



UNIVERSITY OF APPLIED SCIENCES

Introduction to Risk Management

exceed expectations

Programme

- ❑ What is risk management?
- ❑ Why do risk management
- ❑ What is a risk?
- ❑ What is a risk management process?
- ❑ Why use a risk management framework?

What is risk management?

- ❑ Focus on objectives of individuals, projects, processes and organisations
- ❑ Conscious / subconscious?
- ❑ Formal / informal?

- ❑ Subconscious + informal: daily life
- ❑ Conscious + formal: organisations
 - ❑ Costs time and money
 - ❑ Consider costs and benefits

- ❑ **Enterprise Risk Management**
- ❑ Project Risk Management

Why do risk management?

- ❑ Corporate Governance (development)
 - ❑ You might HAVE to...
 - ❑ ...as a big organisation
- ❑ Increasing complexity of the world
 - ❑ You might WANT to...
 - ❑ ...to keep your organisation alive

What is a risk?

- ❑ Definition of risk
 - ❑ *An uncertain event with consequences for an objective*

Key words:

- Uncertain (or possible)
- Event
- Consequences
- Objective

Inherent & residual

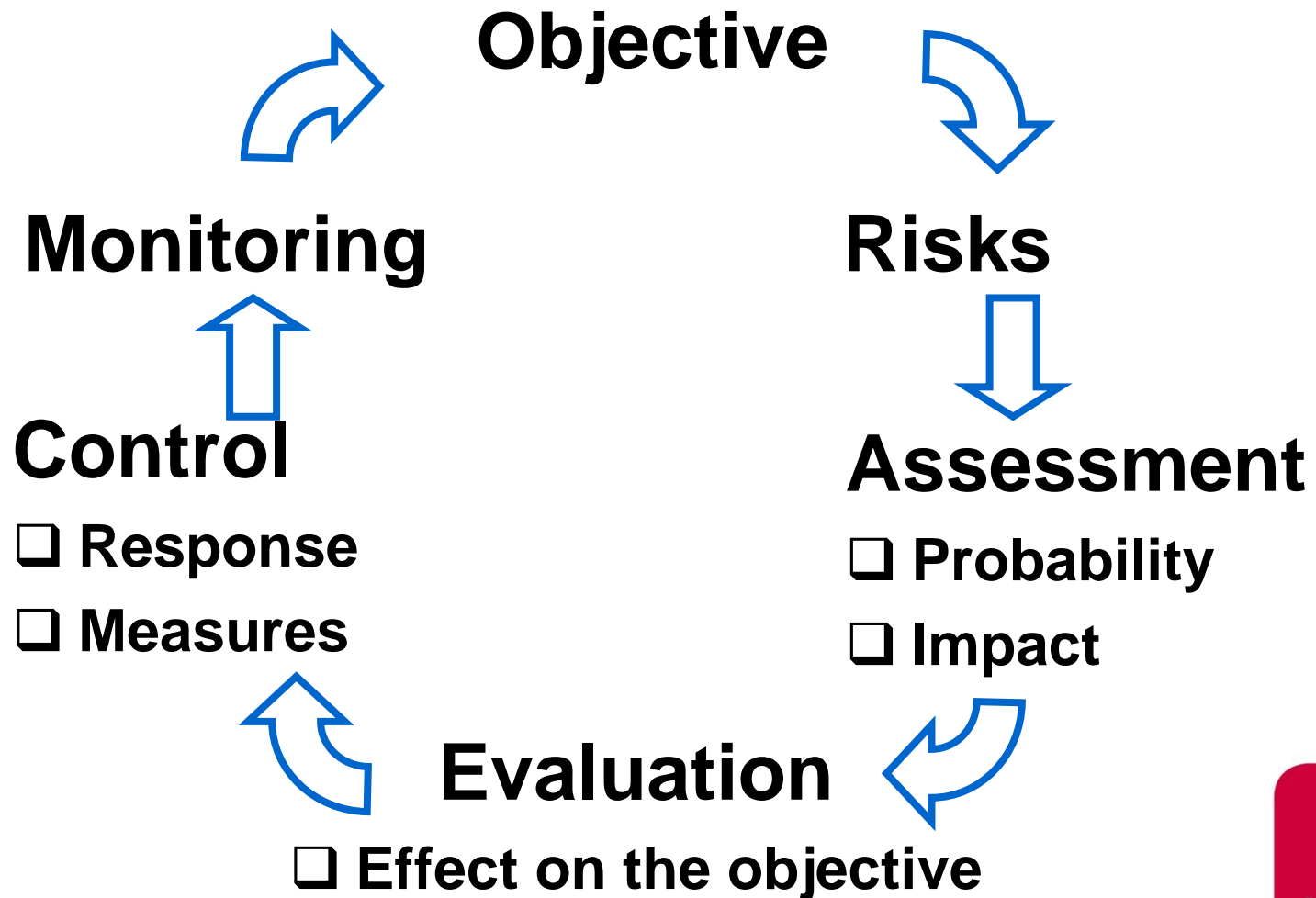
- ❑ Inherent risk
 - ❑ Without control measures
- ❑ Residual risk
 - ❑ With control measures



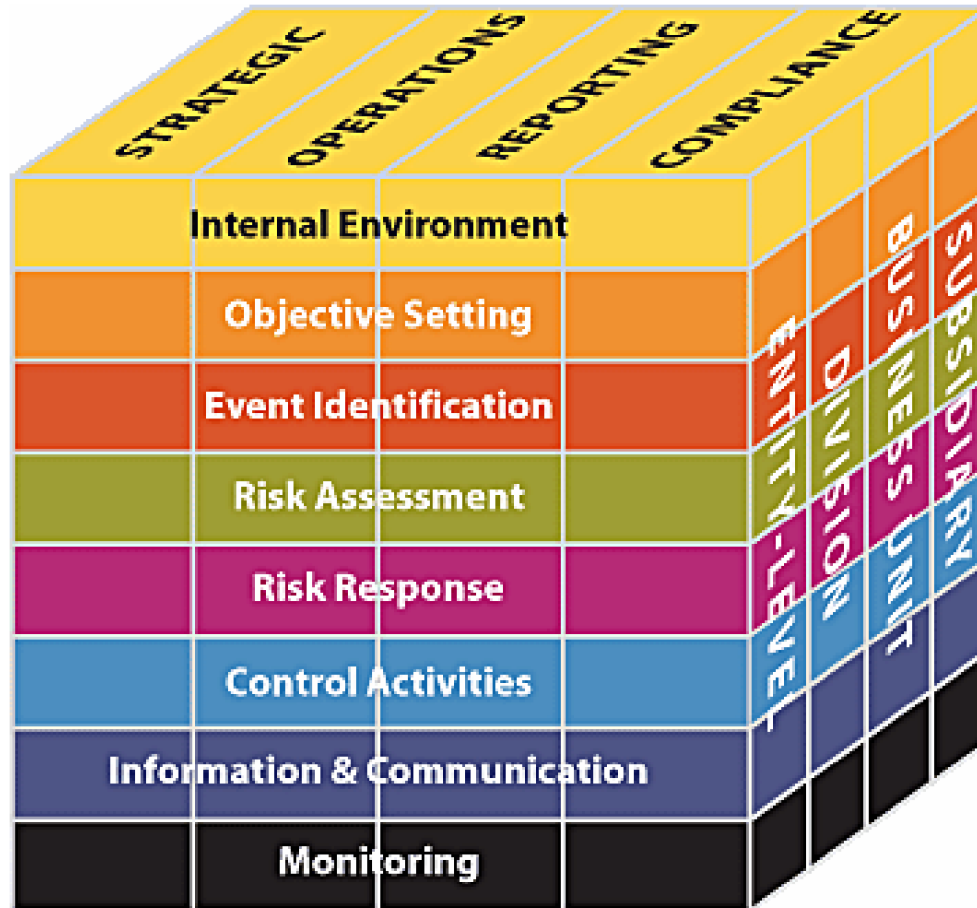
Static and dynamic risk

- ❑ Static risk (also: pure risk)
 - ❑ A static risk only has negative consequences
- ❑ Dynamic risk (also: speculative)
 - ❑ A dynamic risk can have negative and positive consequences

Risk management process



COSO ERM framework (2004)



Origin: COSO – Accountants Organisations

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Internal Environment



- ❑ Basis for the other components
- ❑ Influences risk awareness of employees
- ❑ Tone of the organisation
 - ❑ Risk management philosophy
 - ❑ Board oversight
 - ❑ Values and capabilities of employees
 - ❑ Internal organisation
 - ❑ **Risk appetite**

What is risk appetite?

