

# Decision Making Under Uncertainty

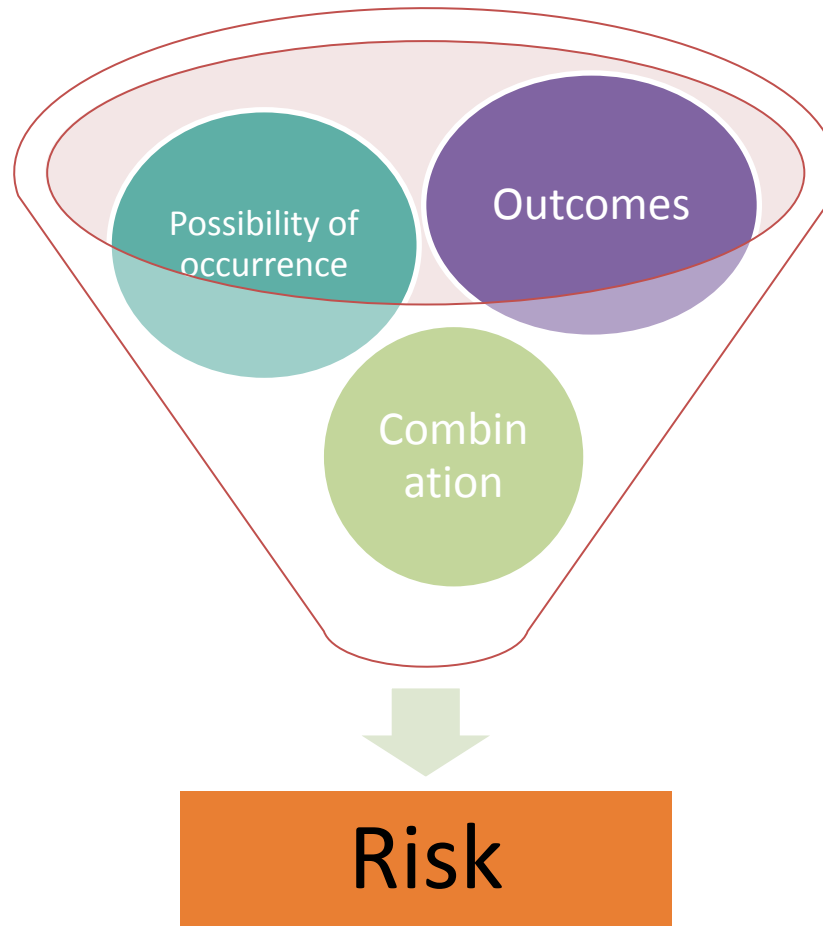
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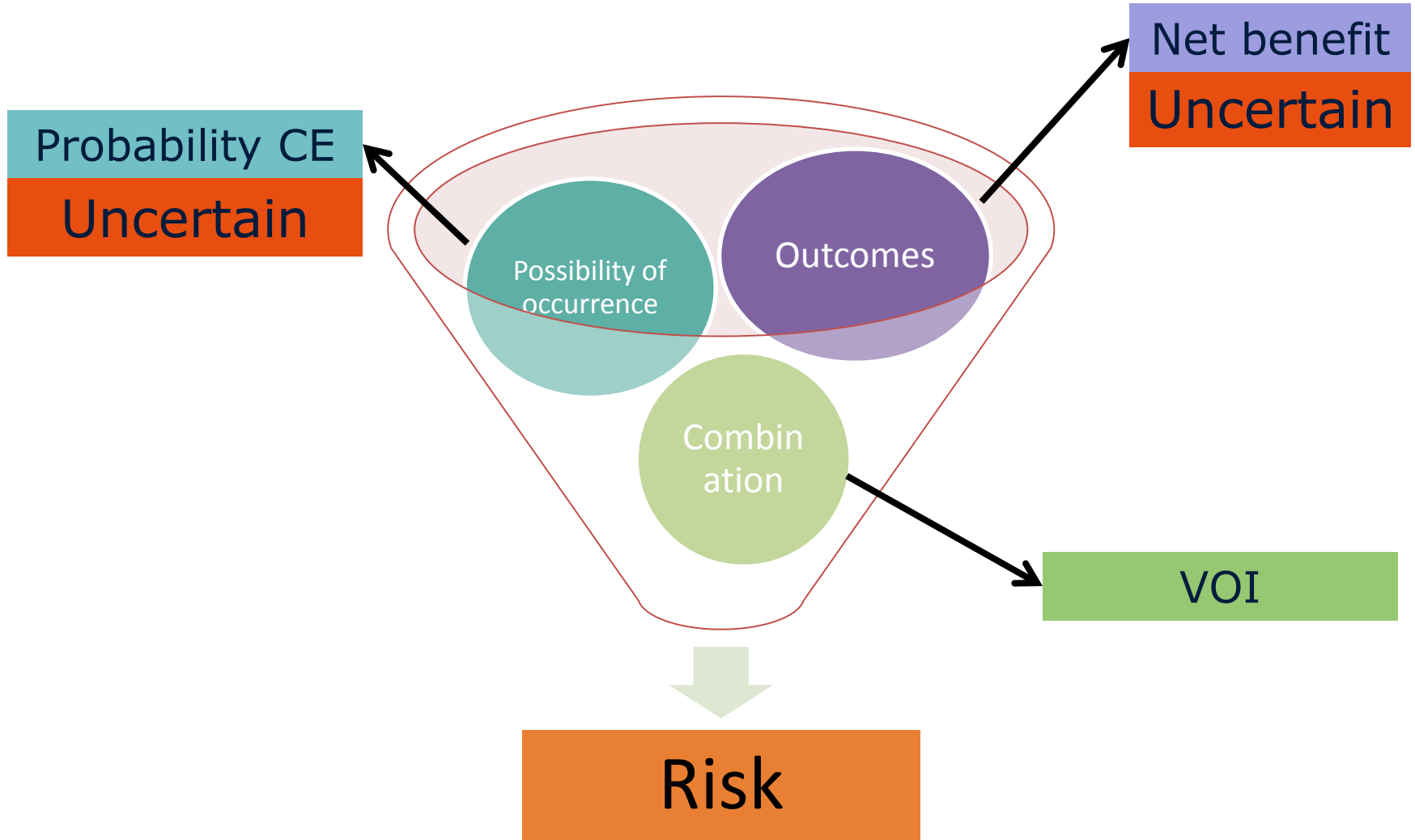
With thanks to colleagues: Alan Brennan, Janneke Grutters,  
Manuela Joore, Xavier Pouwels, Bram Ramaekers, Mark Strong,  
Allan Wailoo, Ben Wijnen

