



The role of independent insurance advisors

Determination of the “Risk Universe” of a client and the market for local insurance companies

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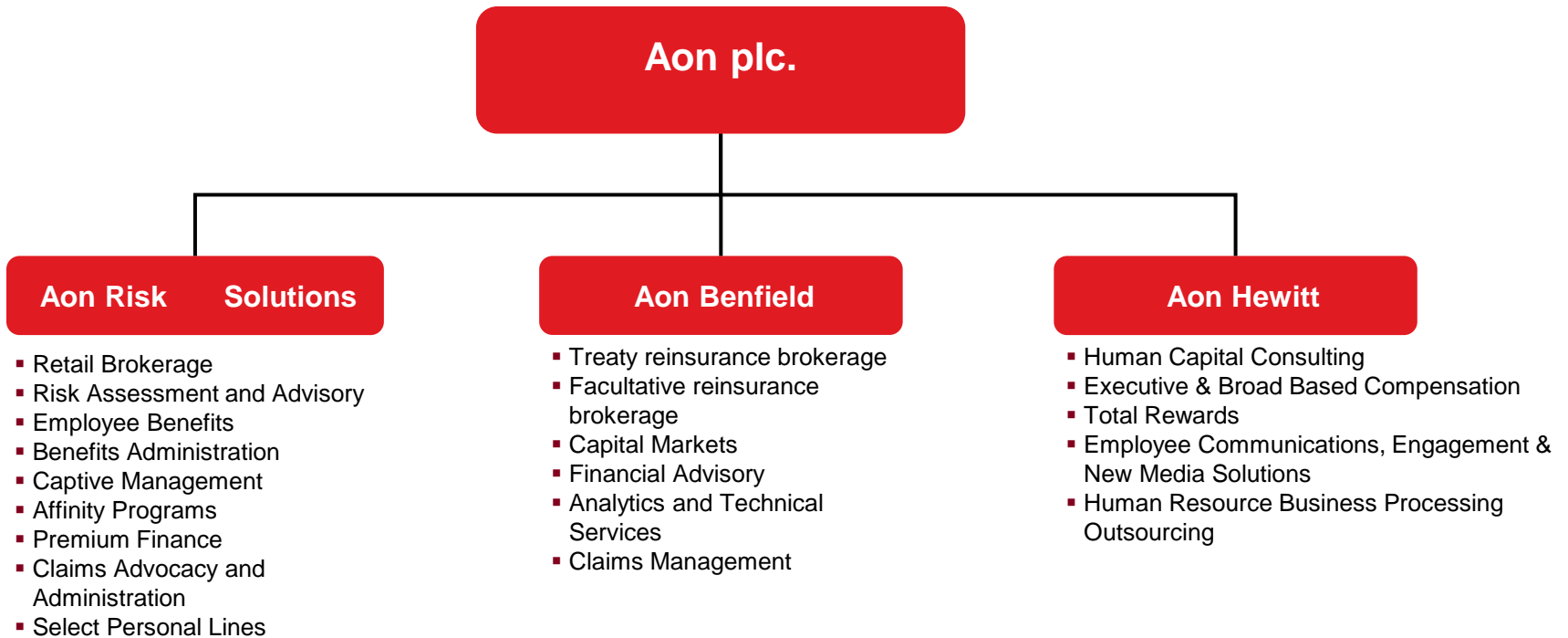
Agenda

- The role Independent “Risk Advisory”
- The Risk Universe of a PPP project
- Risk Assessment in PPP
- Risk Allocation principles
- Insurable risks



Aon plc.

Aon's three main business units



The role of independent insurance advisors

To identify and understand the risk exposures and concerns of an Entity either public or private in order to provide value adding risk management solutions

This includes:

- Holistic approach to the risks.
- Global experience from variety of business sectors
- Diversified “think tank” within. Consultants with various expertise's.
- Ability to follow “risk based approaches”
- Ability to service projects and operations during their entire lifecycle (contract, design, construction, operation)



The “Risk Universe” of a PPP Project

Defining PPP

Provision of services to the population utilising the skills and efficiencies of the private sector where the Public and Private sectors work in partnership to provide best value for money for the good of the country.

Defining “Risk Universe”

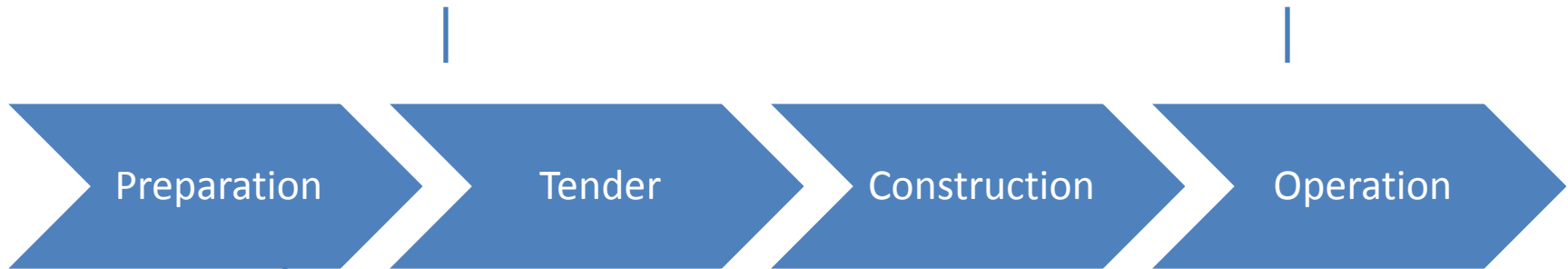
The Risk Universe comprises of all uncertainties that may affect a PPP during its entire life cycle. These can be either “Upstream” or “Downstream”.



Where do (key) risks come from?

