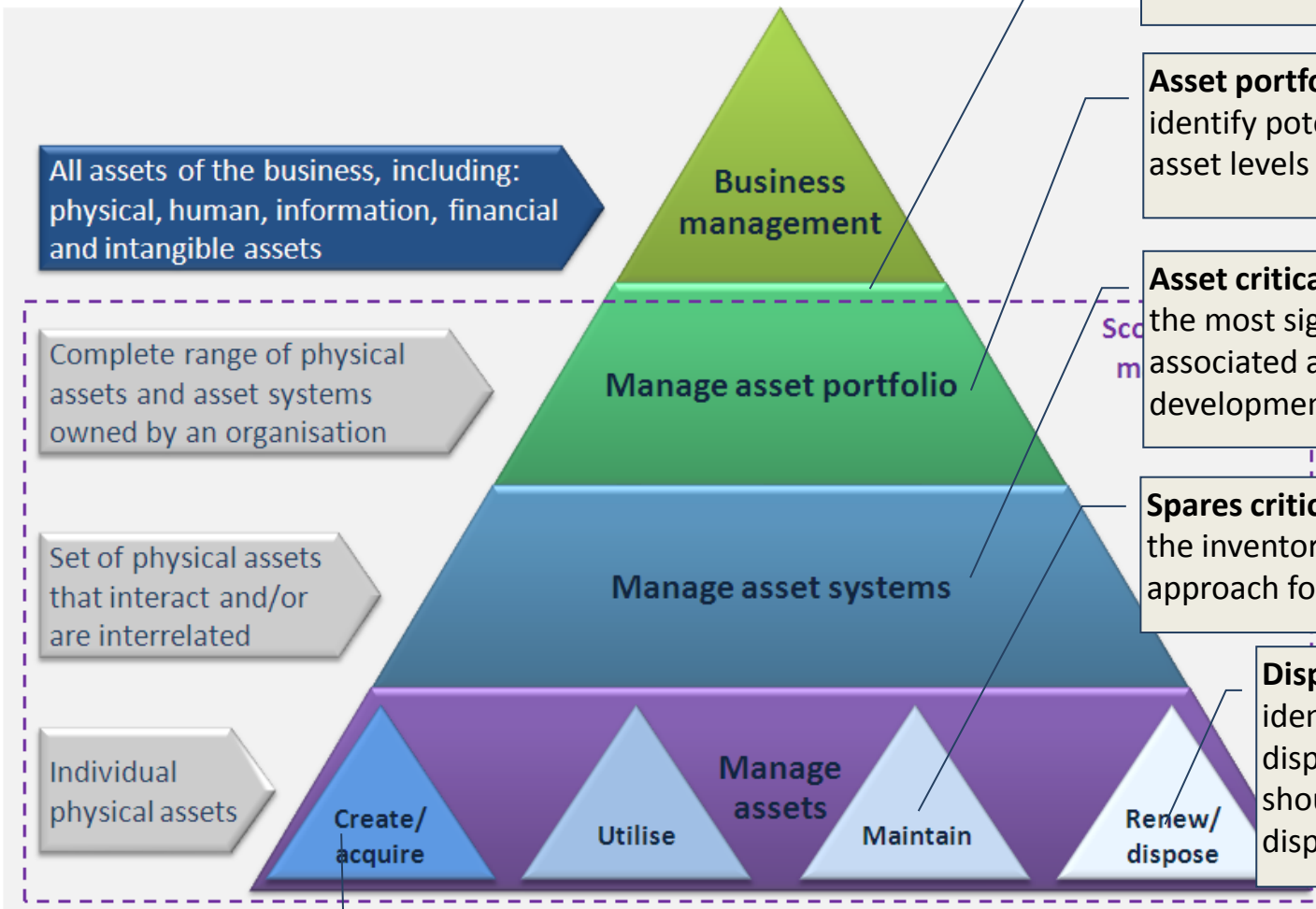

Business risk assessment to identify potential risks to achieving the overall business objectives