Disclaimer: no conflicts of interest to disclose

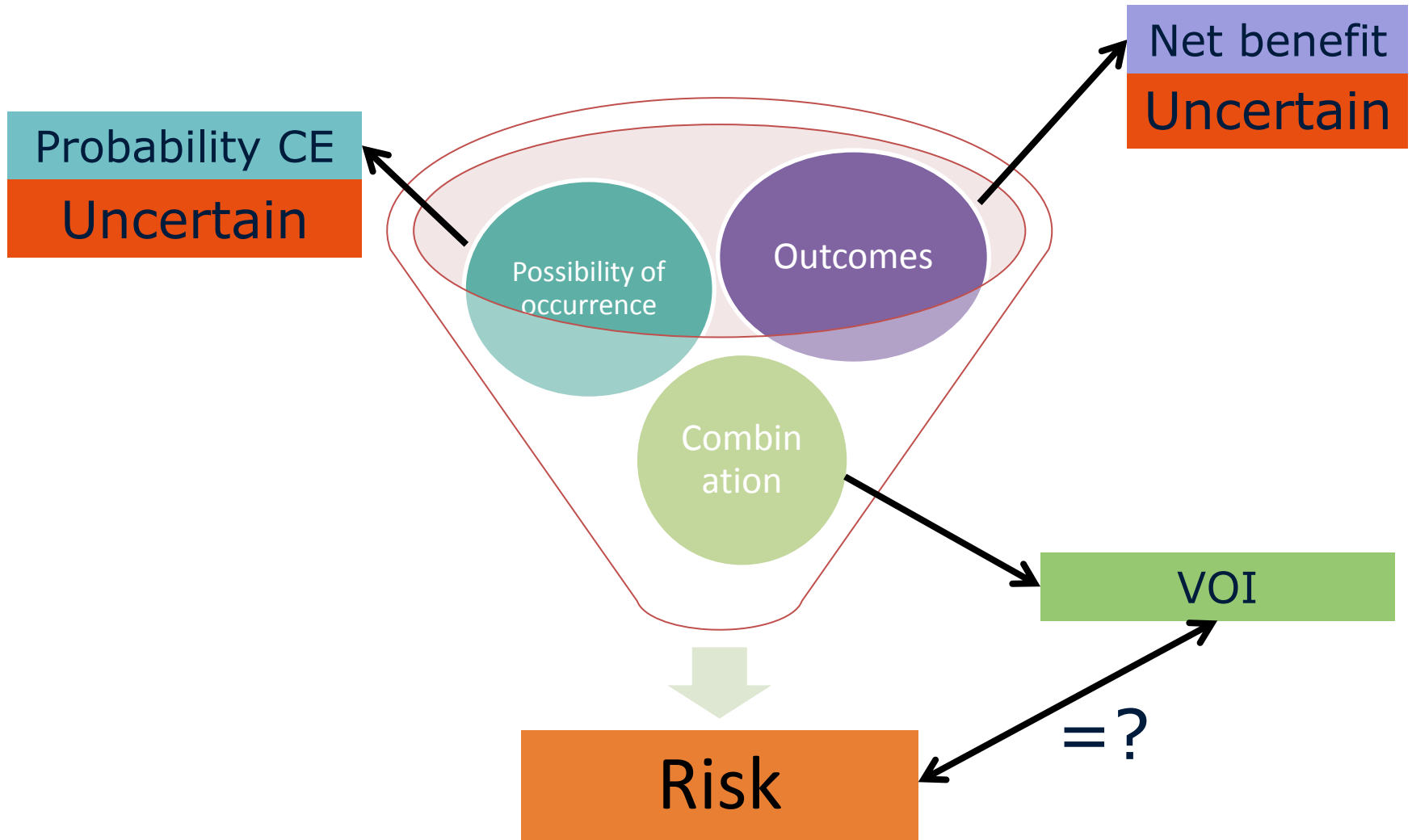