1. Procurement rules
2. Competitive pressure
3. Marketability, bankability
4. Public project organization
5. Political support

1. Economic development
2. Ridership
3. Change of law
4. Taxes
5. Maintenance cost



1. Site related alignment
2. Engineering
3. Political support
4. Public agreement
5. Land acquisition

1. General construction risk
2. Ground/area conditions
3. Pipe, machinery
4. Cost overruns
5. Permits & procedures



Typical pitfalls of PPPs

- Under estimation of risk
- Over estimation of risk
- Inappropriate transfer of risk
- Inappropriate projects
- Lack of partnership approach: win-win
- Reinventing the wheel
- Public sector inflexibility to change/new ideas

Typical factors of success

Key bankability issues:

- Project delays / project availability
- Structure and security of payments
- Standardisation of documents
- Changes in law
- Allocation of risk
- Termination
- No open ends



Public Sector: Critical Factors

- Own expertise and experience (not new team on every deal)
- Resource commitment
- Political will (all levels)
- Project selection: clear output needs
- Objective measurement
- Transparent process
- Clear objectives
- Right advisors – not cheapest
- Recognition of Private Sector Profit Needs i.e. partnership

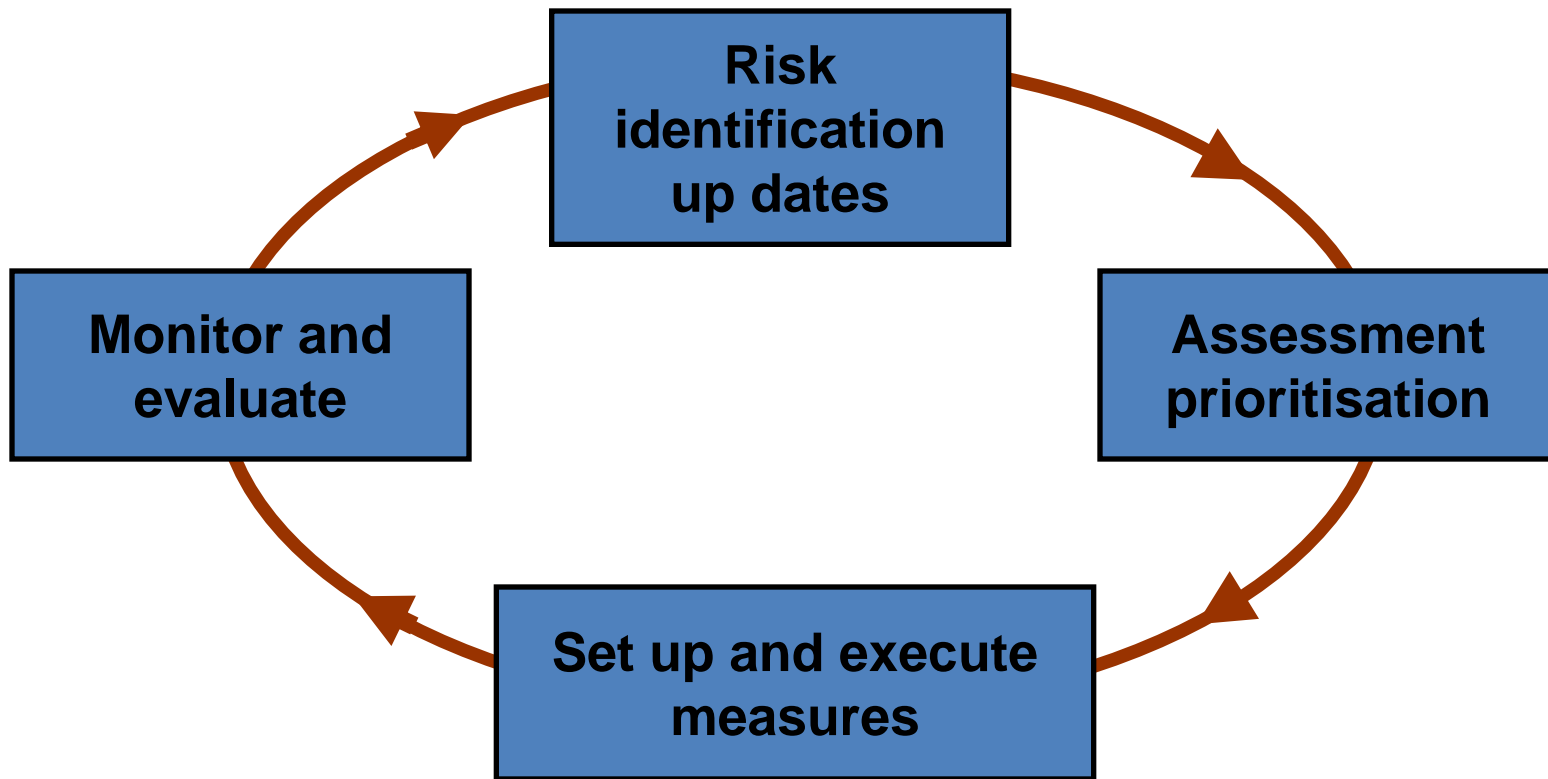


Private Sector: Critical Factors

- Do we know the project objectives?
- Do we know the clients objectives?
- Do we know what can influence the project?
- Do we know the risks?
- What are the expected results and what if they will not be met?
- Are we able to take risk on a responsible way?
- What can we loose?
- Which project risks are in control?
- How are risks financed?
- What are the minimum controls necessary to ensure the project goals?
- How can we create sufficient risk awareness concerning the consequences of project related risks?
- Do we have the right partners ?



Basic risk management proces followed within Risk Advisory industry



Risk Management in PPP – What do risk advisors bring on the table

- **Project related experience**
 - Preparation
 - Design
 - Construction
 - Operation
- **Experience gained from insurable claims management**
 - Claims risen throughout the entire life cycle of a project
- **Diversified team with various experts**
 - Engineering
 - Law
 - Finance
 - Other
- **Global presence**
- **Global and local Insurance market expertise**