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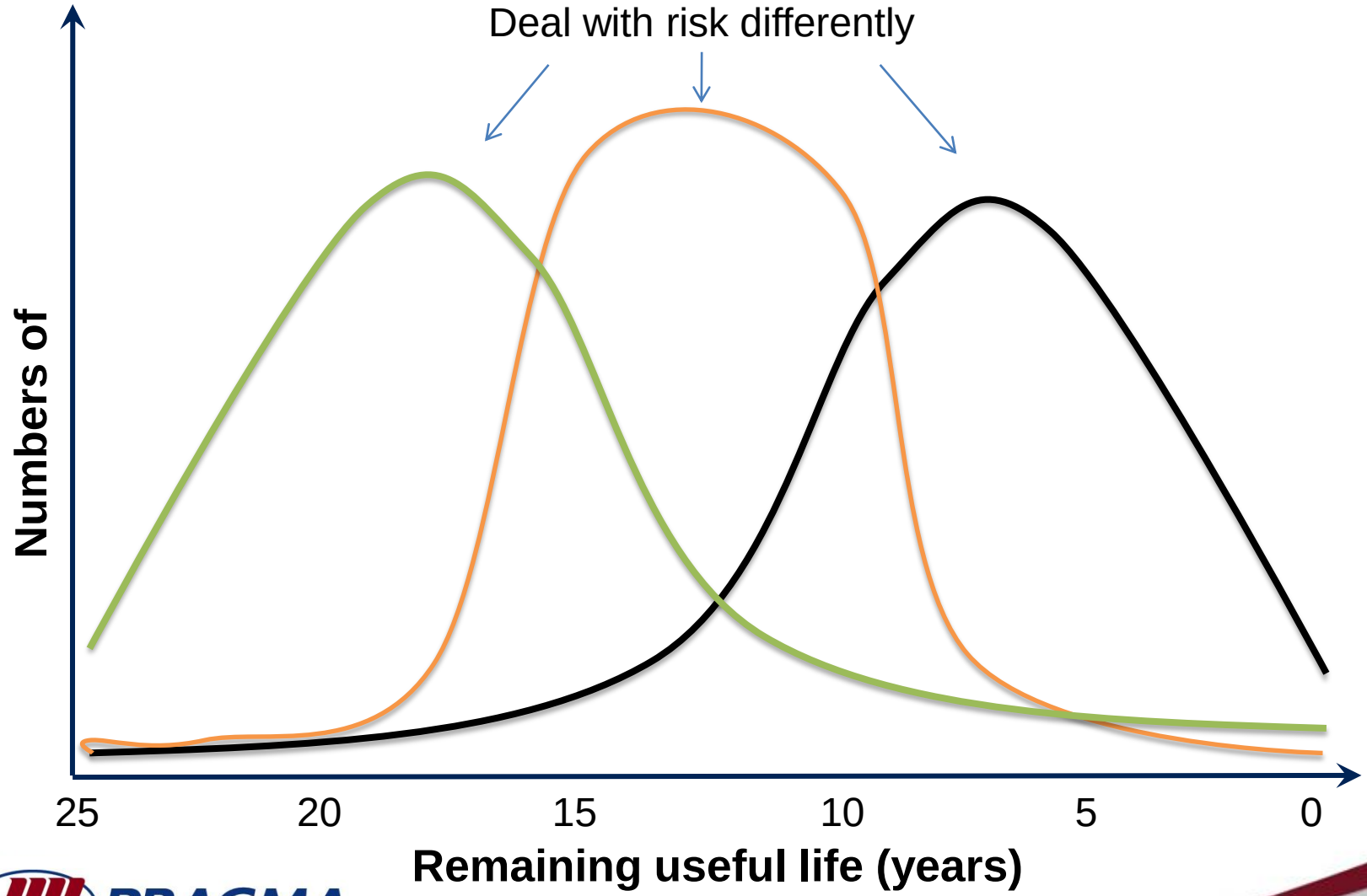
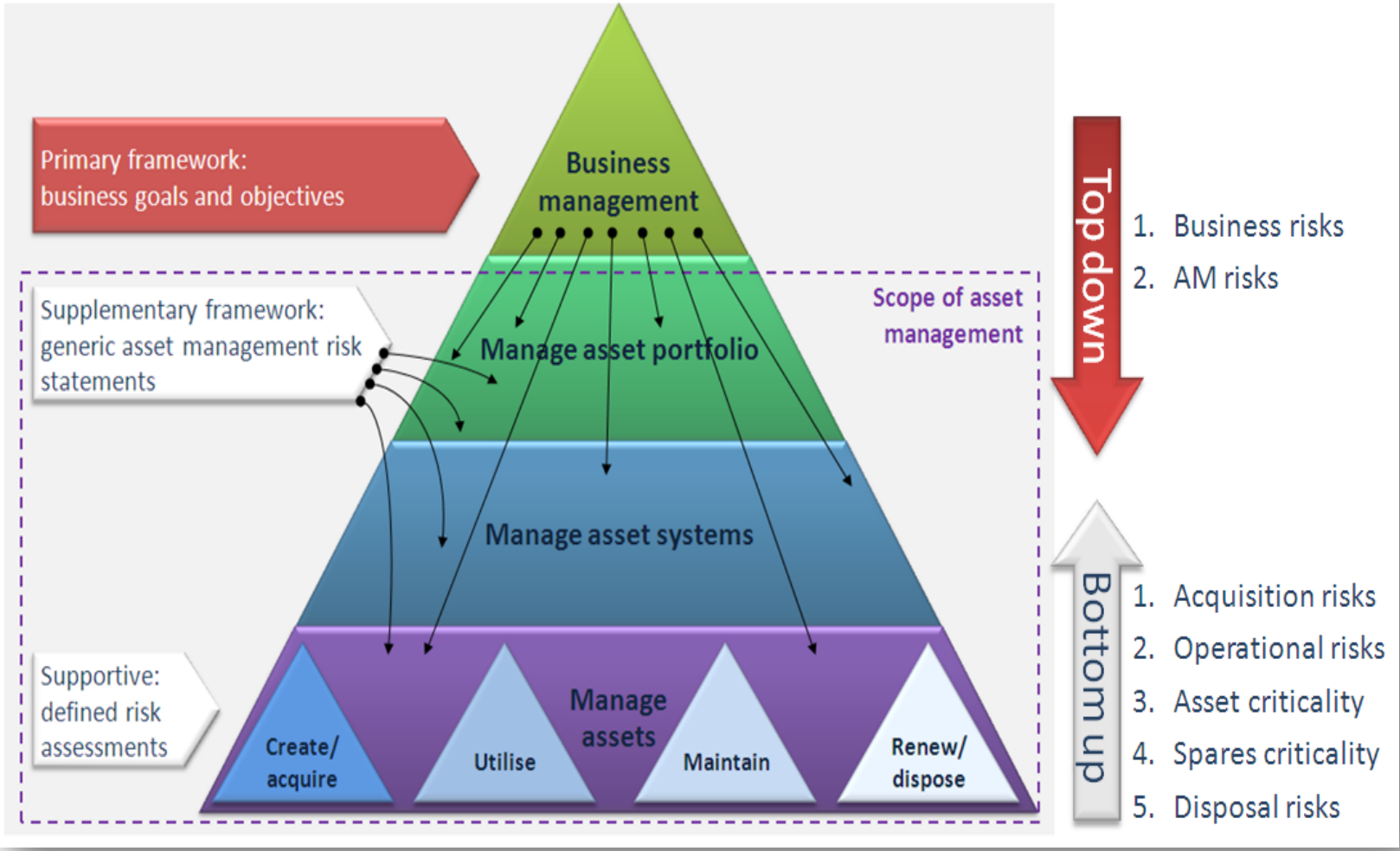
Asset acquisition risk assessment to determine issues that should be included in the specification of the asset such as training, integration of systems, energy considerations, critical spares etc

Portfolio & System level consideration of condition



Alignment of risk assessments within the business



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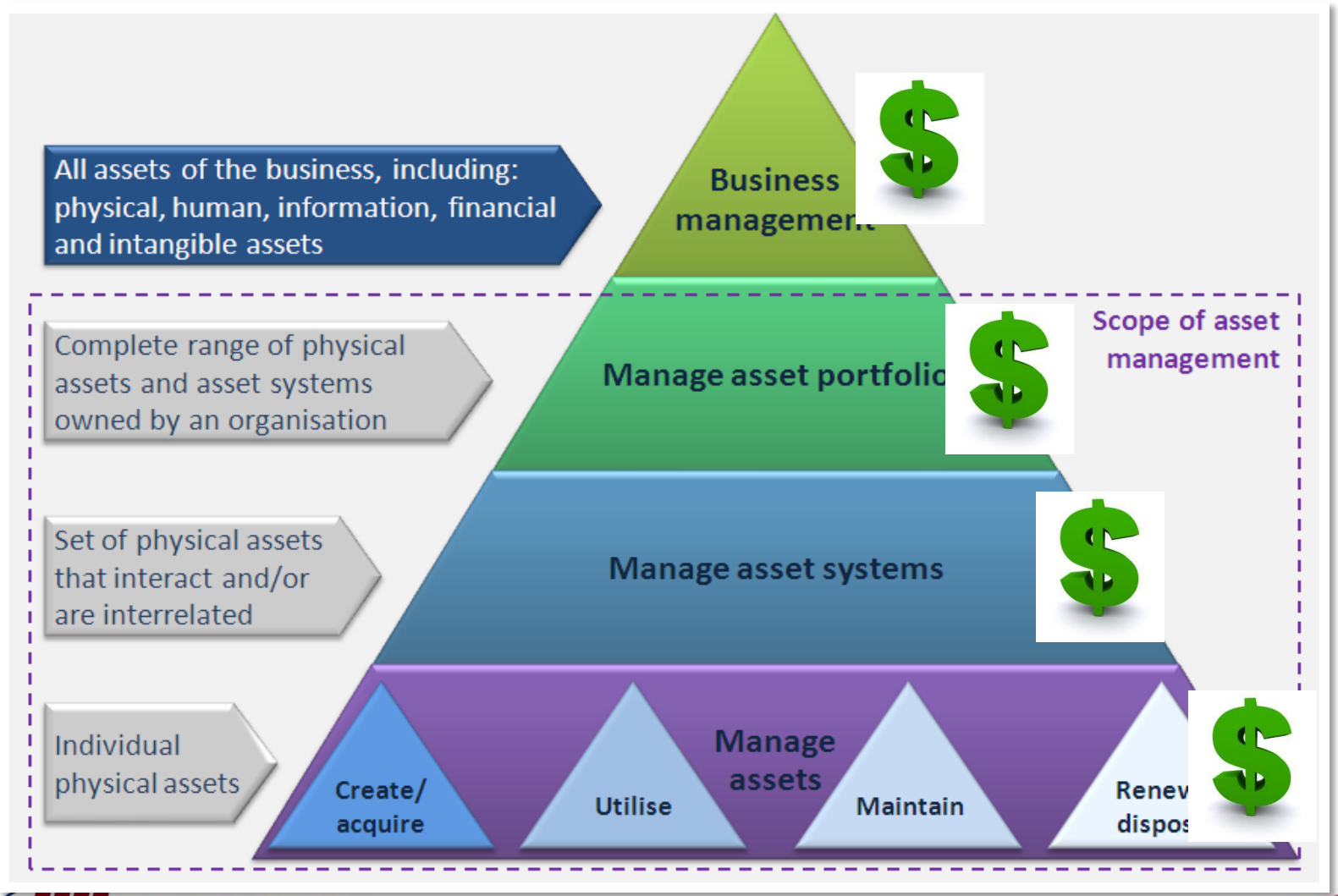