# Uncertainty → Risk



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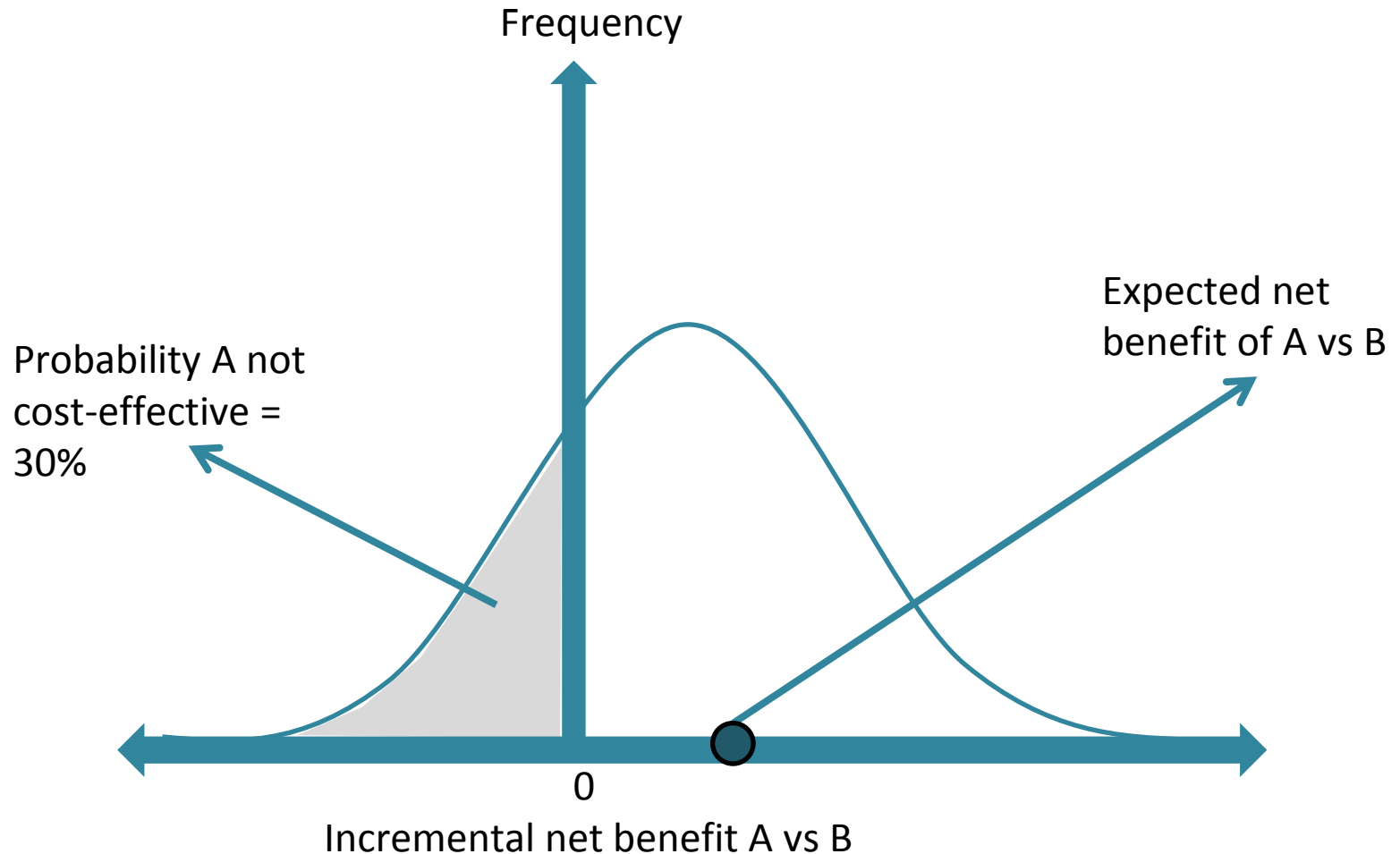