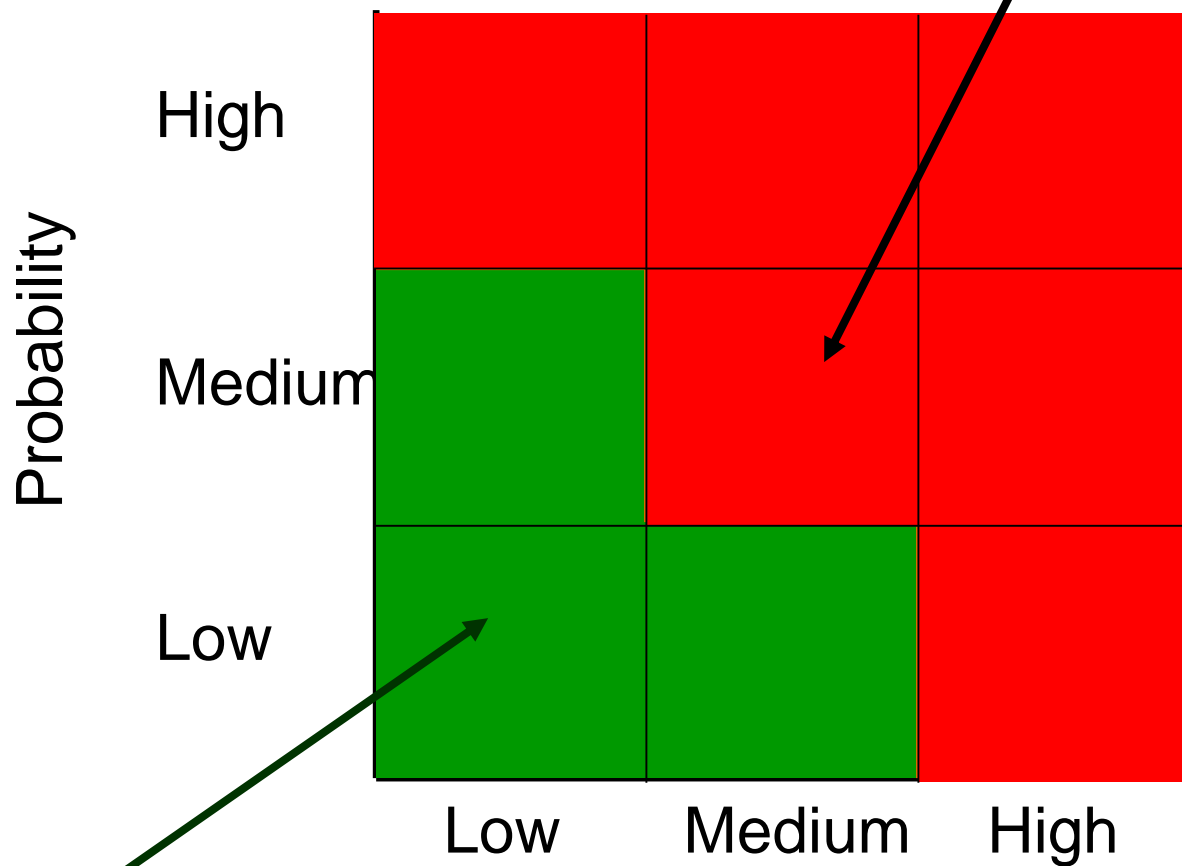
- ❑ The degree of risk, on a broad level, that the organisation is prepared to accept in pursuit of value, its mission and its vision



- ❑ How much risk you are willing to accept

Risk matrix

Outside risk appetite



Inside risk appetite

Impact

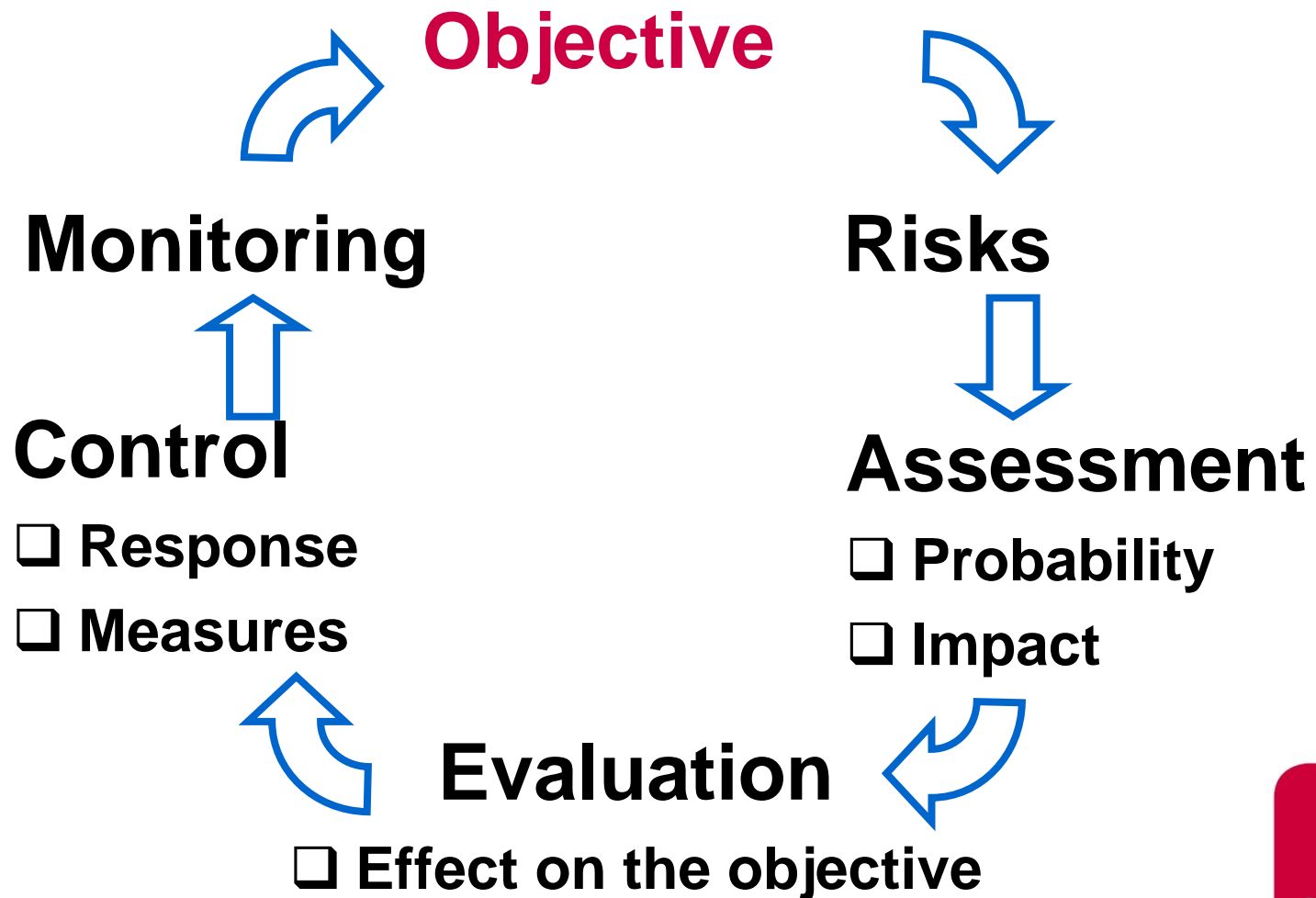
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Objective Setting



- ❑ Strategic objectives
- ❑ Balanced Scorecard
 - ❑ Critical success factors (CSF)
 - ❑ Key performance indicators (KPI)
- ❑ SMART
 - ❑ Specific
 - ❑ Measurable
 - ❑ Acceptable
 - ❑ Reasonable
 - ❑ Time-bound

Risk management process



Types of objectives

- ❑ Standard organisational objectives
 - ❑ Turnover and profit
 - ❑ And business continuity
- ❑ But there are also other ones
 - ❑ Safety
 - ❑ Customer satisfaction
 - ❑ Timeliness
 - ❑ Image
 - ❑ ...

SMART

- ❑ Having an **income** of €50.000 in 2017
 - ❑ Specific
 - ❑ Measurable
 - ❑ Acceptable
 - ❑ Reasonable
 - ❑ Time-bound

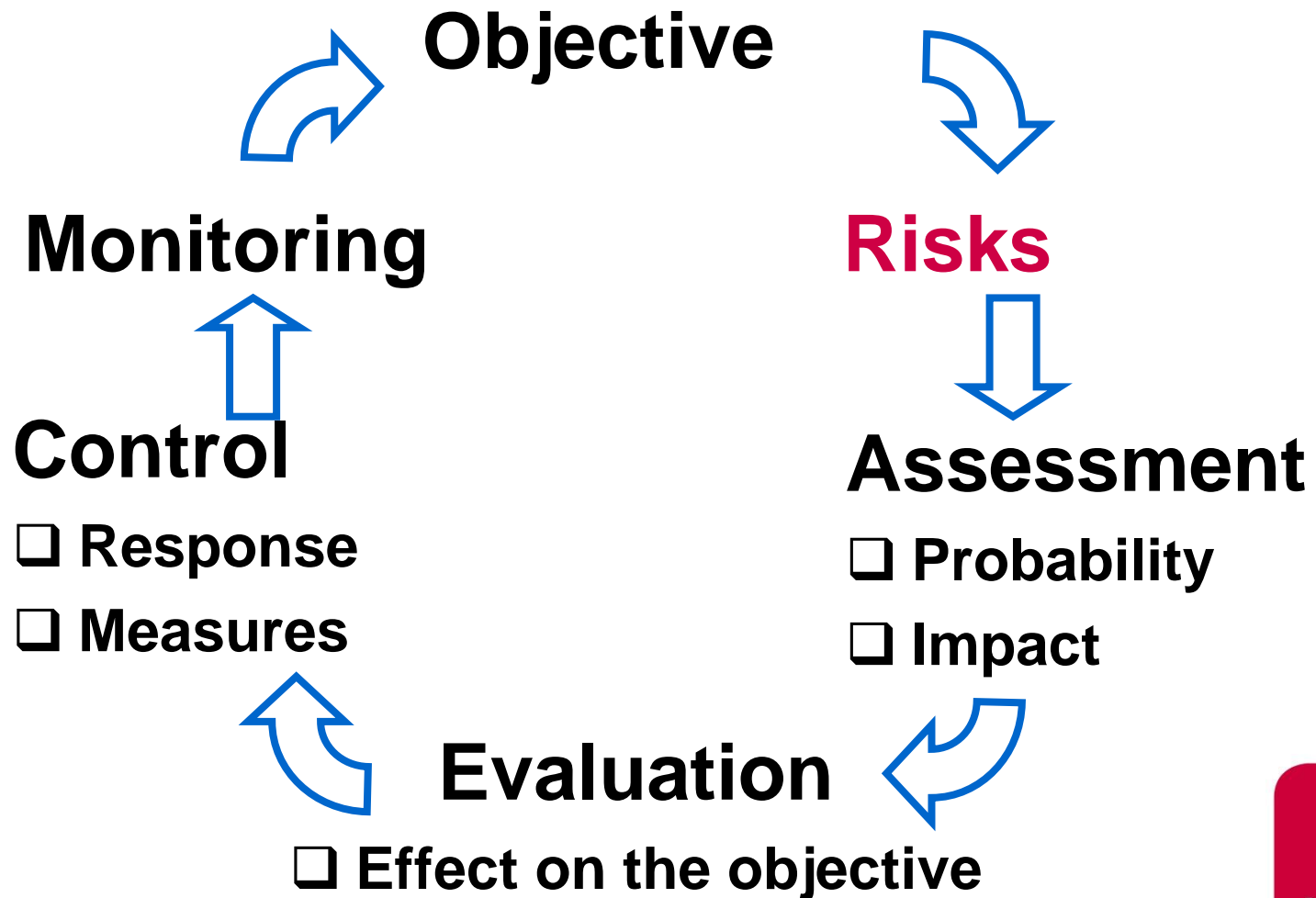
- ❑ Not meeting this objective is the threat
 - ❑ Which is caused by risks