People & technology

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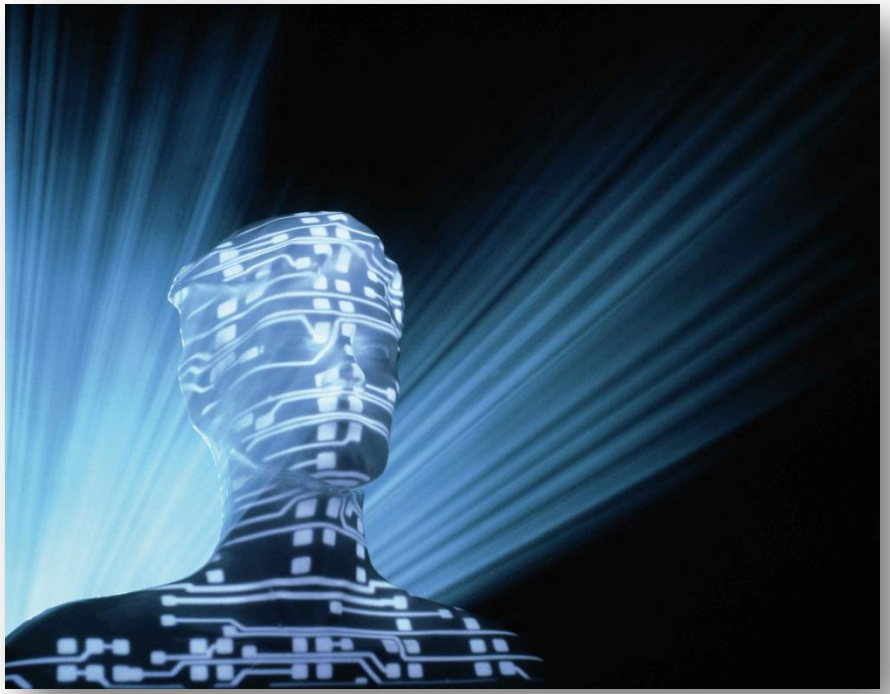

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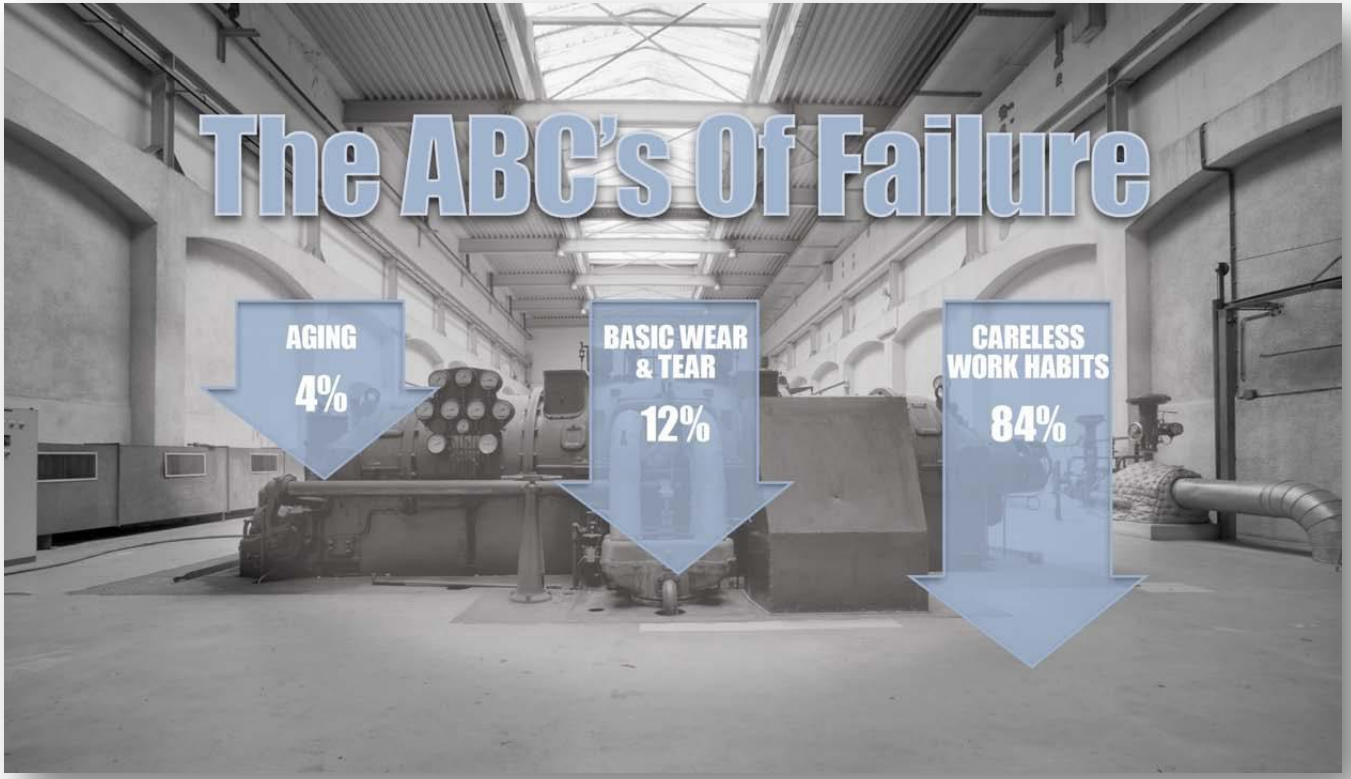
The ABC's of failure…