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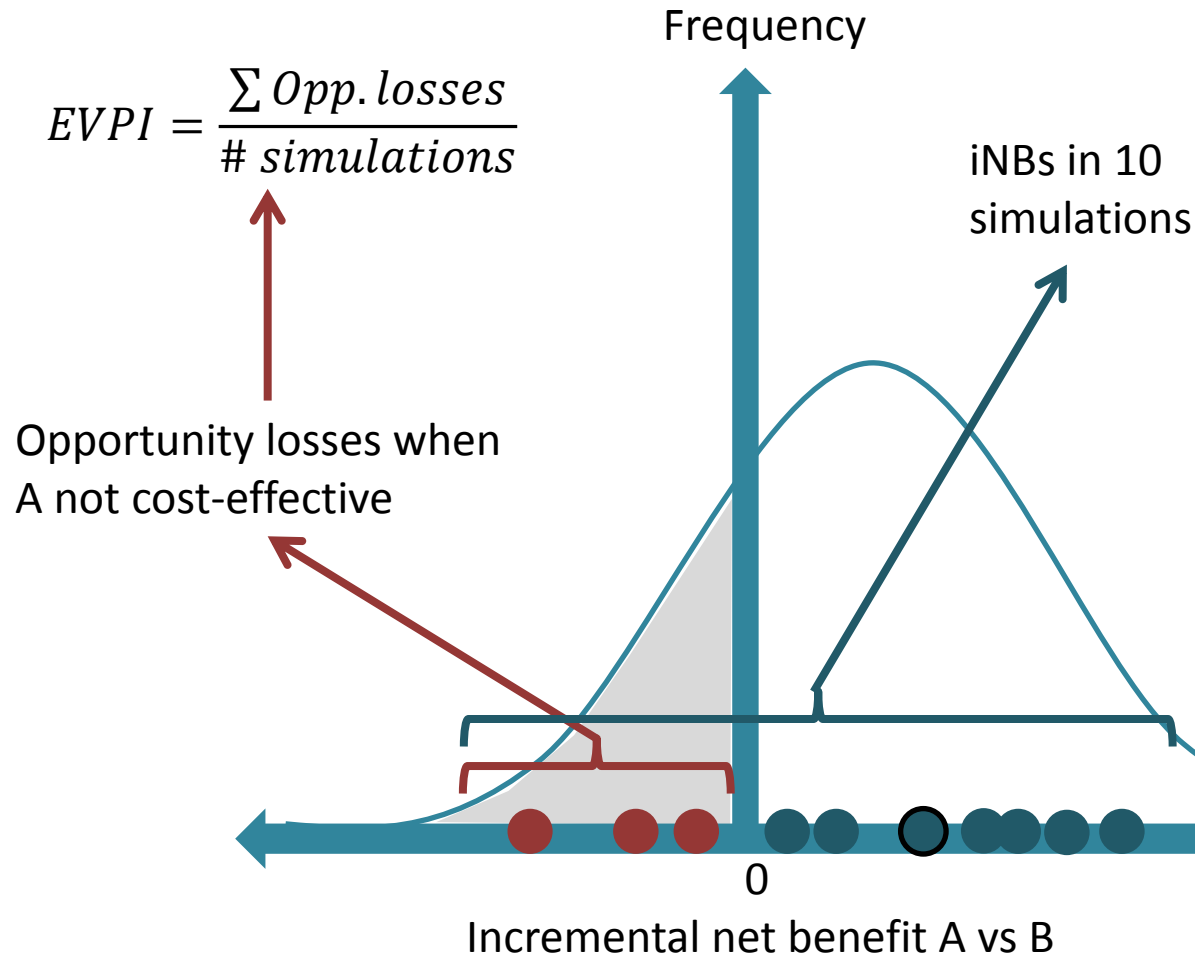
# Value of information (VOI)

- Expected Value of Perfect Information (EVPI)