Event Identification



- ❑ Events
- ❑ With positive consequences: opportunities
 - ❑ Objective setting
- ❑ With negative consequences: threat (or risk)
 - ❑ Risk assessment
 - ❑ Risk response
- ❑ Considering internal and external factors, like:
 - ❑ Internal Environment
 - ❑ Objective Setting

Risk management process

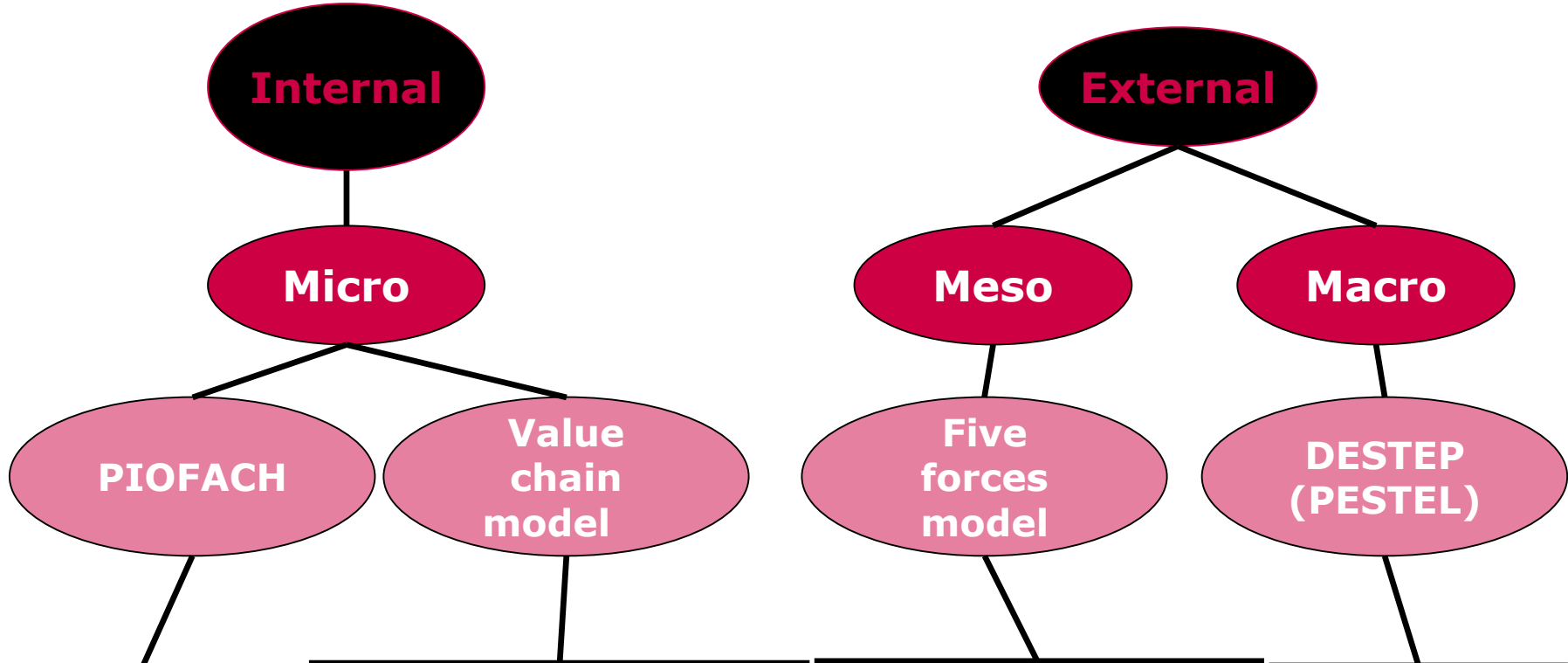


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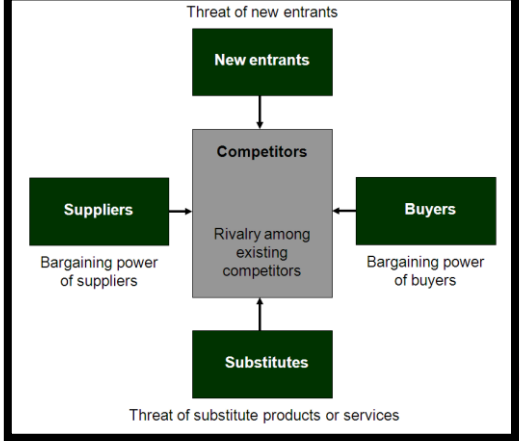
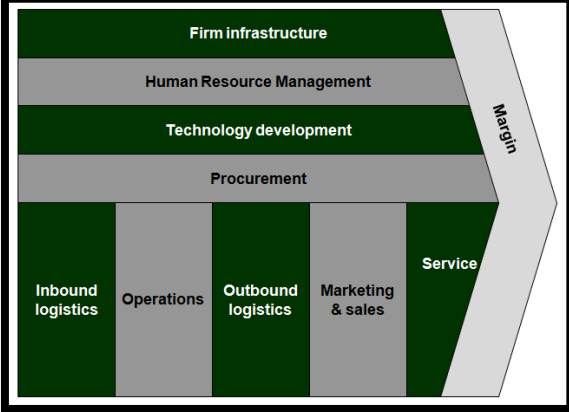
Risk as an event

Start your formulation with the word 'The'	<i>The</i>
Add a verb	<i>leaking</i>
Make use of words to clarify the risk	<i>of innovative ideas to the competitor</i>
If necessary indicate what the consequences are for the objective	<i>with the consequence that we lose our advantage</i>

Environments



Personal
Information
Organisation
Financial
Administration
Communication
Housing



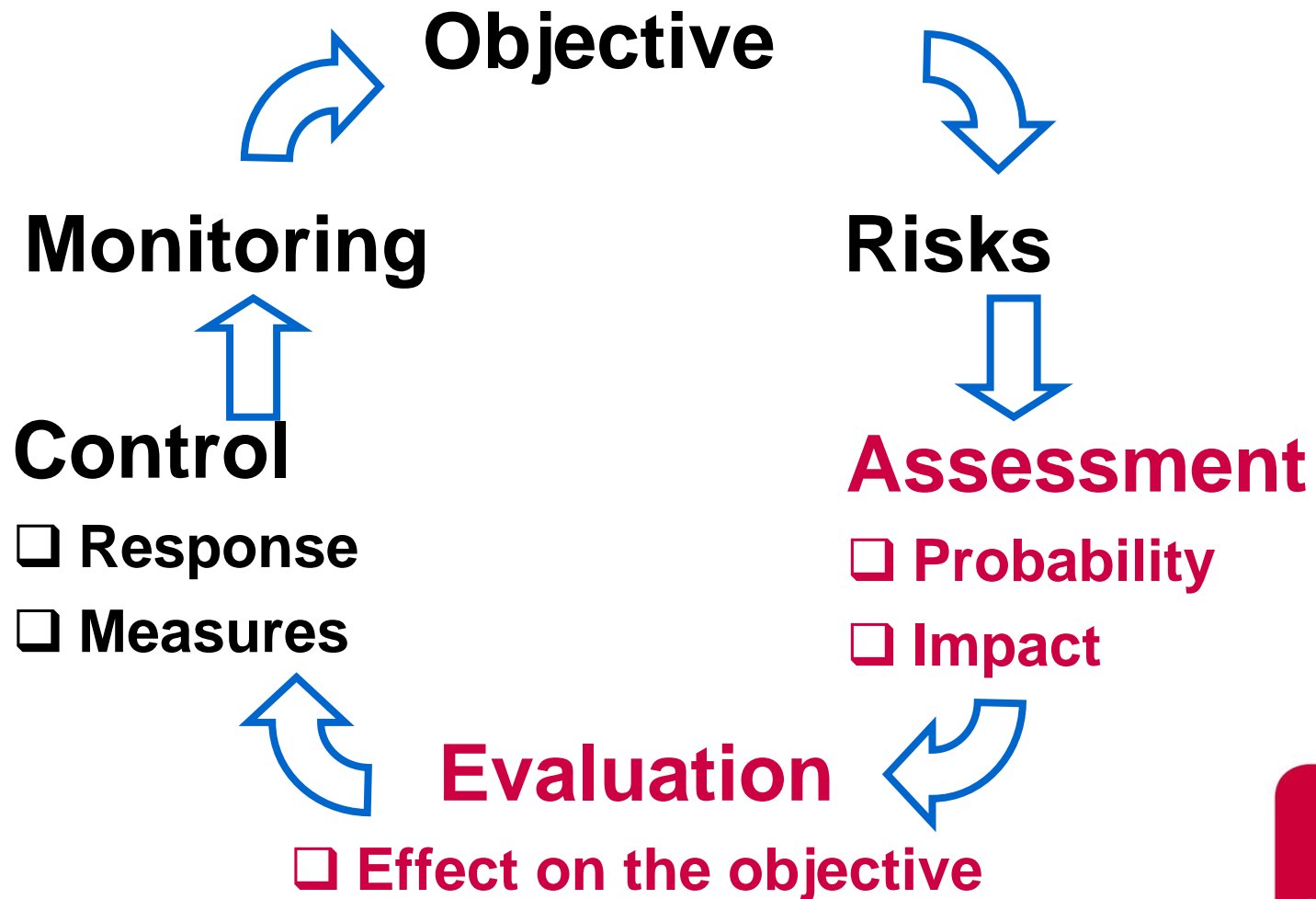
Demographics
Economy
Society
Technology
Ecological
Political