Definition of risk

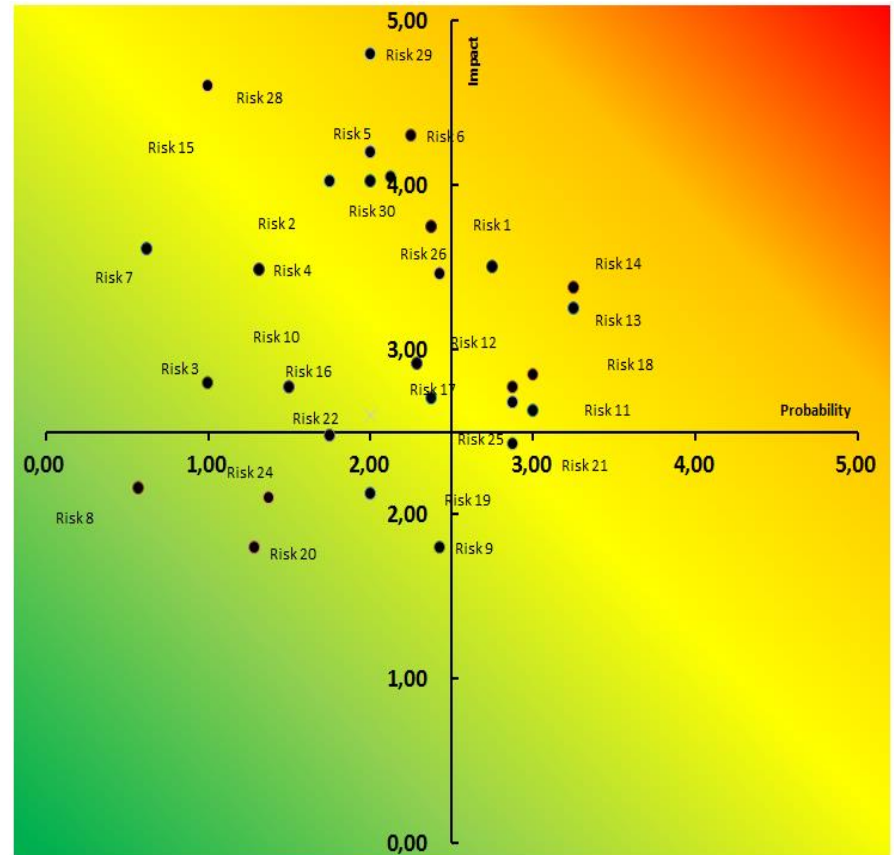
RISK =

- ✓ probability that an event or condition will occur,
- ✓ causing a certain negative consequence
- ✓ on the goals of the project

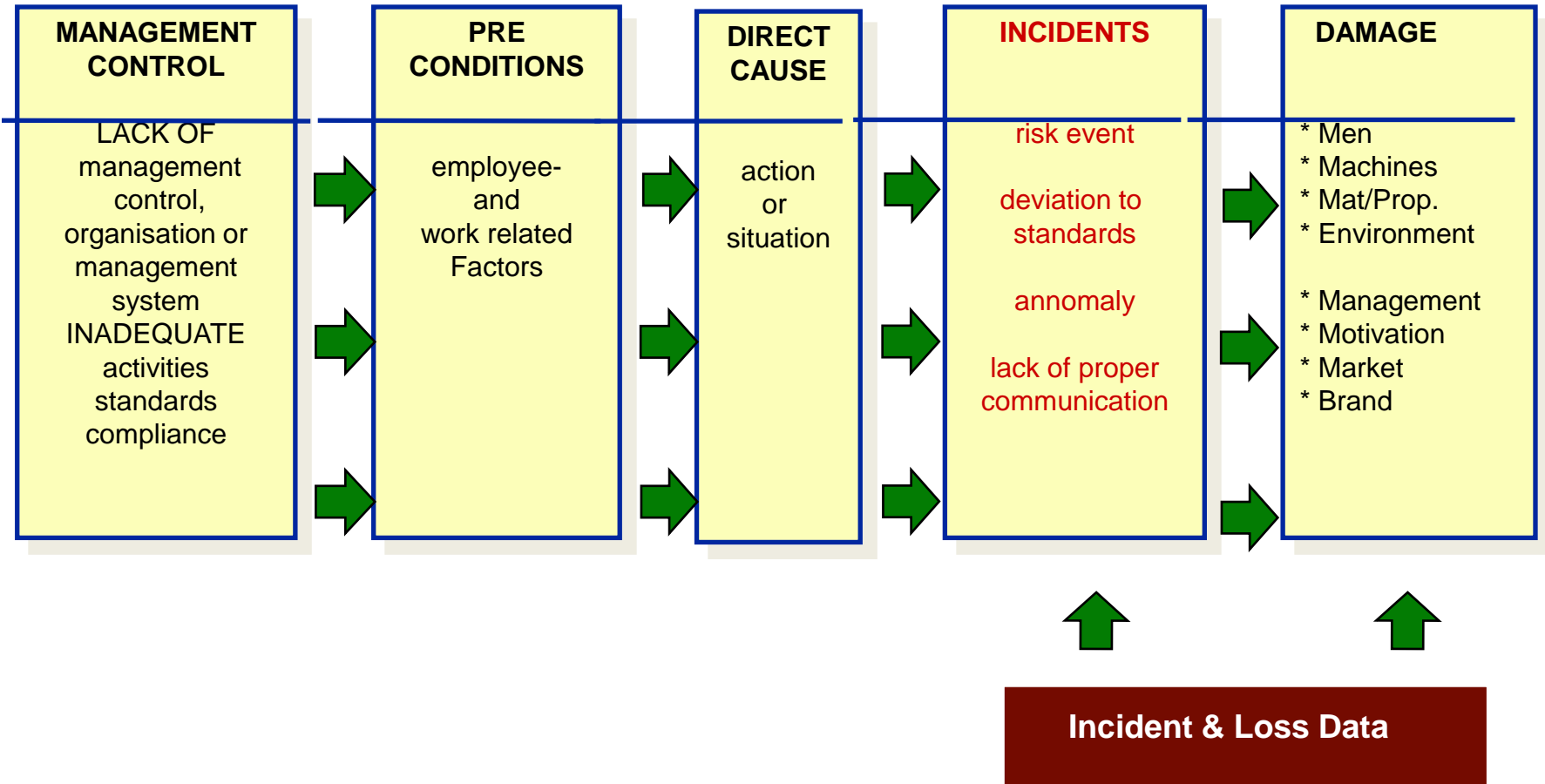
(probability x consequence)

RISK =

- ✓ a potential issue



A typical risk mechanism



Risk Measuring

- Probability (%):
 - Quantitative based upon Mean Time Before Failure (MTBF) data
 - Qualitative based upon availability of control measures
- Consequences
 - Quantitative based upon Failure Mode & Effect Analysis (FMEA) and scenario calculations
 - Qualitative based upon consensus of negative effects on goals



Qualitative risk assessment

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- Quick
- Simple
- Limited management attention

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- Less reliable
- No good link with effects of risk transfer
- Development of risk difficult to monitor