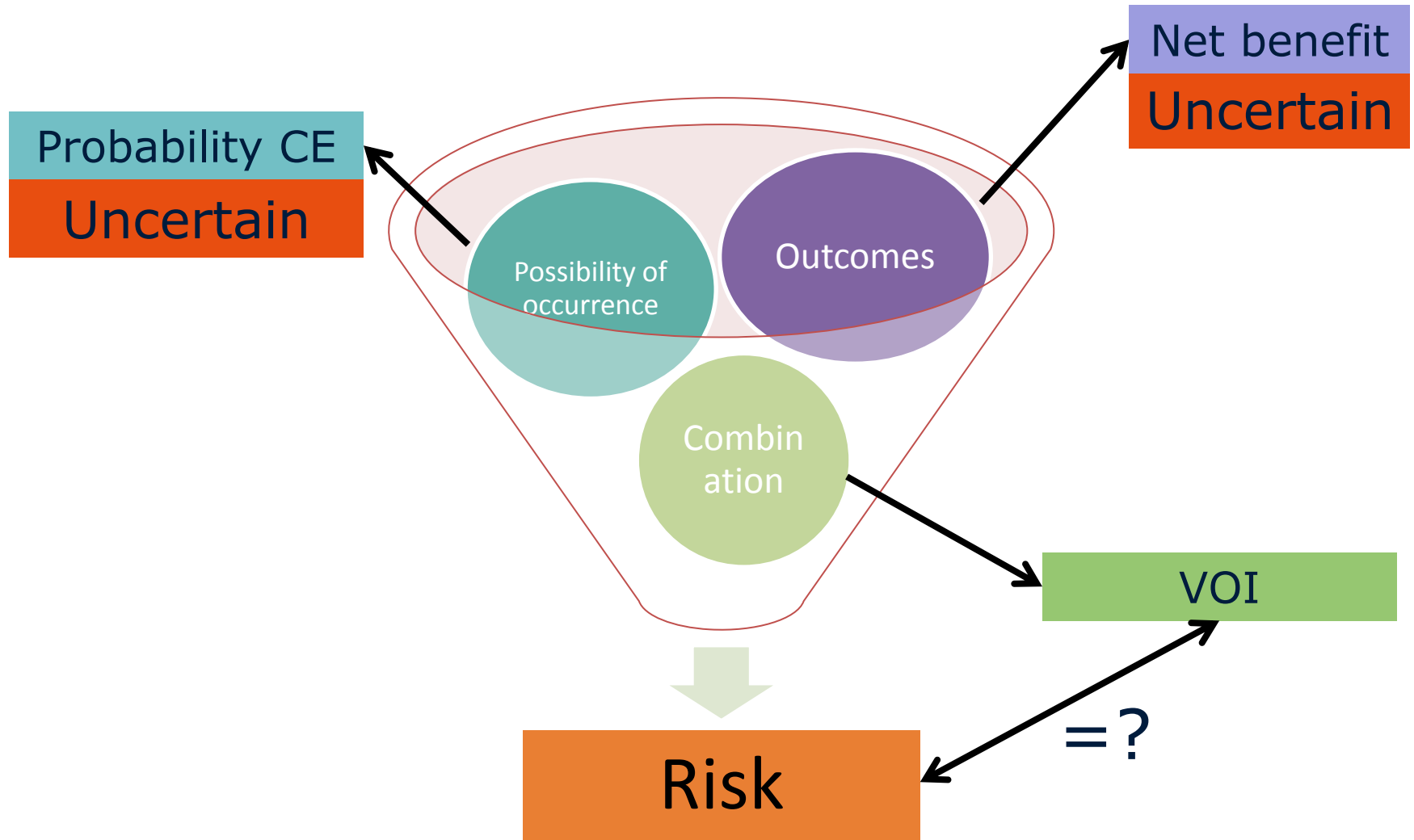


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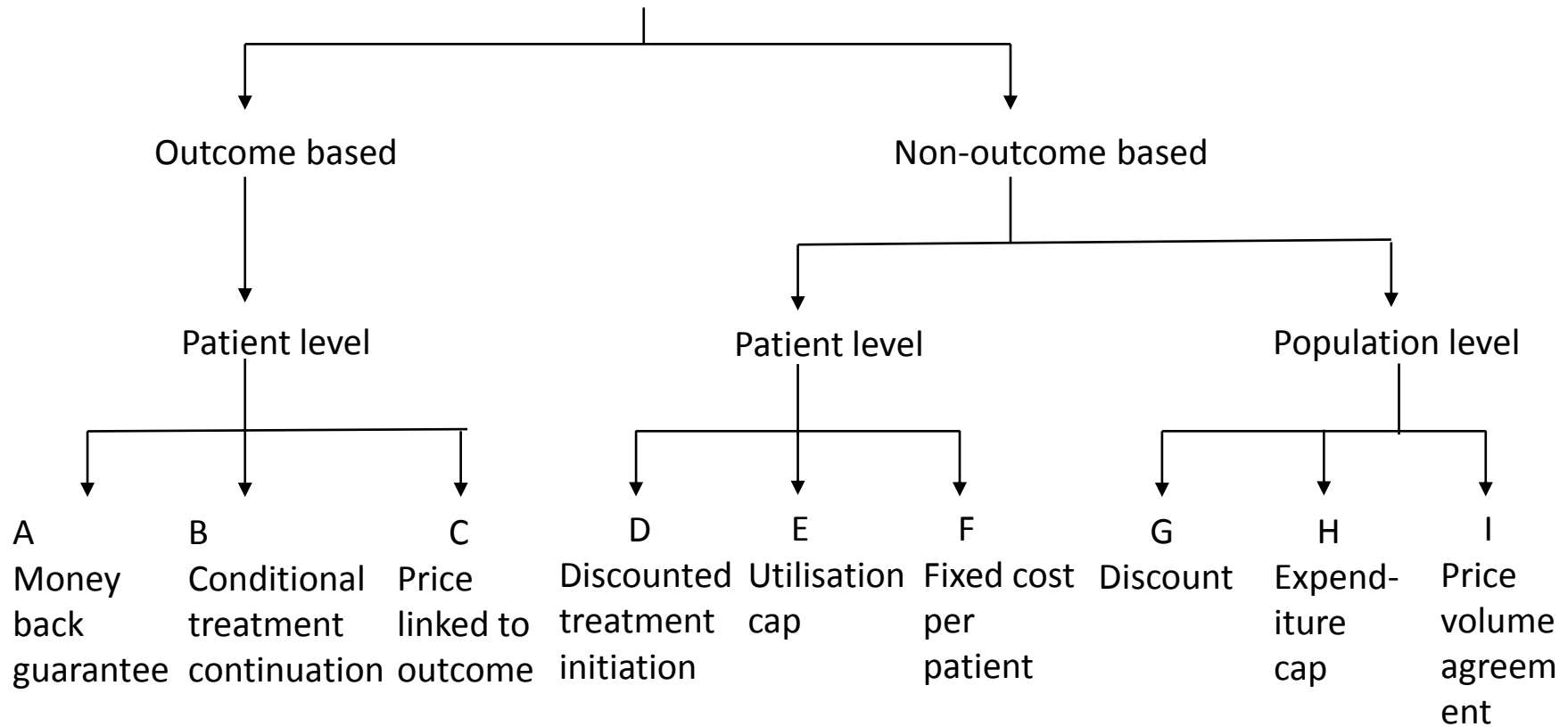