Risk Assessment



- Estimate size per event
 - Probability size
 - Impact size
- From a size in words to a size in numbers
 - High impact -> €100.000
 - Not very likely -> 5%
- Evaluation of events
 - Determine priorities
 - Top .. risks

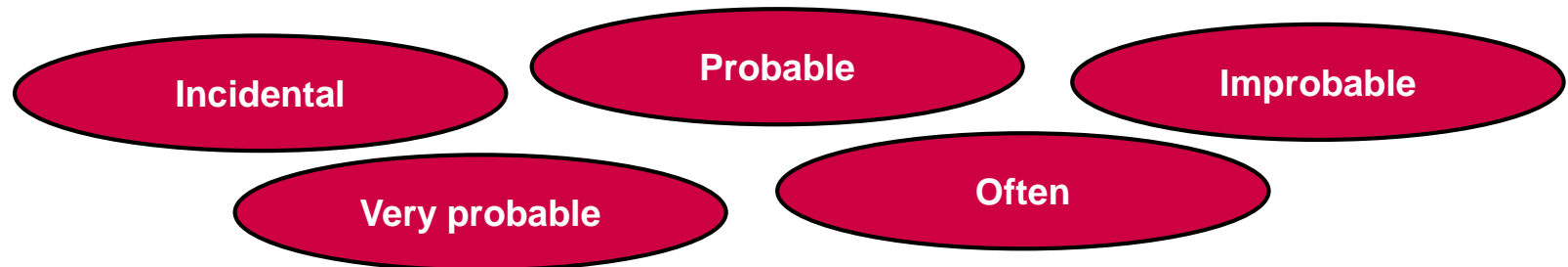
Risk management process



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Ranking words...

- Place the following words in the correct order

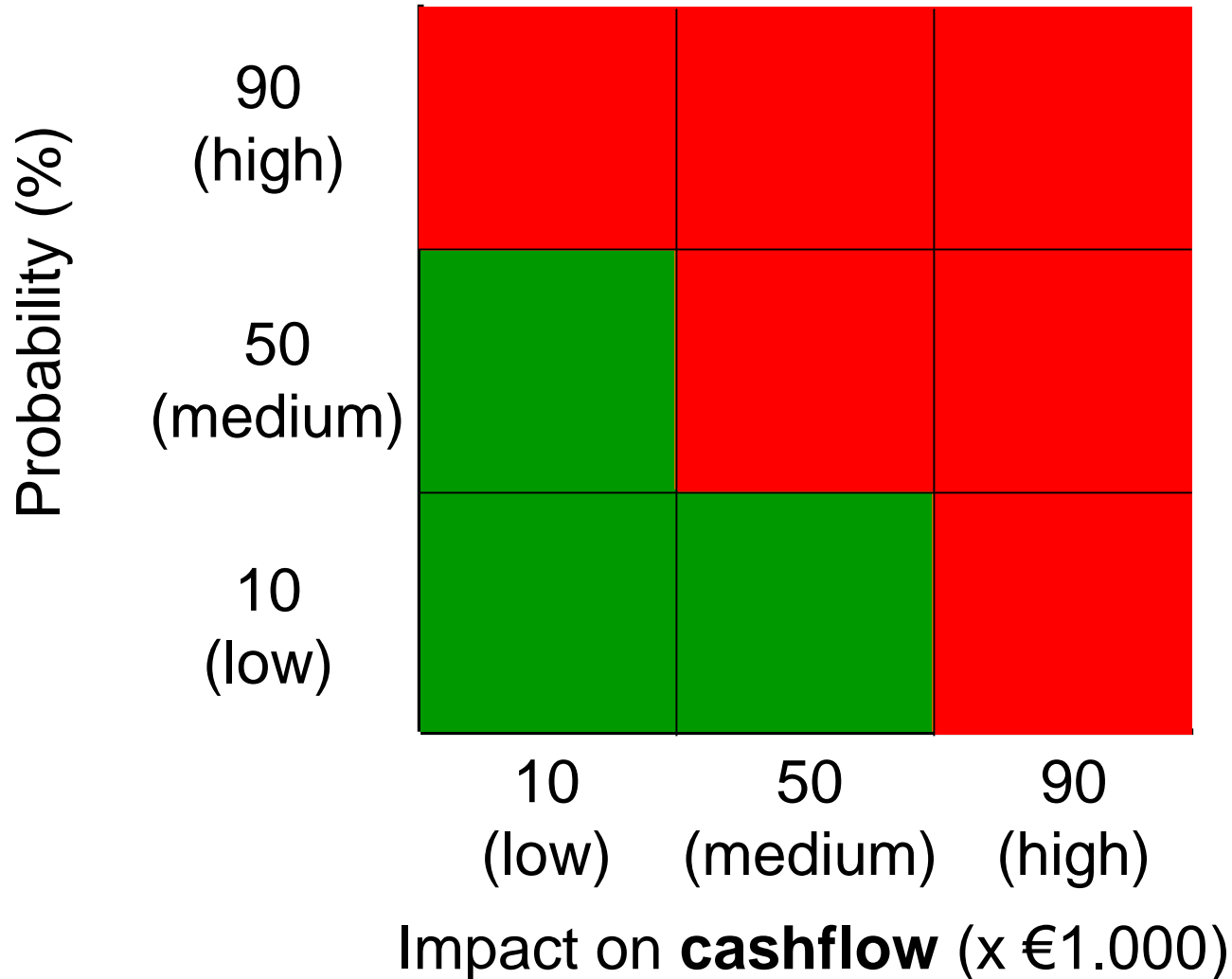


Version	I	II	III
Rank			
5	Very probable	Often	Very probable
4	Probable	Incidental	Often
3	Often	Very probable	Probable
2	Incidental	Probable	Incidental
1	Improbable	Improbable	Improbable

Relate risk impact to objectives

- ❑ Measure impact in the objective's units
- ❑ Example objectives and their units
 - ❑ Financial – turnover
 - ❑ Safety – number of accidents
 - ❑ Customer satisfaction – grade
 - ❑ Timeliness – minutes late
 - ❑ Image – grade

Risk matrix



Impact on **cashflow** (x €1.000)

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Risk register (1.)

Risk #	Risk description	Prob. (in %)	Impact (in €)	Expected value
1	<i>The...</i>	<i>... %</i>	<i>€ ...</i>	<i>(% x €)</i>
2	<i>etc.</i>			

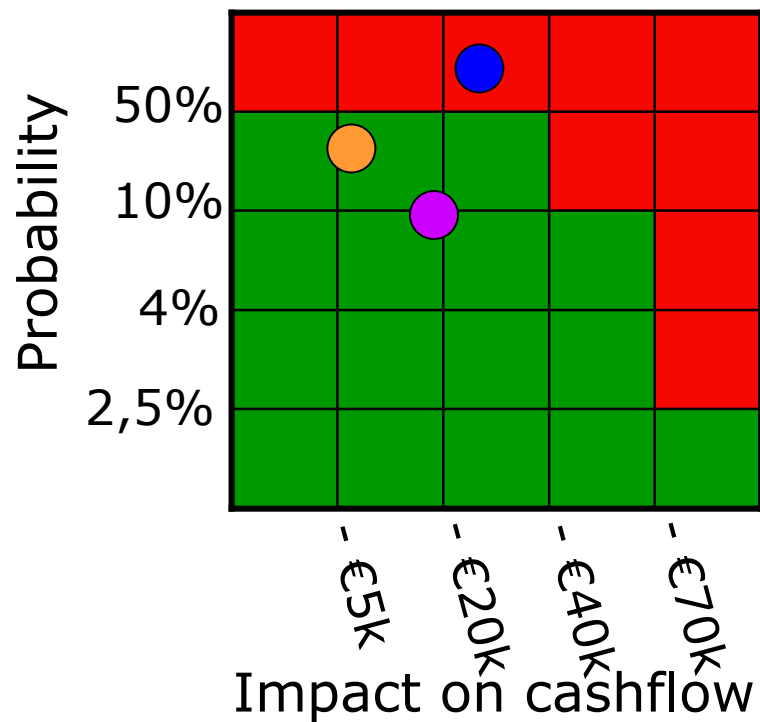
- ❑ Risk number
- ❑ Risk description (the – verb - ... - ...)
- ❑ Probability (%)
- ❑ Impact (€)
- ❑ Expected value (% x €)

Example for an organisation

Some risks and numbers

	Probability	Impact (effect on net cash flow)		
		Max	Mode	Min
Bankruptcy of an important customer	10%	— € 20.000	— € 12.000	— € 10.000
Prolonged down time of machine	33%	— € 8.000	— € 5.000	— € 2.000
Prolonged illness of personnel	67%	— € 25.000	— € 24.000	— € 15.000