Biggest Failure mode is People related



Technology Adoption Profile

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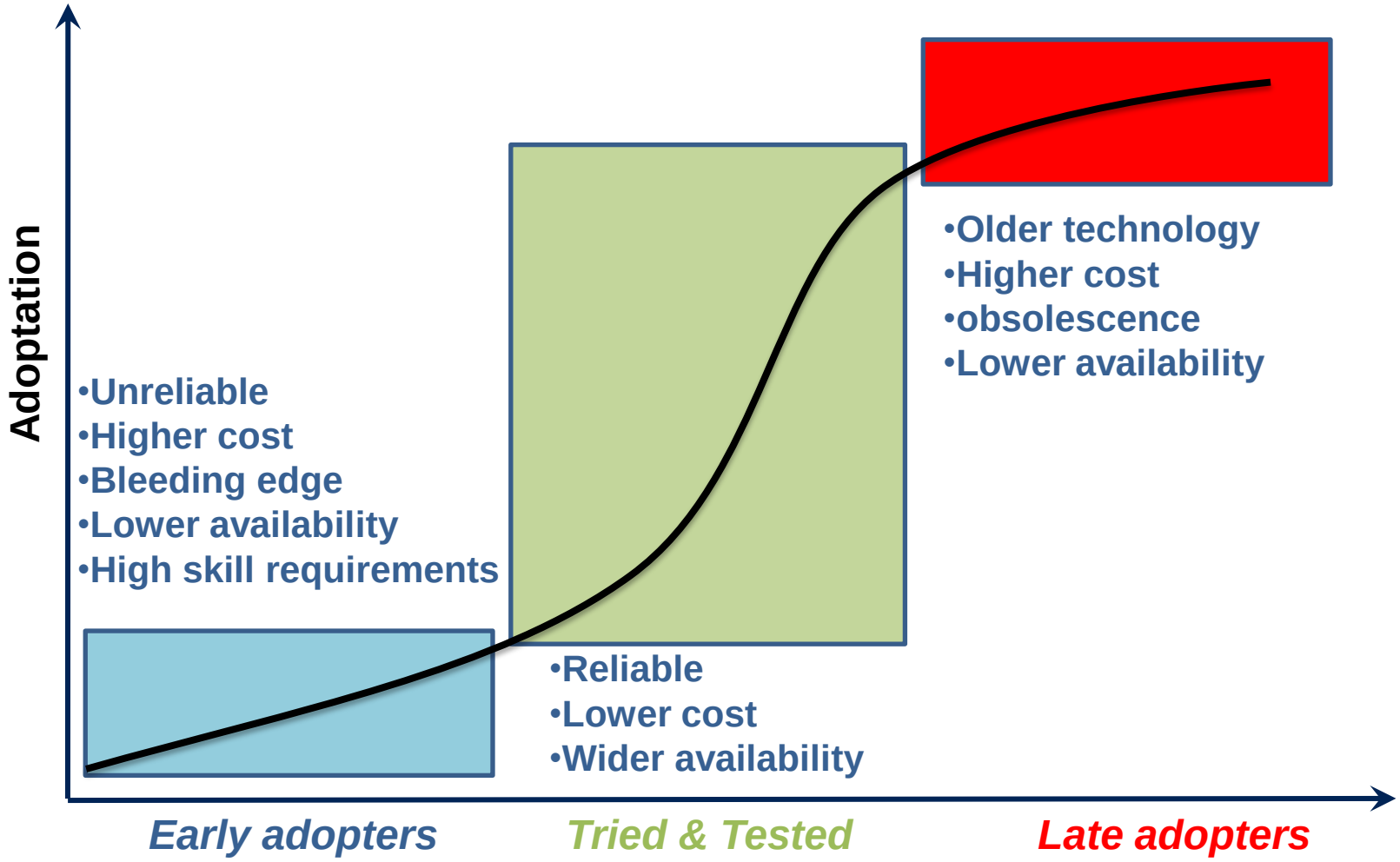

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Technology Adoption Profile

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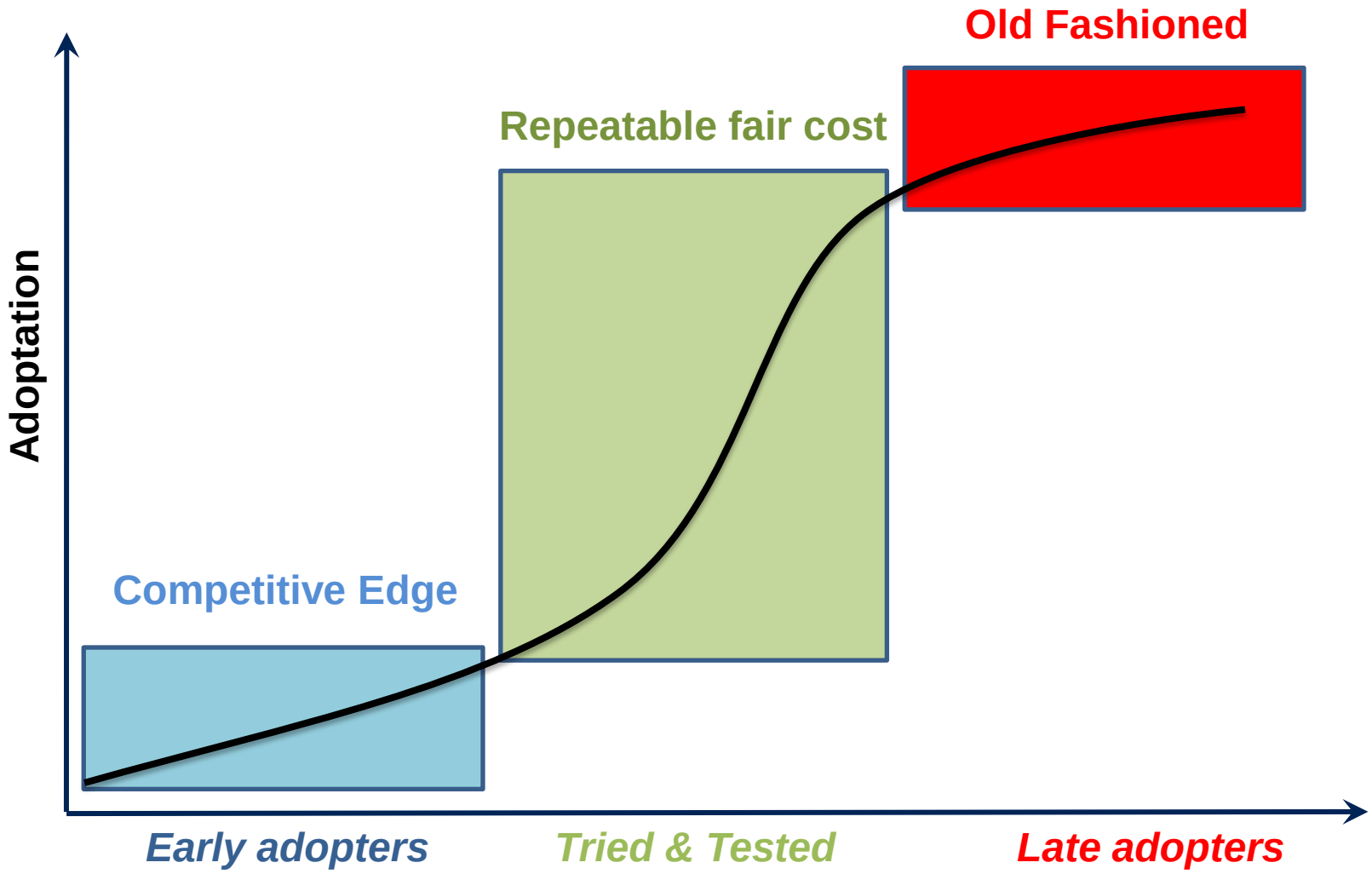