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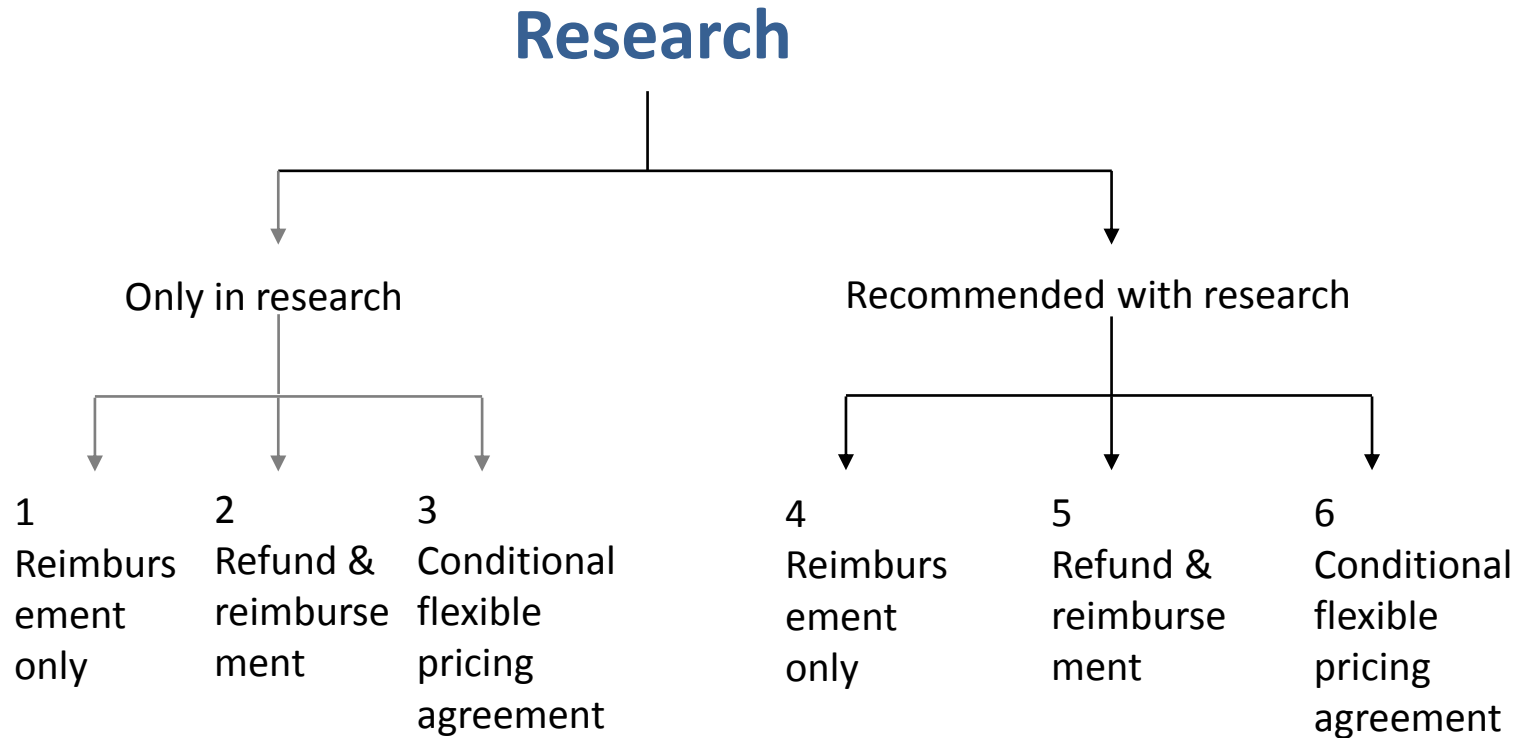


# Risk-sharing arrangements (1)

## Reductions in effective price



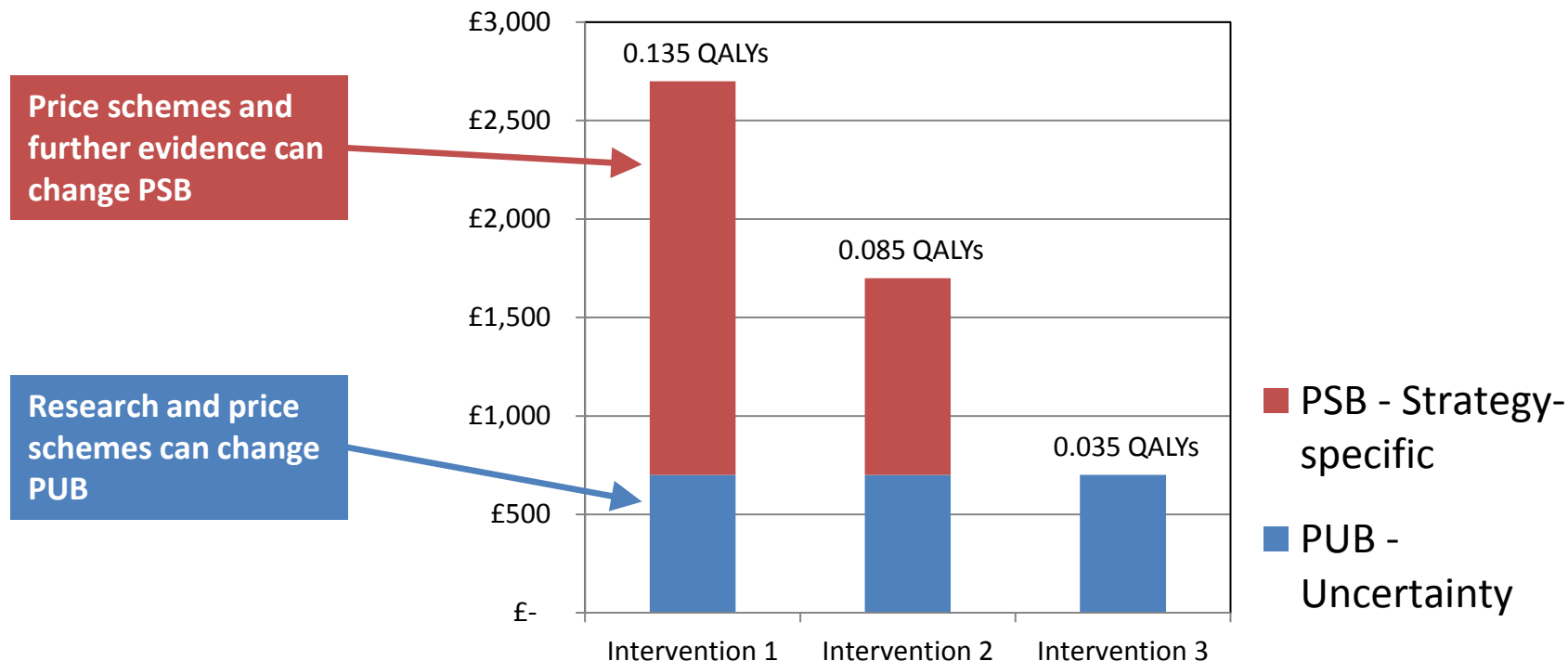
# Risk-sharing arrangements (2)