Quantitative risk assessment

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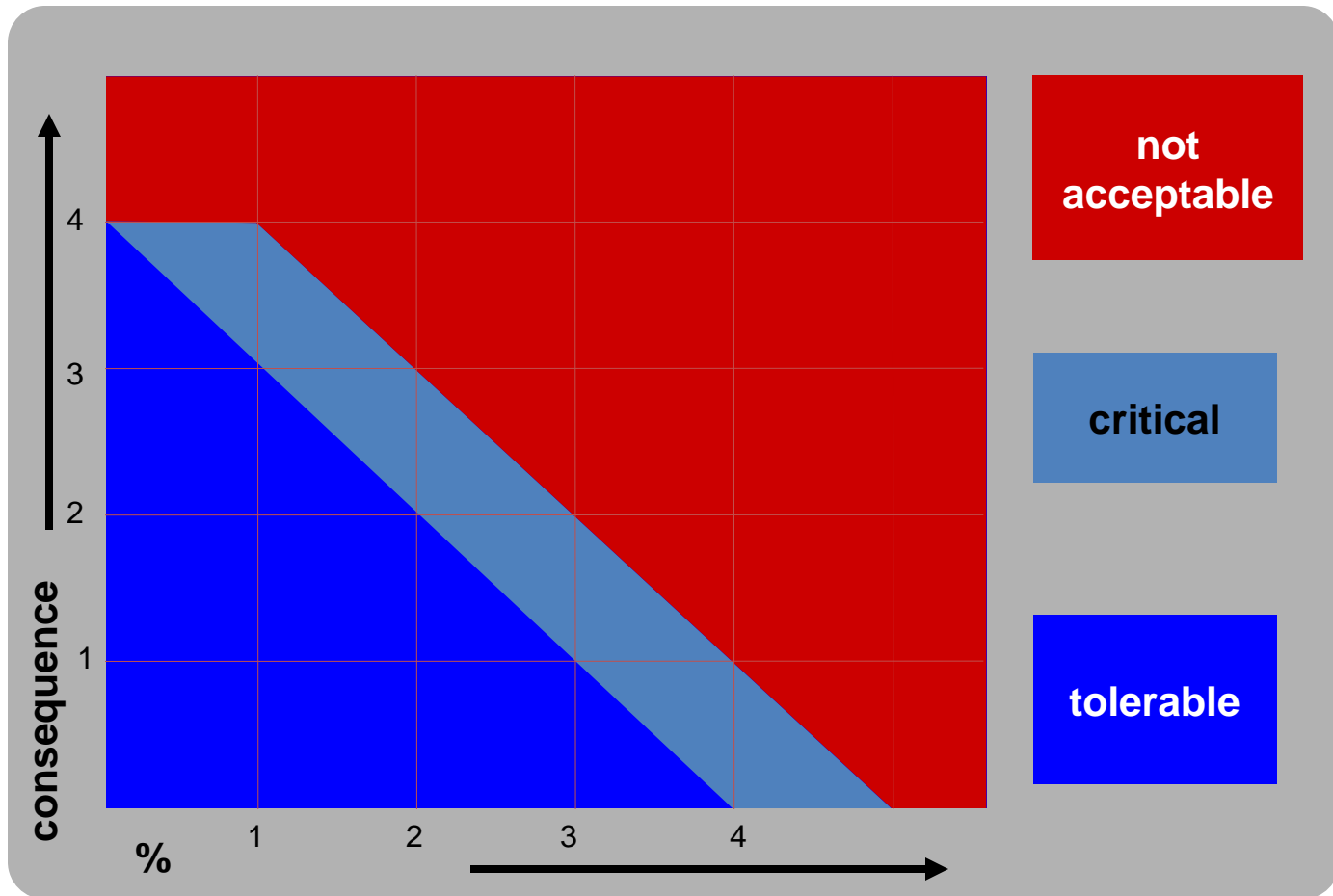
- Reliable
- Good link with effects of risk transfer
- Cost benefit analysis possible

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- Time consuming
- Need suitable information (often lacking)
- Can lead to early exclusion of risk



Assessment, risk map



Value of Quantitative Analysis for PPP

- Each project can be evaluated over a life cycle risk profile
 - Determination and transparency of contingent charges and funding
 - Impact performance security requirements and pricing
 - Evaluation and selection of risk management strategies
- For investors - pooling of various project risks and evaluation of systemic risks
- For contractors – competitive advantage in bidding and operating
- Measuring the “Value for Money”
 - Optimize efficiencies
 - Cost savings
 - Sustainability
- Project Assurance Audit provides PPP participants with objective means of evaluating and managing risks



Modeling risk data

- Risk = probability x consequence
 - Average/typical loss per year
 - Maximum probable loss per year
- Other variables:
 - Future (expected) changes in exposure
 - Correlation between (consequences of) various risks
 - Predictability: reduces variability and thus risk

Probability and consequence classes (example only)

Class	Probability
1	< 5%
2	5 – 25%
3	25 – 50%
4	>50%

Class	Consequences in time	Loss of functionality Compliance rate	Financial loss
0	No consequence	No consequence	No consequence
1	< 2 weeks	Minor effect	< EUR 50.000
2	2-4 weeks	Repairable, no remaining effects	EUR 50.000 – 500.000
3	4-8 weeks	Repairable but with effects though still acceptable	EUR 500.000 – 5.000.000
4	> 8 weeks	Lasting failure, no acceptance	> EUR 5.000.000



The risk score (example only)

Prioritisation based upon risk score

probability class x [sum: consequence classes]