Organisational Awareness Path

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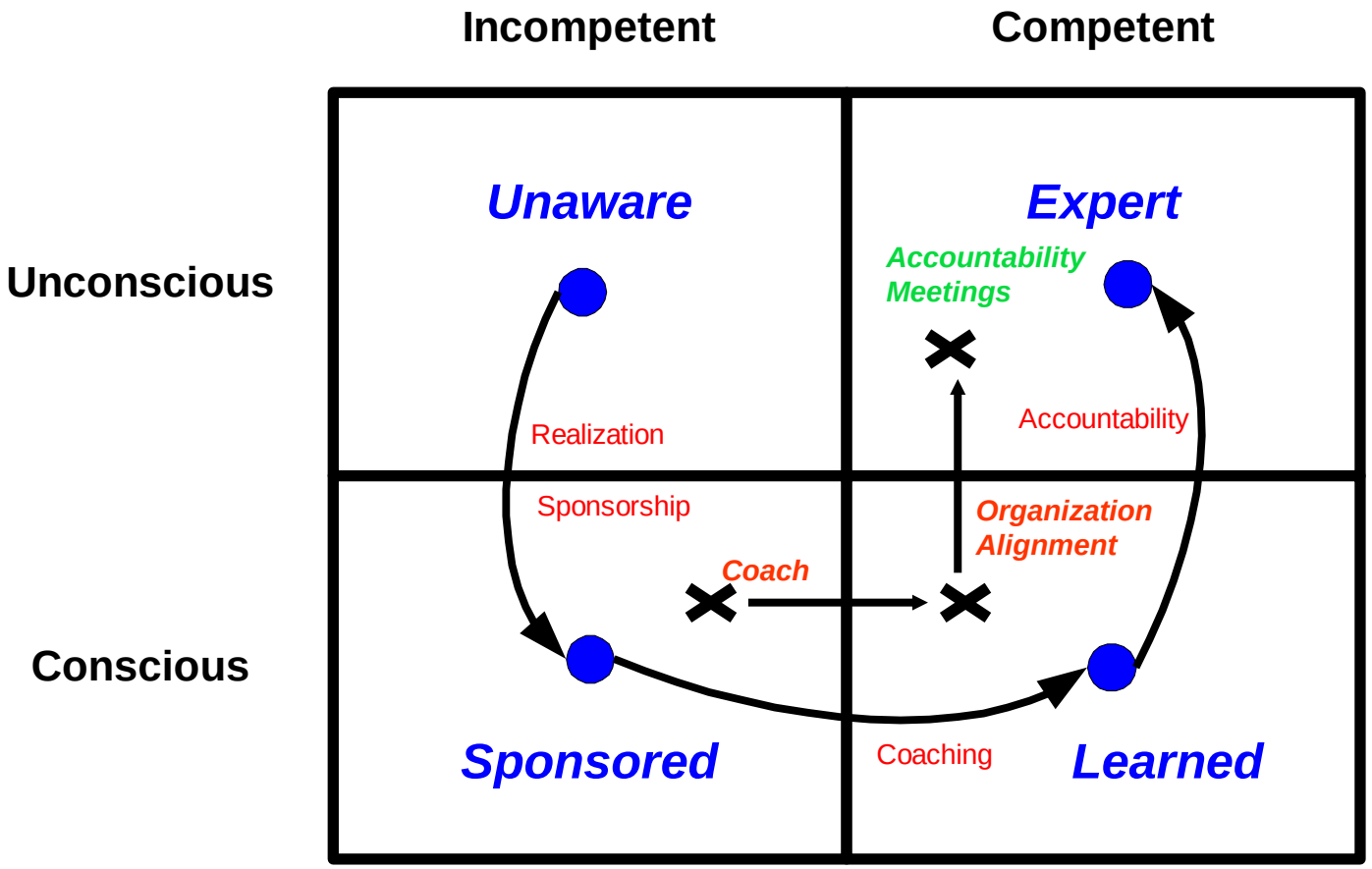

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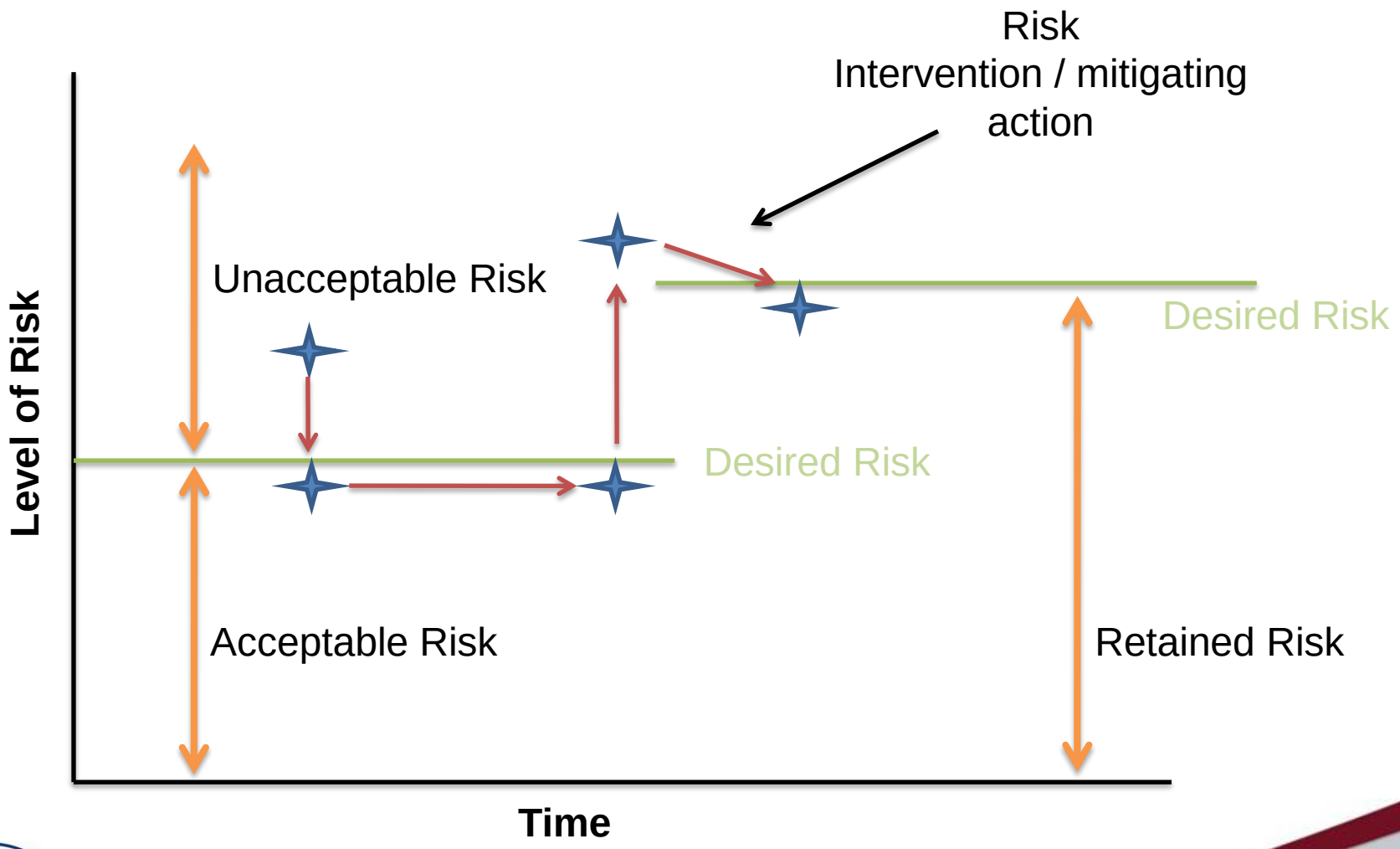
Risk profiles