# HTA Risk Analysis Chart

1. **PUB = payer uncertainty burden = EVPI = risk**
2. **PSB = payer strategy burden = -iNB vs most cost-effective = opportunity loss**

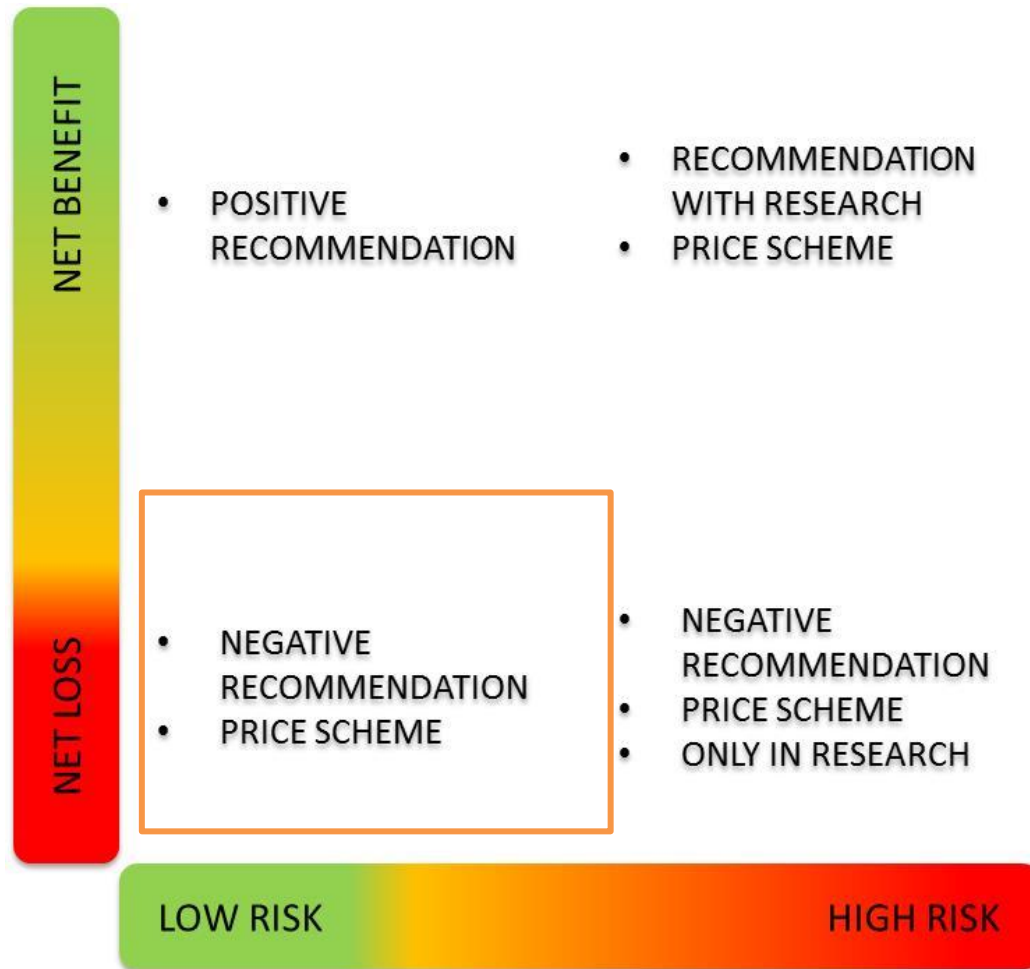
Per Person Analysis for Illustrative Example