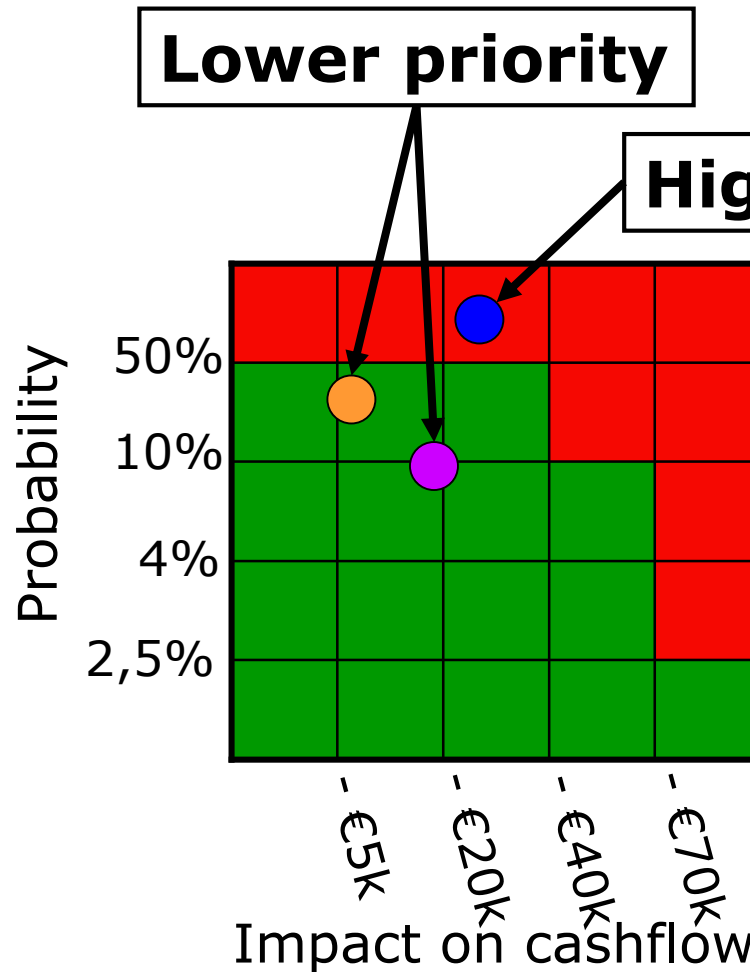
	Probability	Max impact (on cash flow)
Bankruptcy of important customer	10%	– € 20.000
Prolonged down time of machine	33%	– € 8.000
Prolonged illness of personnel	67%	– € 25.000



Risk Appetite
expressed in
Cash Flow

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Evaluate every risk's priority



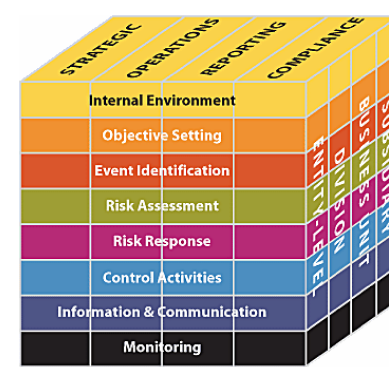
Lower priority

High priority

Risk Appetite
expressed in
Cash Flow

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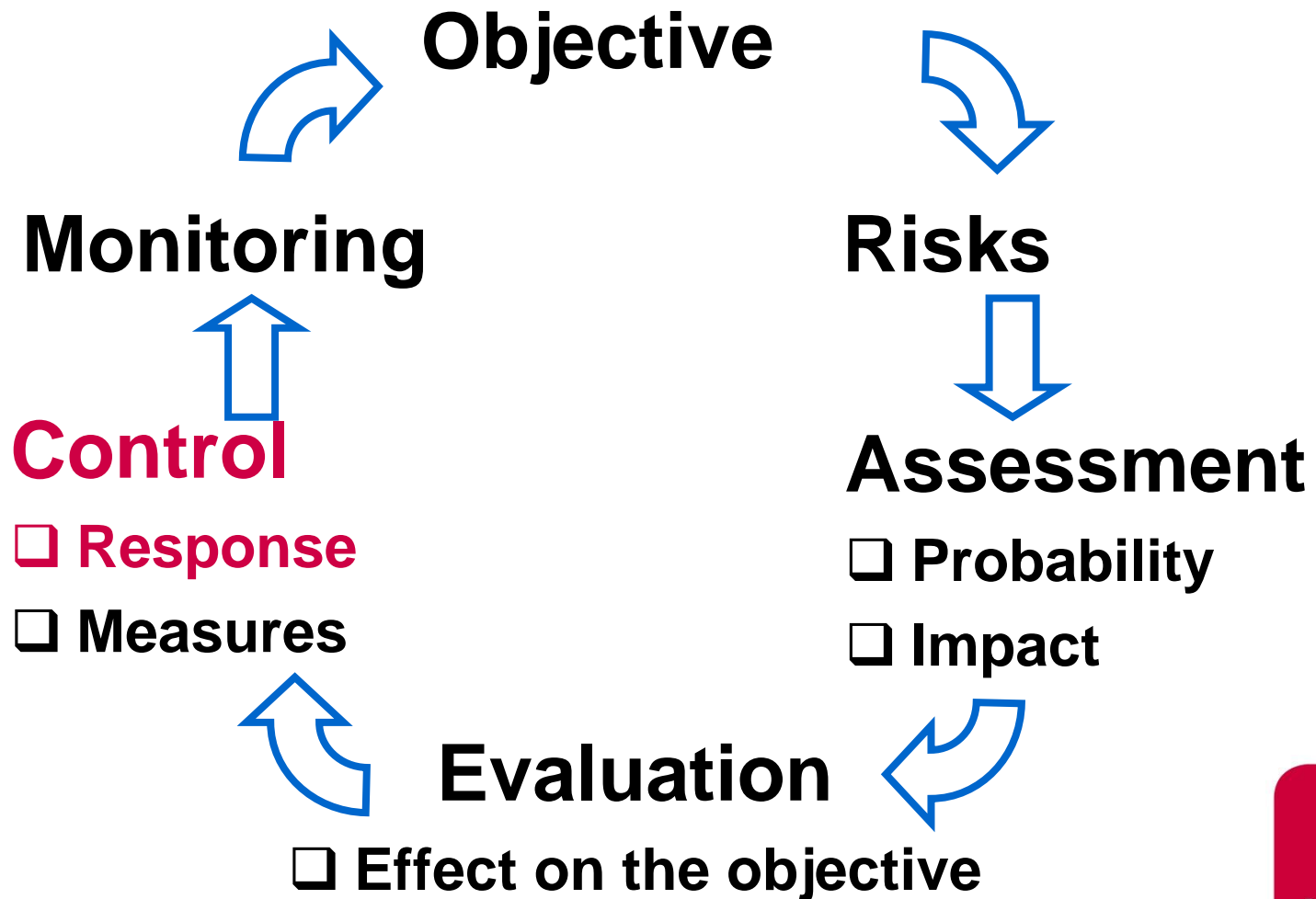
Risk Response



- ❑ Treat
- ❑ Transfer
- ❑ Take
- ❑ Terminate

- ❑ The choice of taking measures depends on:
 - ❑ Benefit
 - ❑ Effects on probability and impact
 - ❑ Cost
 - ❑ How much implementation costs

Risk management process



Risk response

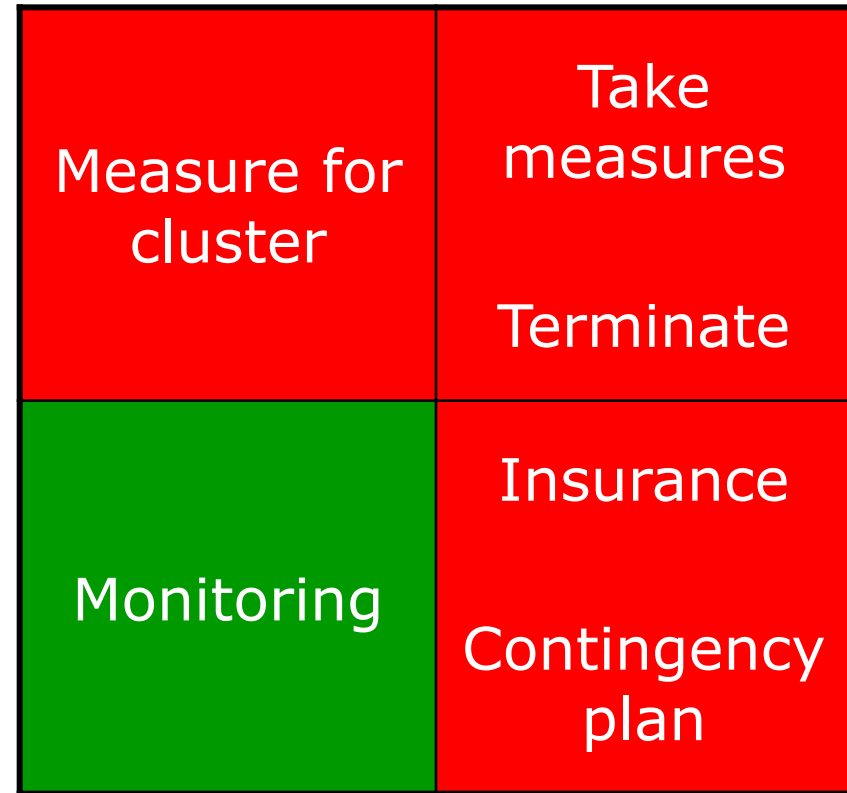
- ❑ Treat = Keep the risk yourself and take your own control measures
 - ❑ *Decrease either or both impact and probability*
- ❑ Transfer = Have others take the risk for you)
 - ❑ *Such as insurance or outsourcing*
- ❑ Terminate = Not taking any risk
 - ❑ *For example closing an activity*
- ❑ Take = Accept the risk and not take measures
 - ❑ *Inside AND outside risk appetite*