probability 25 – 50 % → class 3

delay, 4- 8 weeks → class 3

no acceptance → 4

financial < 50.000 → 1

→ Risk score = 3 x [2 + 4 + 1] = 21



Risk control

1. Goalsetting (SMART)



2. Risk identification

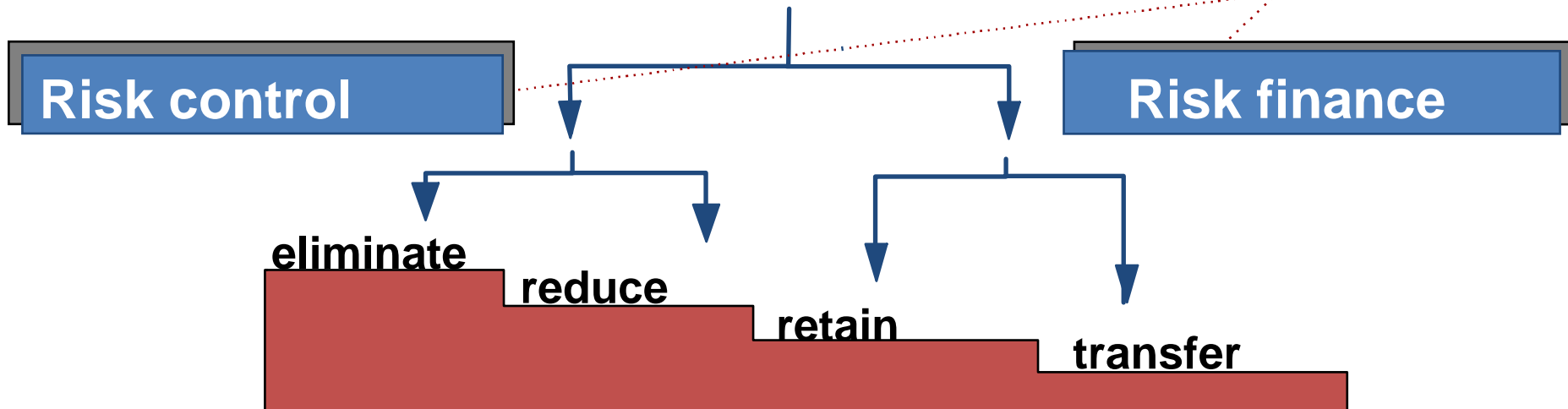


3. Risk assessment

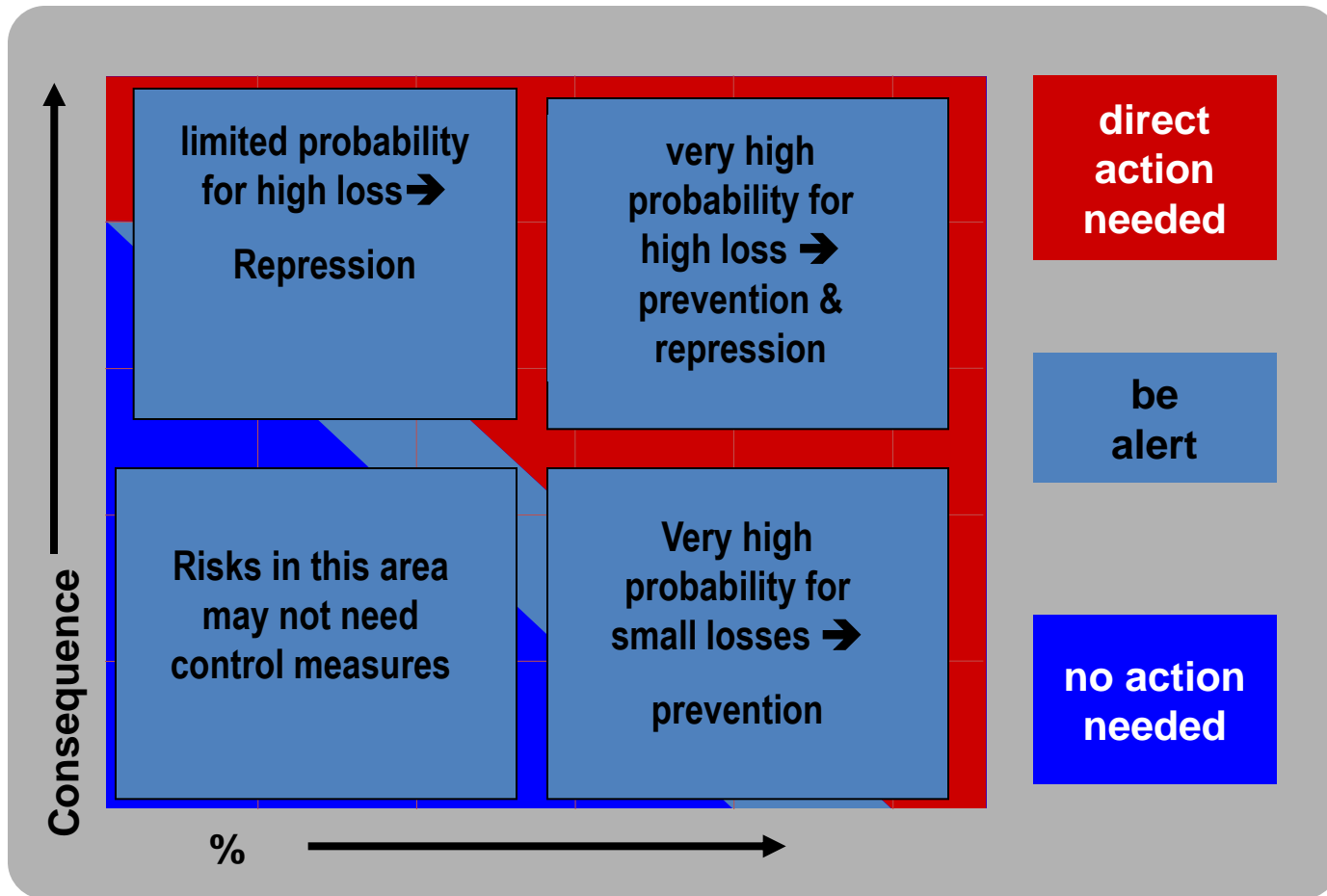


4. Risk control measures

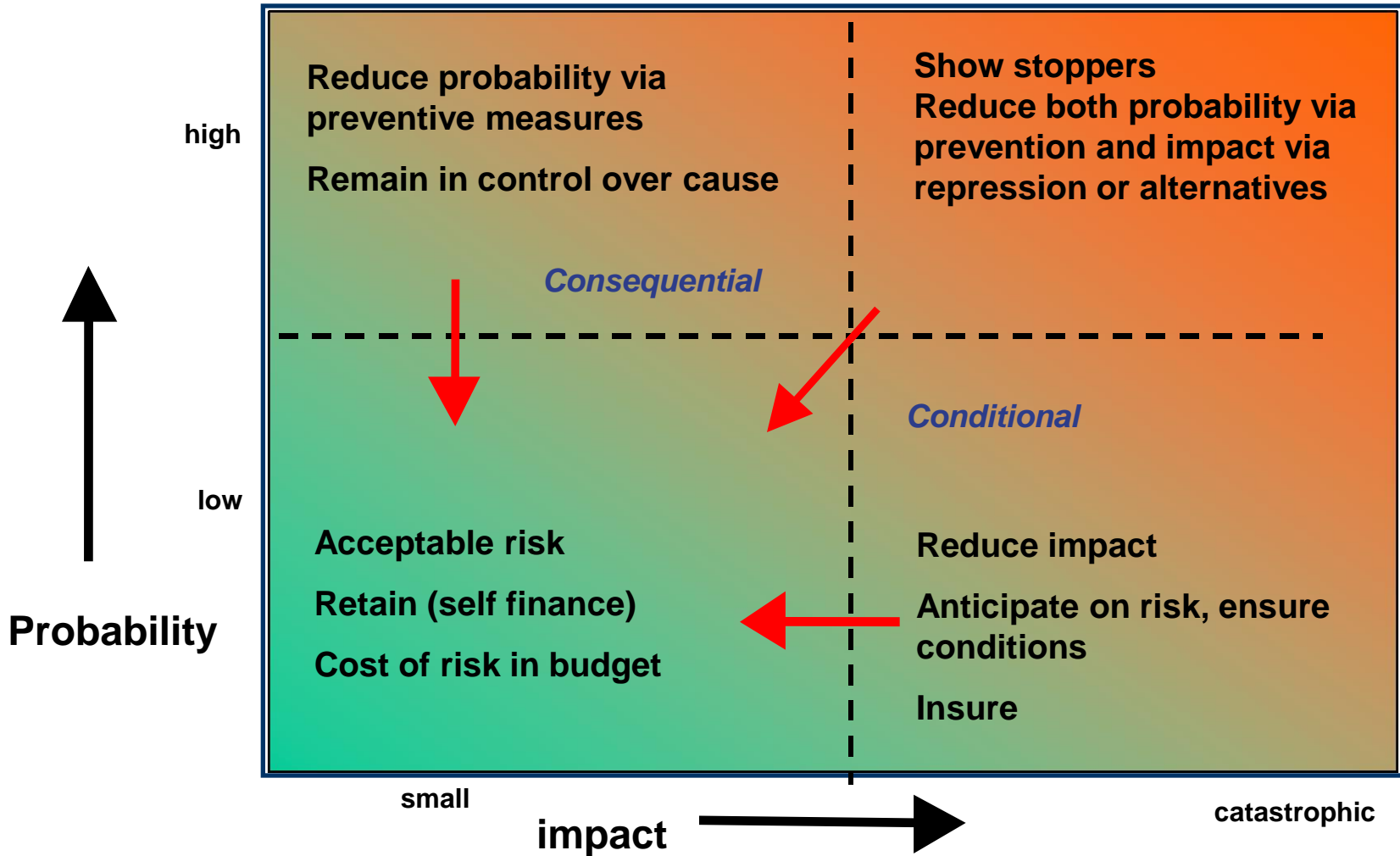