Risk Profile

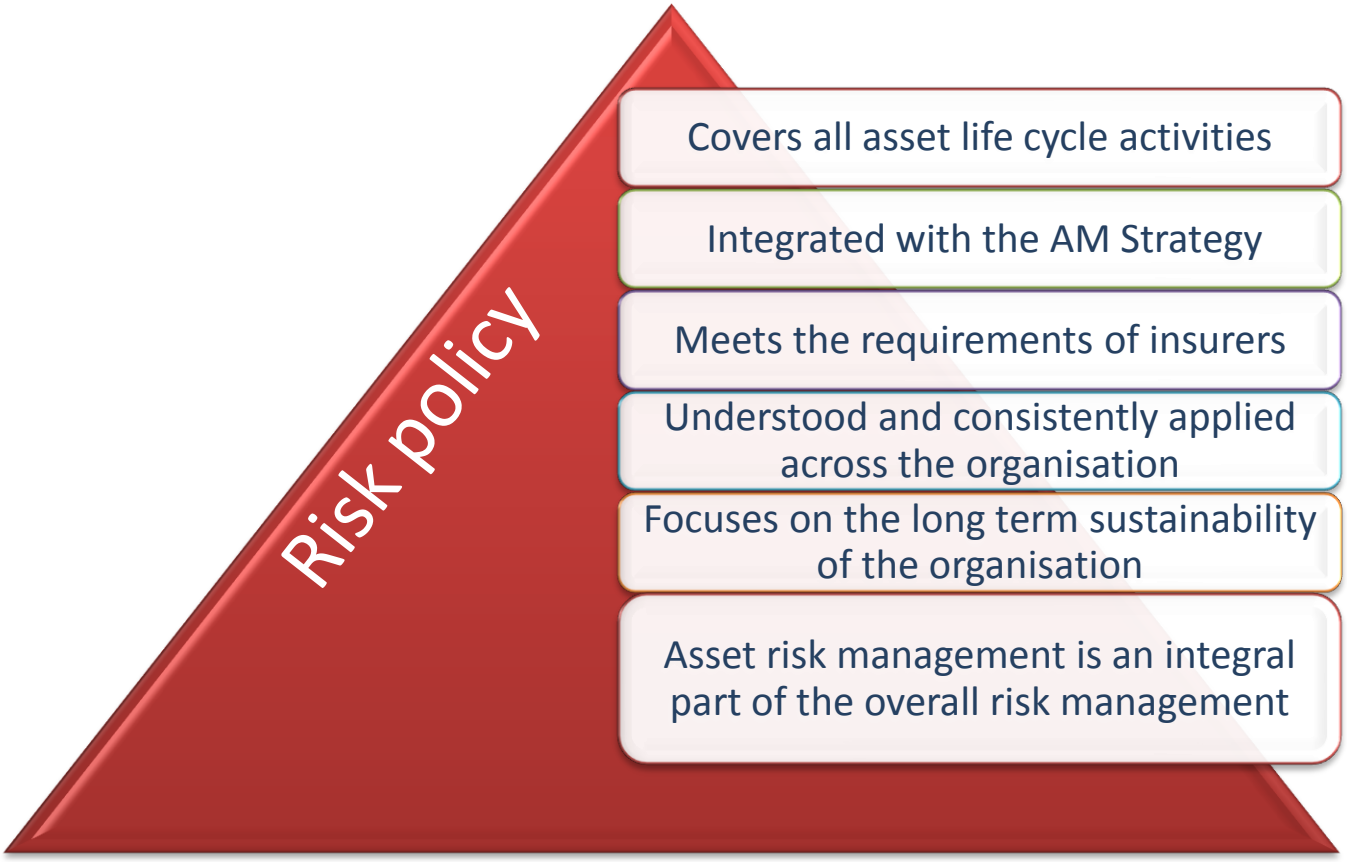


Risk profiles

- Risks change on a daily basis, do your systems accommodate this?
- BP proved that the risk changed with each decision. It can go up or down!
- Our tolerance to risk changes
- We need to quantify risk in financial terms
  - For every R spent on mitigation we removed x amount of risk
  - How do you quantify risk removed?
  - How do you quantify residual or retained risk?

Risk management requirements

Risk Policy (PAS55-2008)



Risk Management Process

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1. Set the framework

- Objectives
- Stakeholders
- Criteria
- Key issues

2. Identify the risks

- What risks might be encountered?
- How will these risks occur?

3. Evaluate the risks

- Probability
- Consequences
- Risk ranking
- Existing controls

4. Mitigate the risks

- Identify risk treatment options and select the best one
- Develop an implementation plan

5. Monitor and review

Risk register

1. Set the Framework

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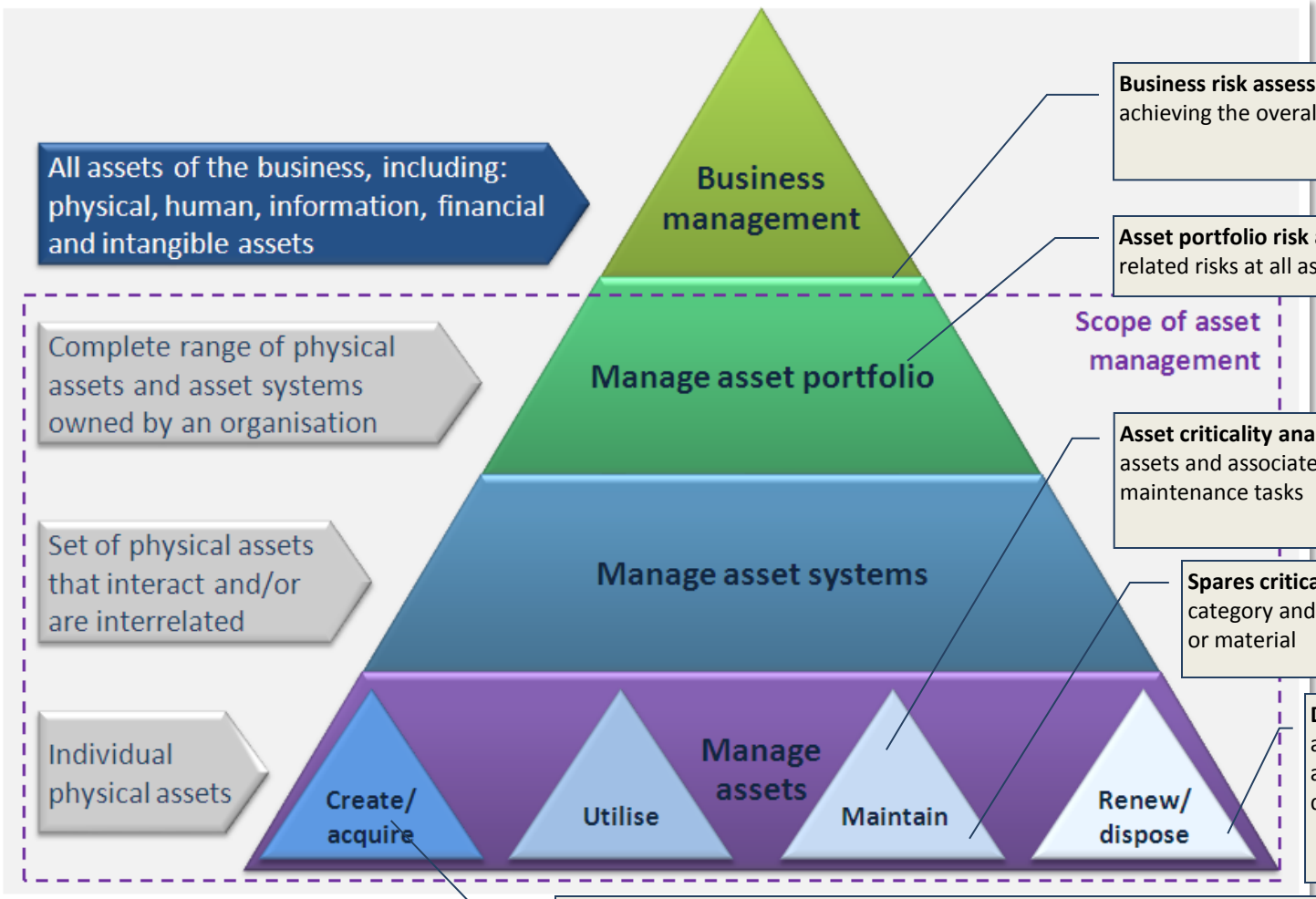
Various risk assessments at different levels of asset management