Control Activities



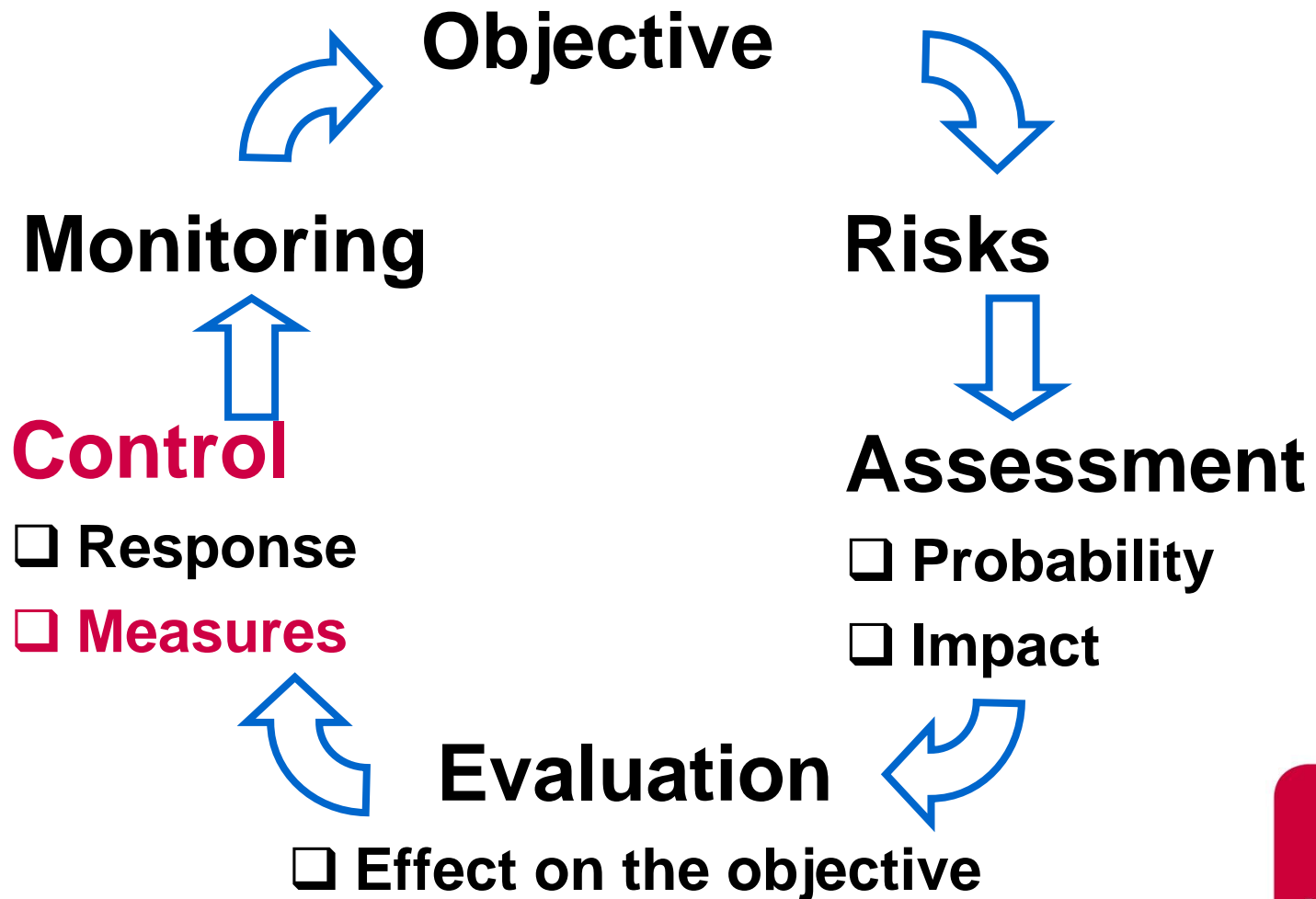
- Policy and procedures to implement a risk response