Optimum combination



Define risk control measures

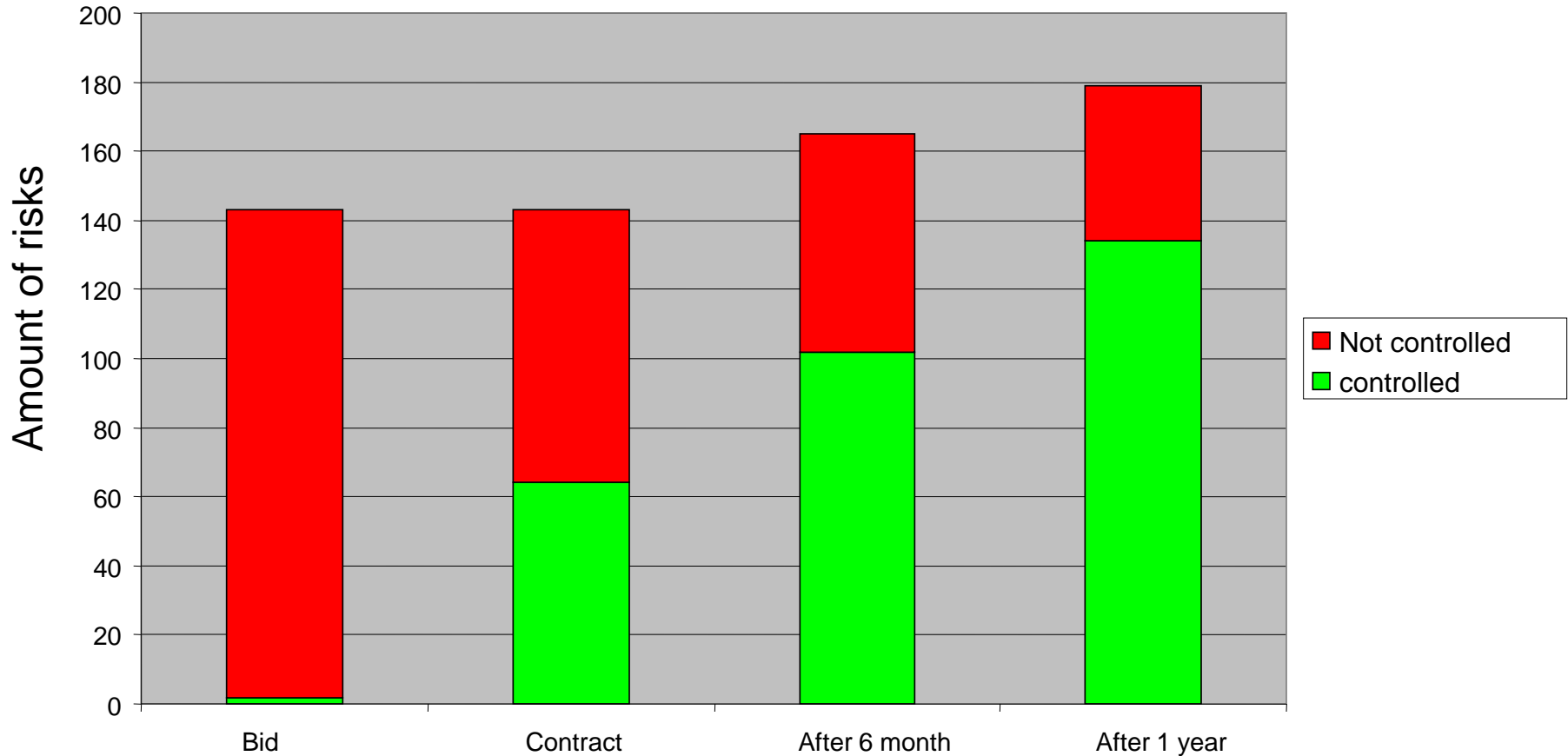


RM during all project phases



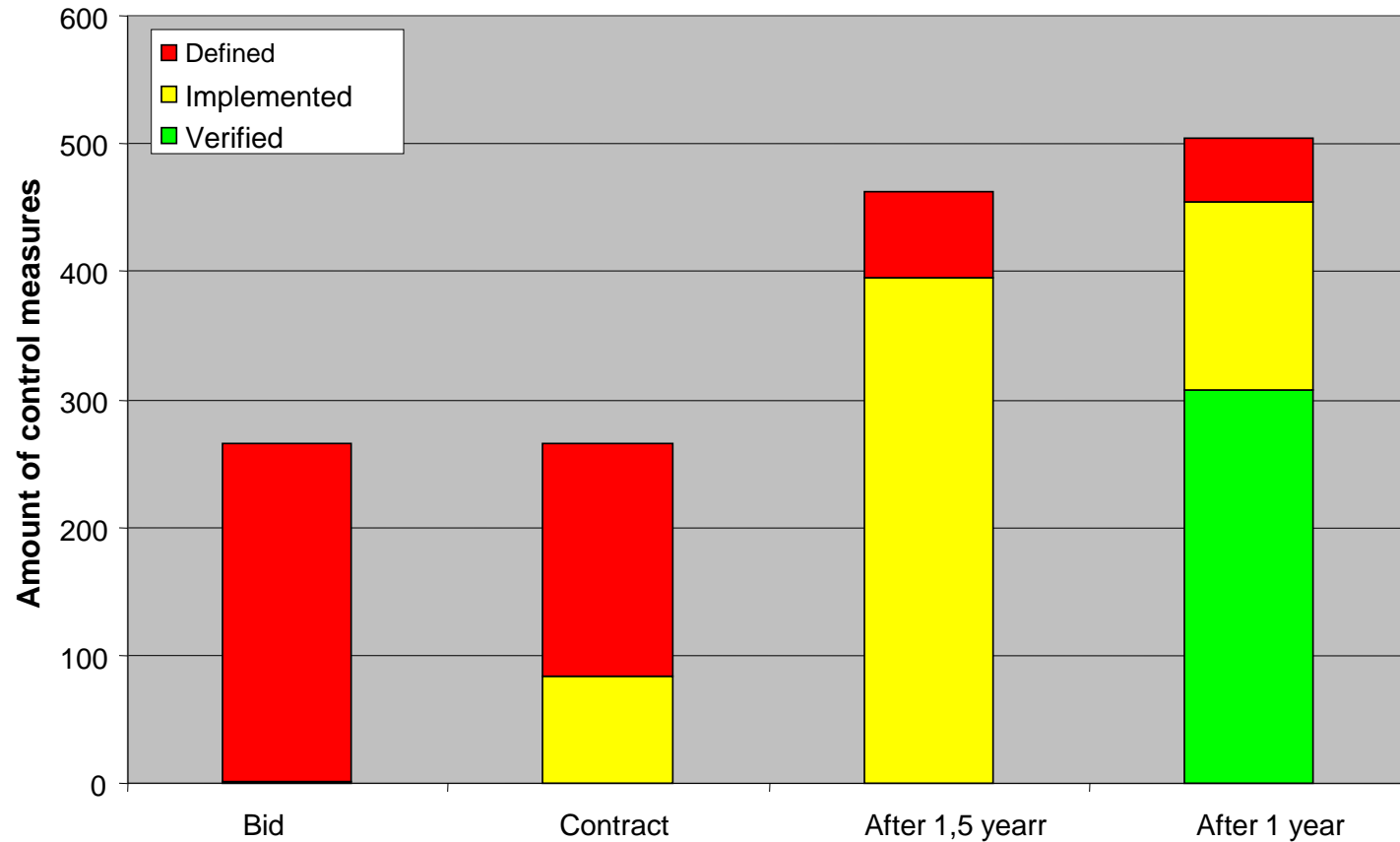
Risk Management results

Evolution of controlled and not controlled risks

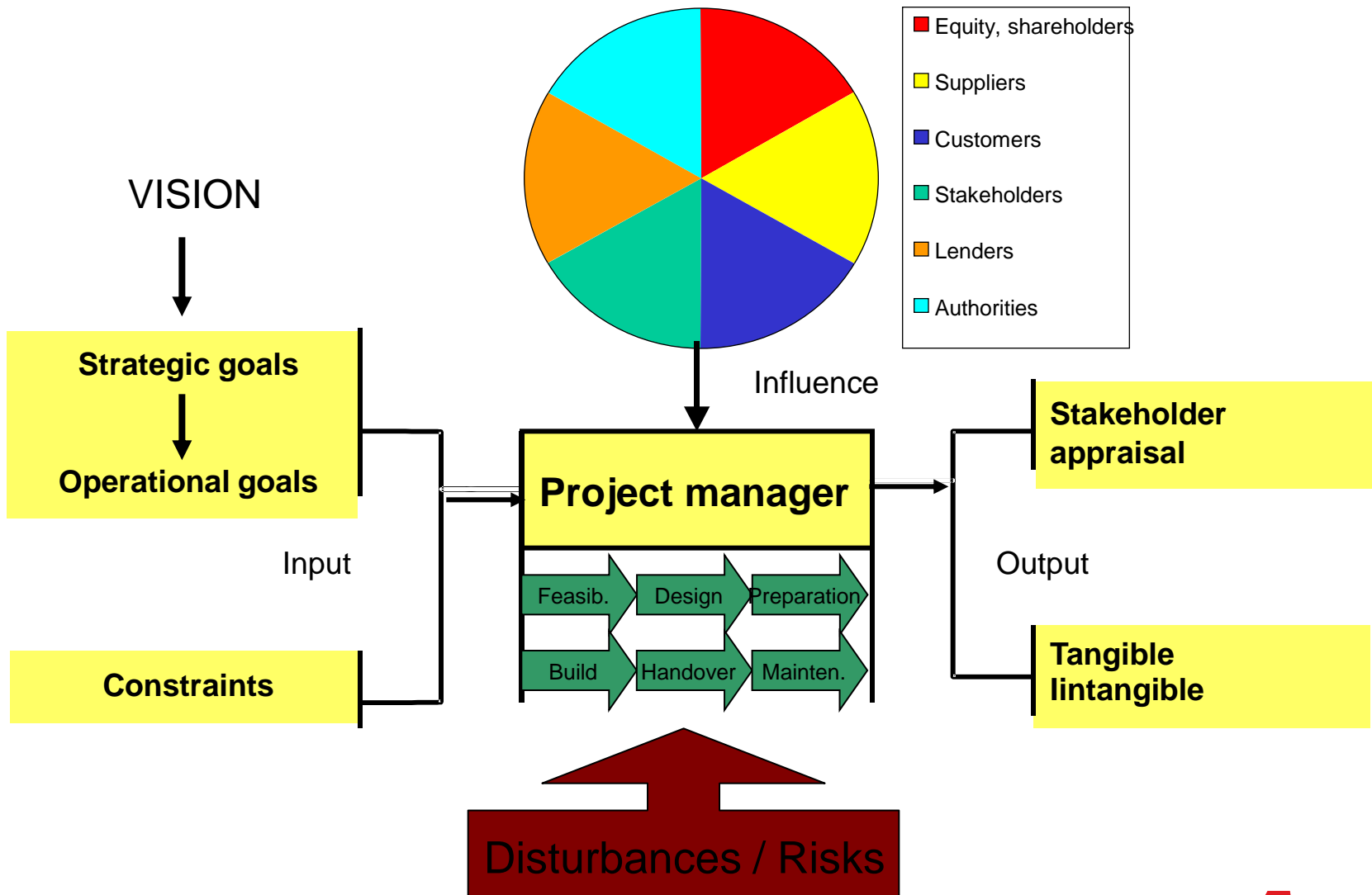


Risk Management Measures against risks

Evolution of control measures



Project Risk management approach