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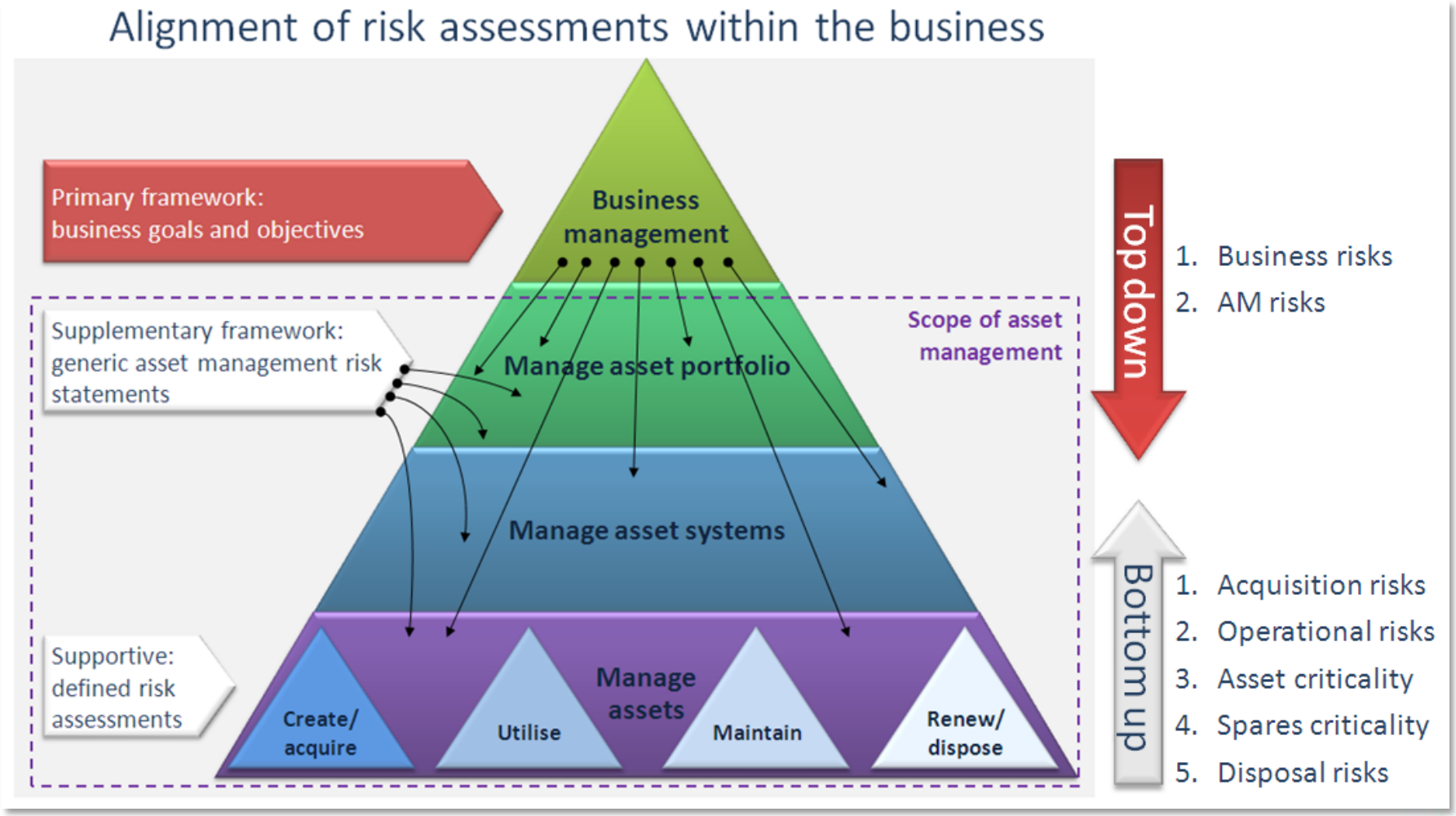
2. Identify the Risks



3. Evaluate the Risks

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Risk Matrix

Hazard Effect / Consequence

(Where an event has more than one 'Loss Type', choose the 'Consequence' with the highest rating)

Risk Type	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
Harm to People (Safety / Health)	First aid case / Exposure to minor health risk	Medical treatment case / Exposure to major health risk	Lost time injury / Reversible impact on health	Single fatality or loss of quality of life / Irreversible impact on health	Multiple fatalities / Impact on health ultimately fatal
Environmental Impact	Minimal environmental harm – L1 incident	Material environmental harm – L2 incident remediable short term	Serious environmental harm – L2 incident remediable within LOM	Major environmental harm – L2 incident remediable post LOM	Extreme environmental harm – L3 incident irreversible
Business Interruption / Material Damage & Other Consequential Losses	No disruption to operation / US$20k to US$100k	Brief disruption to operation / US$100k to US$1.0M	Partial shutdown / US$1.0M to US$10.0M	Partial loss of operation /US$10M to US$75.0M	Substantial or total loss of operation / >US$75.0M
Legal & Regulatory	Low level legal issue	Minor legal issue; non compliance and breaches of the law	Serious breech of law; investigation/report to authority, prosecution and/or moderate penalty possible	Major breech of the law; considerable prosecution and penalties	Very considerable penalties & prosecutions. Multiple law suits & jail terms
Impact on Reputation / Social / Community	Slight impact - public awareness may exist but no public concern	Limited impact - local public concern	Considerable impact - regional public concern	National impact - national public concern	International impact - international public attention

Likelihood		Examples events	Risk Rating				
5	**(Almost Certain)**	The unwanted event has occurred frequently; occurs in order of one or more times per year & is likely to reoccur within 1 year	**11 (M)**	**16 (H)**	**20 (H)**	**23 (Ex)**	**25 (Ex)**
4	**(Likely)**	The unwanted event has occurred infrequently; occurs in order of less than once per year & is likely to reoccur within 5 years	**7 (M)**	**12 (M)**	**17 (H)**	**21 (Ex)**	**24 (Ex)**
3	**(Possible)**	The unwanted event has happened in the business at some time; or could happen within 10 years	**4 (L)**	**8 (M)**	**13 (H)**	**18 (H)**	**22 (Ex)**
2	**(Unlikely)**	The unwanted event has happened in the business at some time; or could happen within 20 years	**2 (L)**	**5 (L)**	**9 (M)**	**14 (H)**	**19 (H)**
1	**(Rare)**	The unwanted event has never been known to occur in the business; or it is highly unlikely that it will occur within 20 years	**1 (L)**	**3 (L)**	**6 (M)**	**10 (M)**	**15 (H)**

Risk Rating	Risk Level	Guidelines for Risk Matrix
21 to 25	(Ex) – Extreme	Eliminate, avoid, implement specific action plans/procedures to manage & monitor
13 to 20	(H) – High	Proactively manage
6 to 12	(M) – Medium	Actively manage
1 to 5	(L) – Low	Monitor & manage as appropriate

4. Mitigate the Risks

- Understand the total risk exposure from all sources, not just assets
- Adopt a cost-effective business approach to manage risk
- Several approaches to manage the inherent risks:
  - reduce risk by capital or maintenance expenditure
  - reduce the impact of a failure
  - accept some risks and carry the consequential costs
  - insure against the consequential costs
  - a combination of above
- After mitigation, the residual risk should be evaluated as before

5. Monitor and Review

- Risk registers are a common and effective mechanism for recording and managing risk
- The monitoring and management of this risk register includes senior management reviews, together with clear processes and accountability for planned mitigation
- The process of maintaining, updating and auditing the risk register is a key AM process, and should be referenced in the AM Strategy (PAS 55)
- Any change introduces new risks
  - It is important to identify and assess these risks on a continual basis

5. Monitor and Review

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Changes to business objectives and goals
Changes to legal and regulatory requirements
Changes to the business

1. Set the framework

Objectives

Stakeholders

Criteria
Key issues

2. Identify the risks

What risks might be encountered?