Likelihood

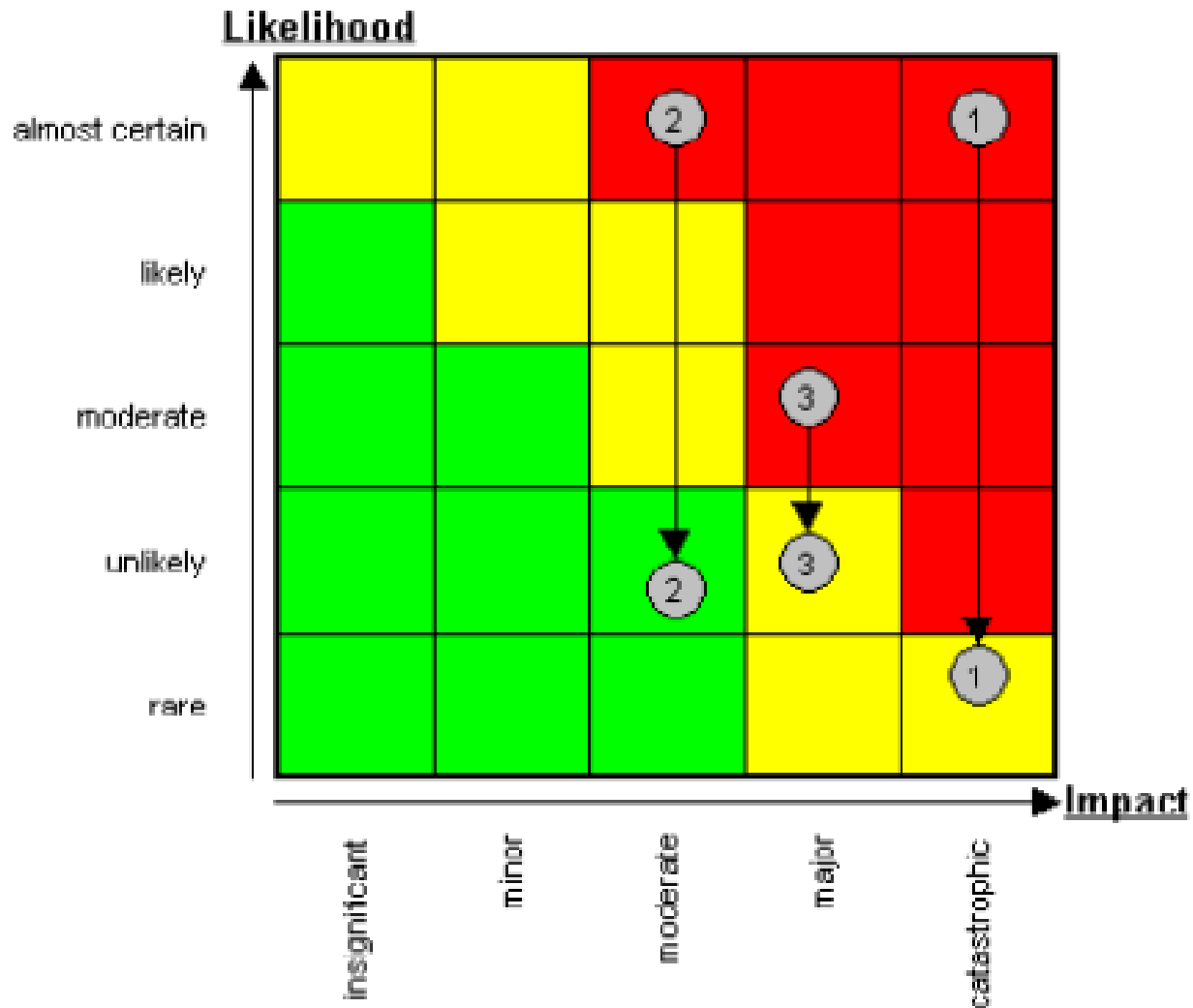


Impact

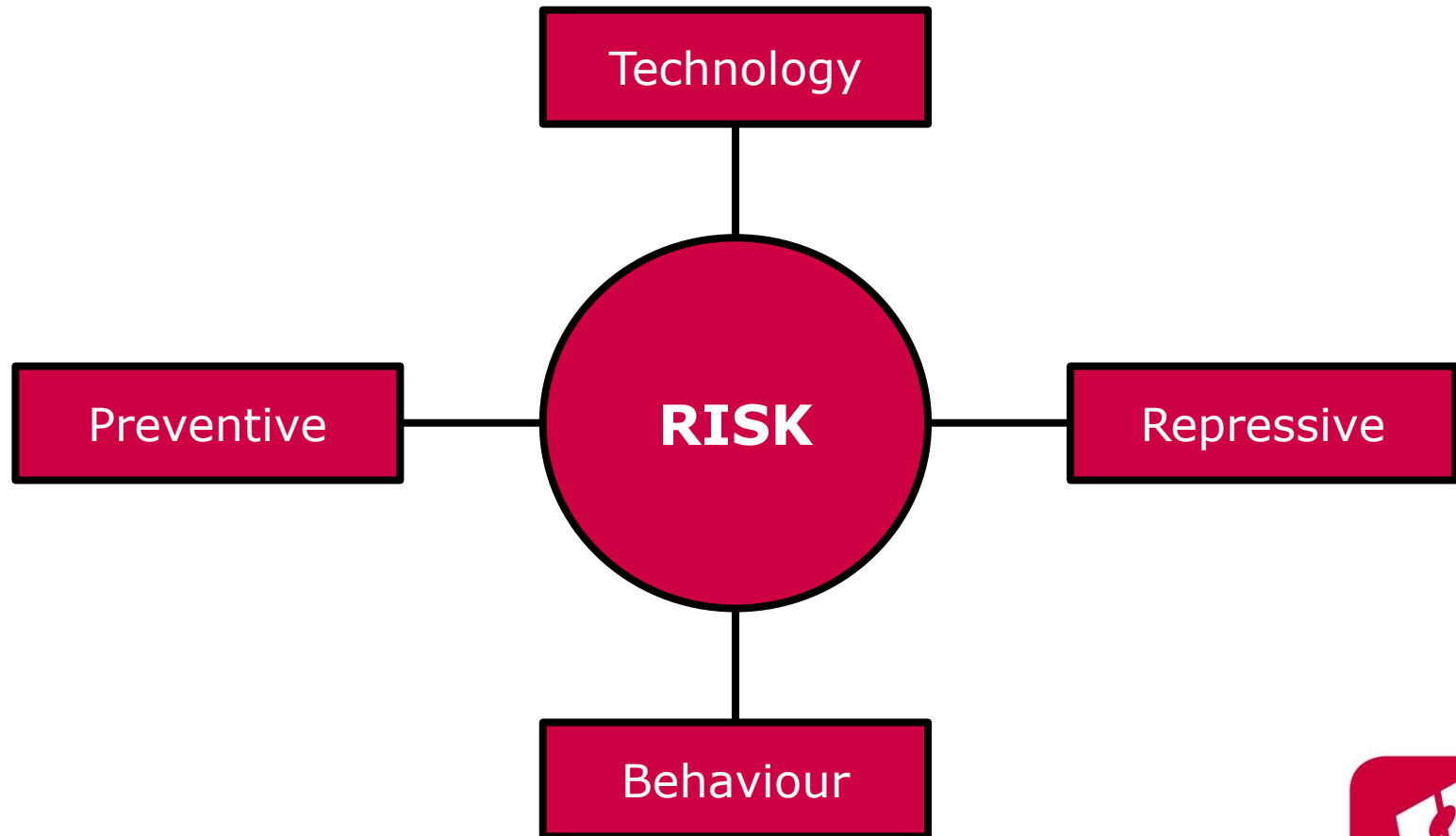
Risk management process



Example: IBM



Types of measures



Types of measures (example)



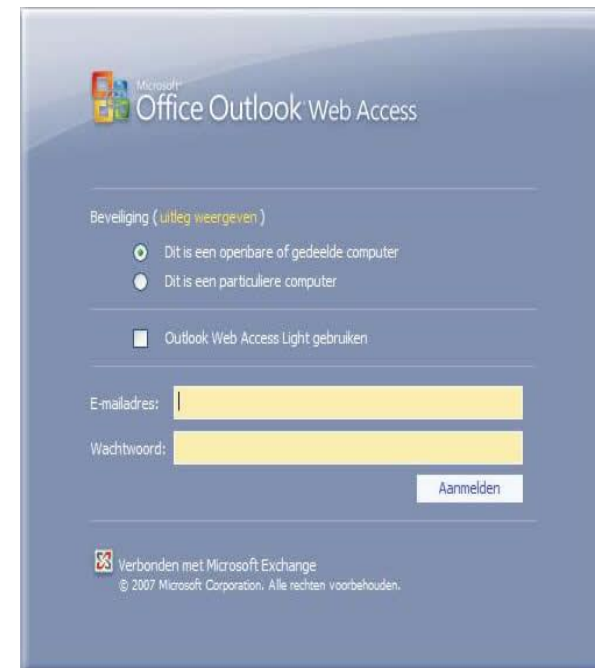
Hard & Soft Controls

Hard control:

- ❑ Measurable agreements and guidelines of which can be objectively determined if they have been followed
- ❑ Example: Passwords

Soft control:

- ❑ Measures related to personal performance and behaviour
- ❑ Example: Integrity



Microsoft Office Outlook Web Access

Beveiliging (uitleg weergeven)

Dit is een openbare of gedeelde computer

Dit is een particuliere computer

Outlook Web Access Light gebruiken

E-mailadres:

Wachtwoord:

Aanmelden

Verbonden met Microsoft Exchange
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Example

Considering the objective:

Net cash flow: + € 20.000

- ❑ We have the following risks
 - ❑ Bankruptcy of an important customer
 - ❑ Prolonged down time of a production machine
 - ❑ Prolonged illness of personnel

Example

Our risk assessment:

	Probability	Impact		
		Max	Mode	Min
Bankruptcy of an important customer	10%	— € 20.000	— € 12.000	— € 10.000
Prolonged down time of machine	33%	— € 8.000	— € 5.000	— € 2.000
Prolonged illness of personnel	67%	— € 25.000	— € 24.000	— € 15.000

Example

We decide to purchase insurance against prolonged illness of employees

- ❑ Own risk: € 2.000
- ❑ Premium: € 1.000

Prolonged illness of employees	Probability	Impact		
		Max	Mode	Min
Inherent	67%	— € 25.000	— € 24.000	— € 15.000
Residu	67%	— € 2.000		

Risk register (2.)

Risk #	Risk description	Prob. (in %)	Impact (in €)	Expected value	Risk response	Control measures
1	<i>The...</i>	<i>... %</i>	<i>€ ...</i>	<i>(% x €)</i>	<i>(4T's)</i>	<i>... + ...</i>
2	<i>etc.</i>					

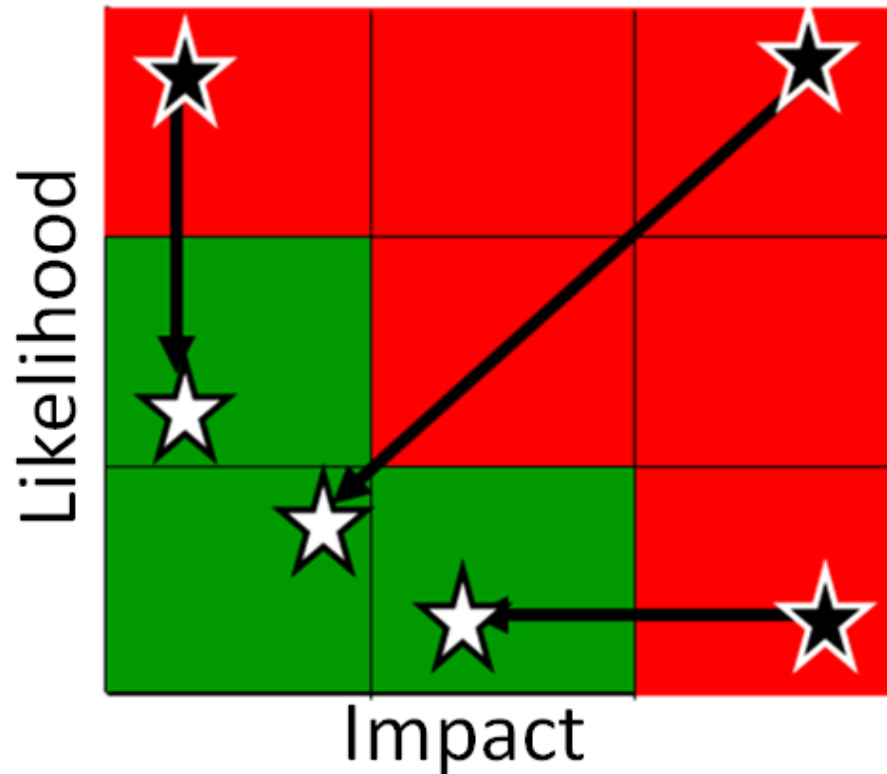
- ❑ Risk number
- ❑ Risk description (the – verb - ... - ...)
- ❑ Probability (%)
- ❑ Impact (€)
- ❑ Expected value
- ❑ **Risk response**
- ❑ **Control measures**

Risk register (3.)

Risk #	Risk description	Control measures	Prob. (in %)	Impact (in €)	Expected value
1	<i>The...</i>	<i>... + ...</i>	<i>... %</i>	<i>€ ...</i>	<i>(% x €)</i>
2	<i>etc.</i>				

- ❑ Risk number
- ❑ Risk description (the – verb - ... - ...)
- ❑ **Probability after control measures (%)**
- ❑ **Impact after control measures (€)**
- ❑ **Expected value after control measures**