Project Risk management approach

- Structuring the project
- SMART project goals
- Project work break down structure
- Categories of risks
- The risk mechanism
(cause – incident – consequences)
- Priority setting



Categories of risks



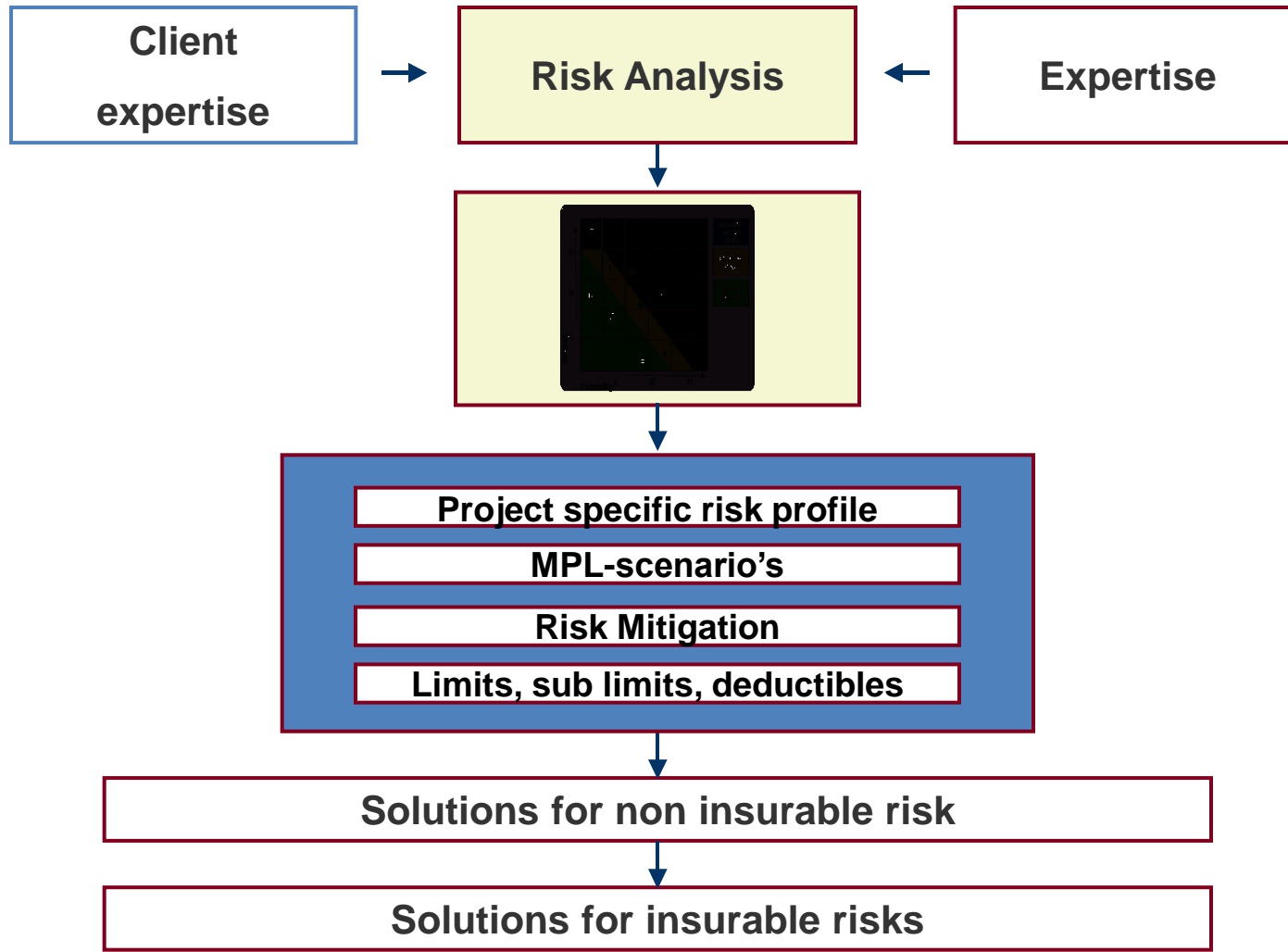
Risk Allocation Principles

Risk Allocation depends on three critical factors

- Interest of getting the risk
- Capability to Manage the risk
- Risk financing
- Risk management
 - Party who best equipped to manage
 - Party who has control
 - Party who bears interest in risk
- Risk allocation, contractual
 - Liability: breach
 - Biggest pockets
 - Best equipped to insure
 - Best to manage claims



The risk based Advisory



What Questions Do You Have?



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