How will these risks occur?

3. Evaluate the risks

Probability

Consequences

Risk ranking
Existing controls

4. Mitigate the risks

Identify risk treatment options and select the best

Development an implementation plan

5. Monitor and review

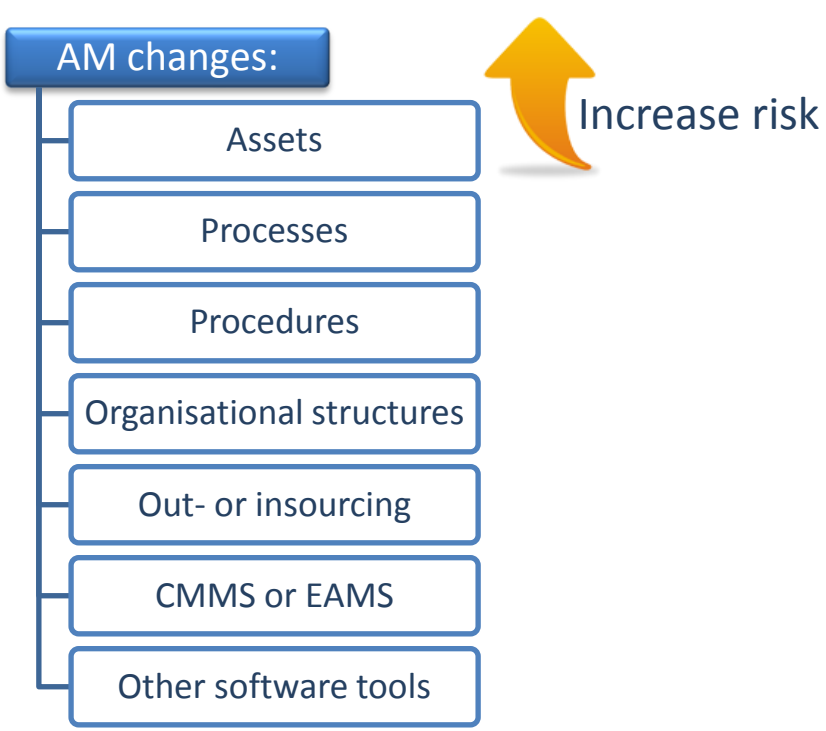
Risk register

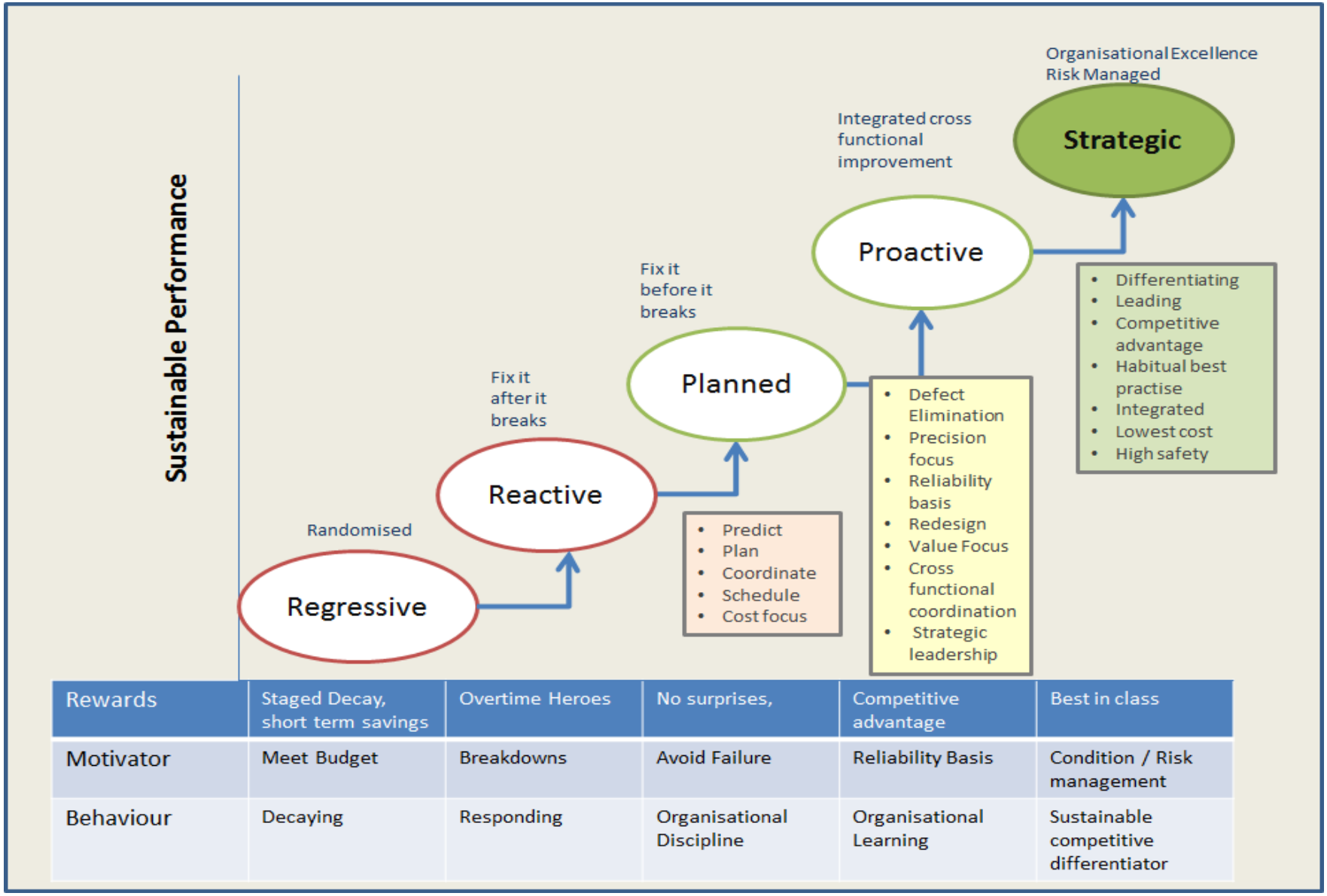
PRAGMA ACUITY

Understanding ▸ Improving ▸ Sustaining

Change Control

- Any change creates risk in the business
- Change control process must ensure that appropriate risk management activities are conducted





Rewards	Staged Decay, short term savings	Overtime Heroes	No surprises,	Competitive advantage	Best in class
Motivator	Meet Budget	Breakdowns	Avoid Failure	Reliability Basis	Condition / Risk management
Behaviour	Decaying	Responding	Organisational Discipline	Organisational Learning	Sustainable competitive differentiator

PAS 55 Key Success Factors

- Get senior management commitment
- Link it visibly to the business strategy
- Set clear performance goals
- Compliance is a result, not a goal
- Communicate often for awareness and support
- Training in PAS and AM
- Plan for quick wins
- Monitor progress
- Keep it simple and practical
- Make it a way of life

Summary

What do you need to do if you don't follow the standard?

Thanks & Questions?

www.pragmaworld.net

Dean Griffin

Pragma Academy Brasil

Dean.Griffin@pragmaworld.net

pragma.academy@pragmabrasil.com.br

55 19 3327 1719

55 19 3327 1720

55 19 3327 1721