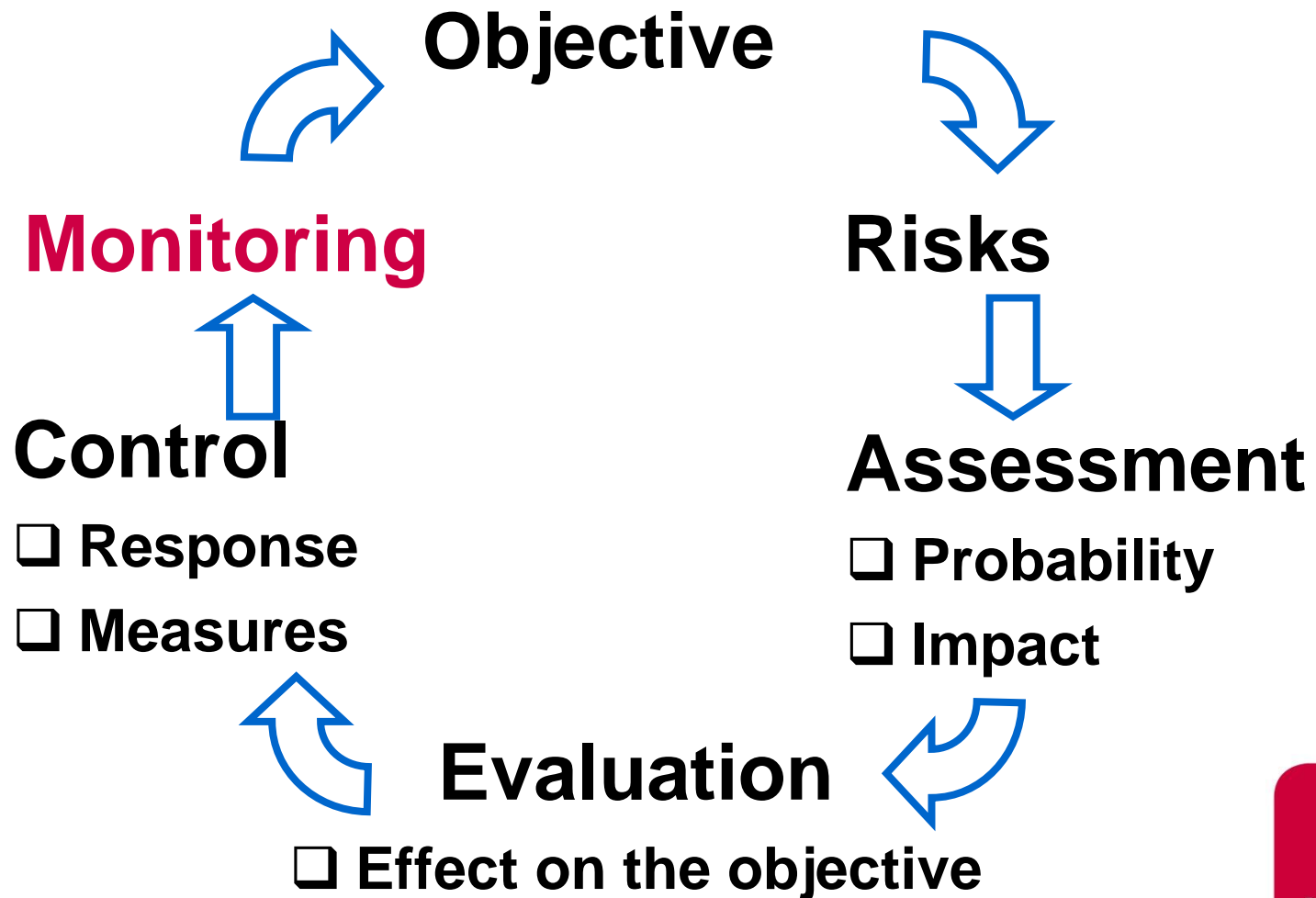
From inherent to residual risk



★ Inherent risk ☆ Residual risk

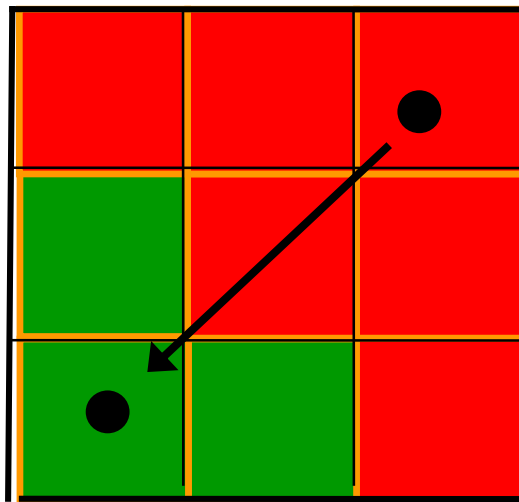
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Risk management process



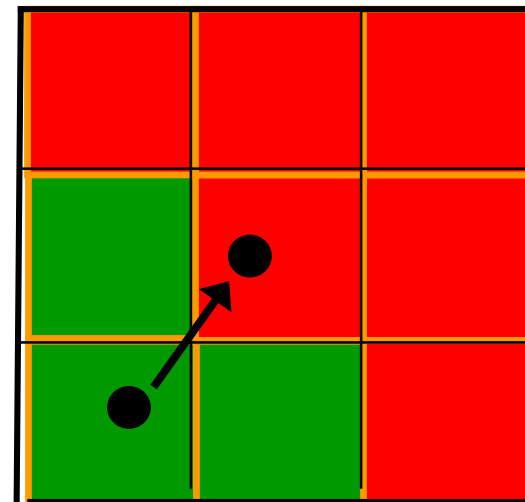
Monitoring after implementing (1.)

- ❑ Risk management seems effective at first sight

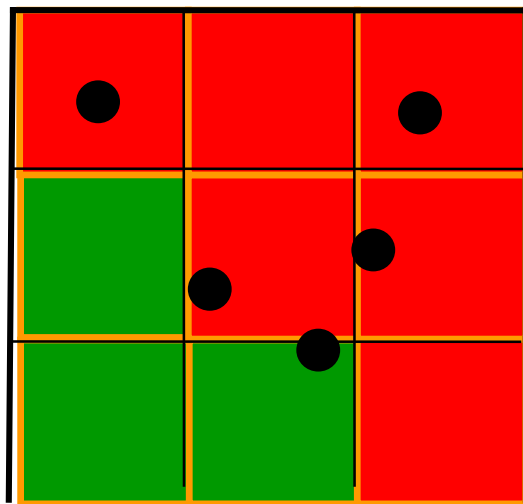


However...

- ❑ Size of risk increases
- OR
- ❑ Control measure is not very effective



Monitoring after implementing (2.)

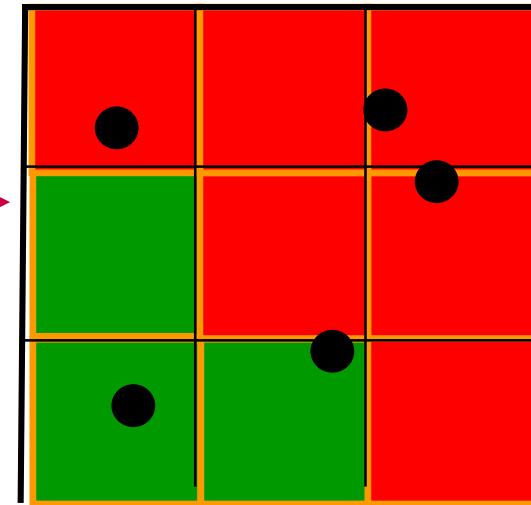


Current risk profile



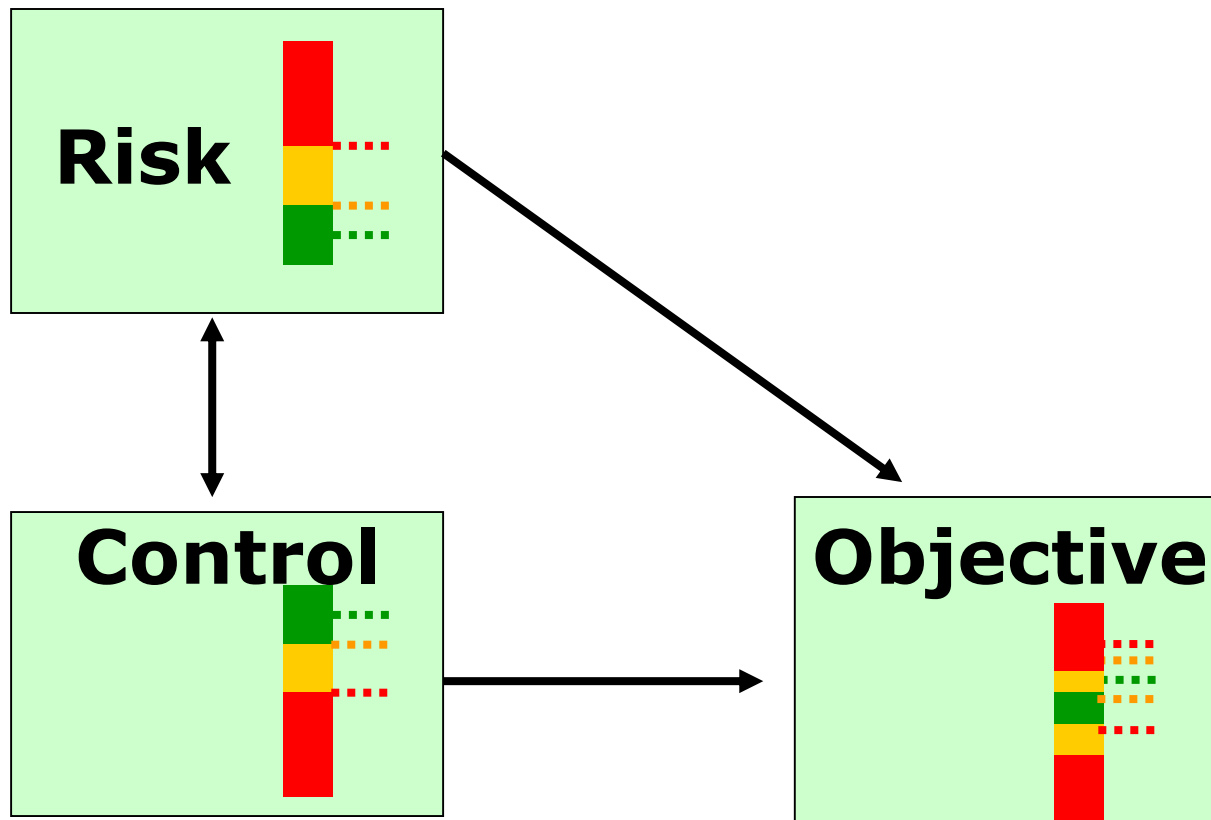
CAUSES:

- ❑ External developments
- ❑ Changing objectives
- ❑ Internal developments
- ❑ Information from risk profiles elsewhere in the organisation
- ❑ Control measures



Updated risk profile

Balance of risk, control and objective



Risk management process