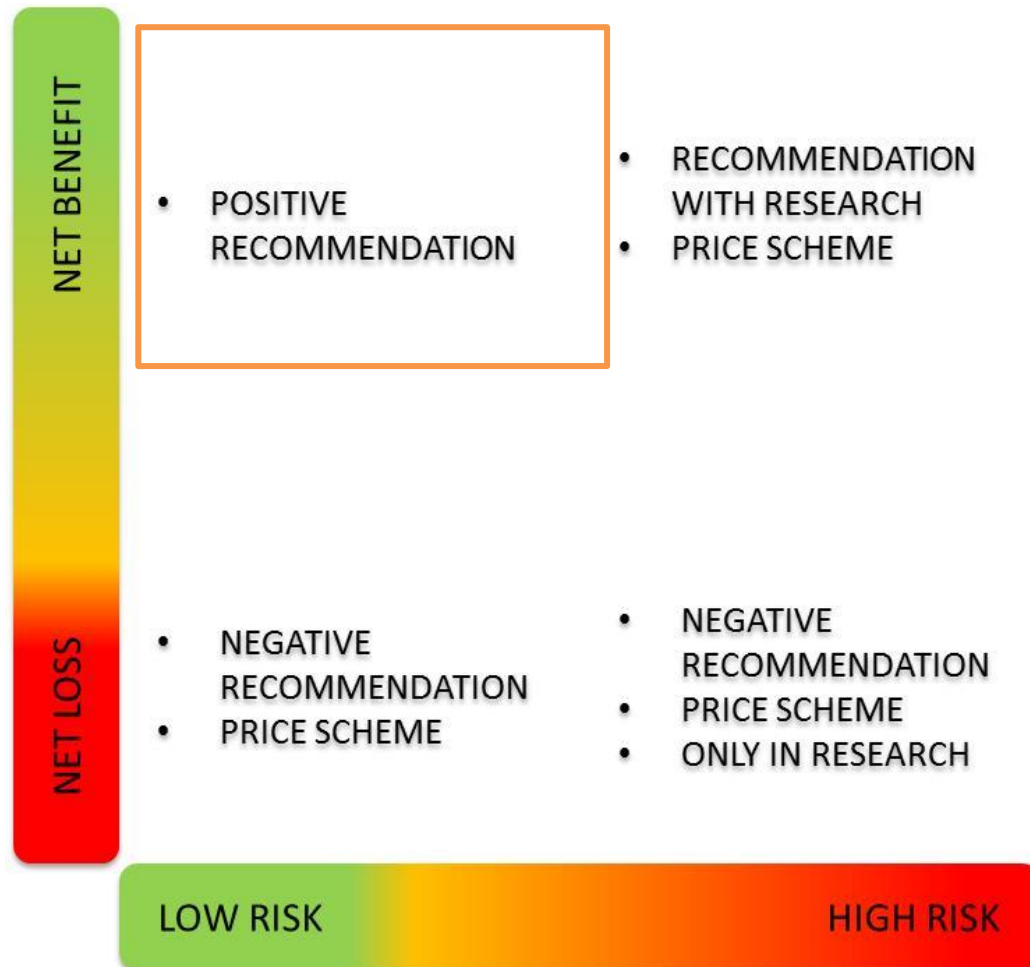
# Further challenges (work with Dutch Health Care Institute)

1. Not all risk is quantifiable
2. Expected burden is uncertain
3. Link to appropriate policy options

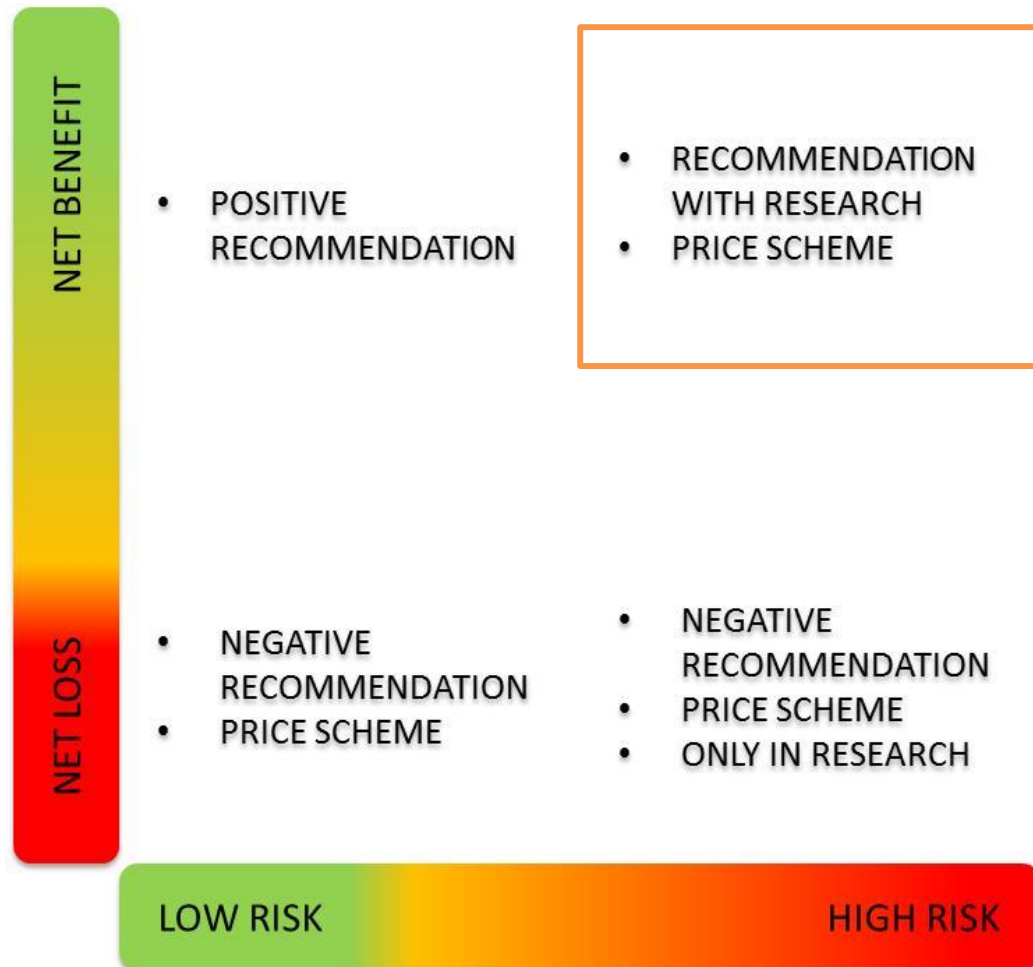
# The Appraisal of Risk Chart (ARCH)



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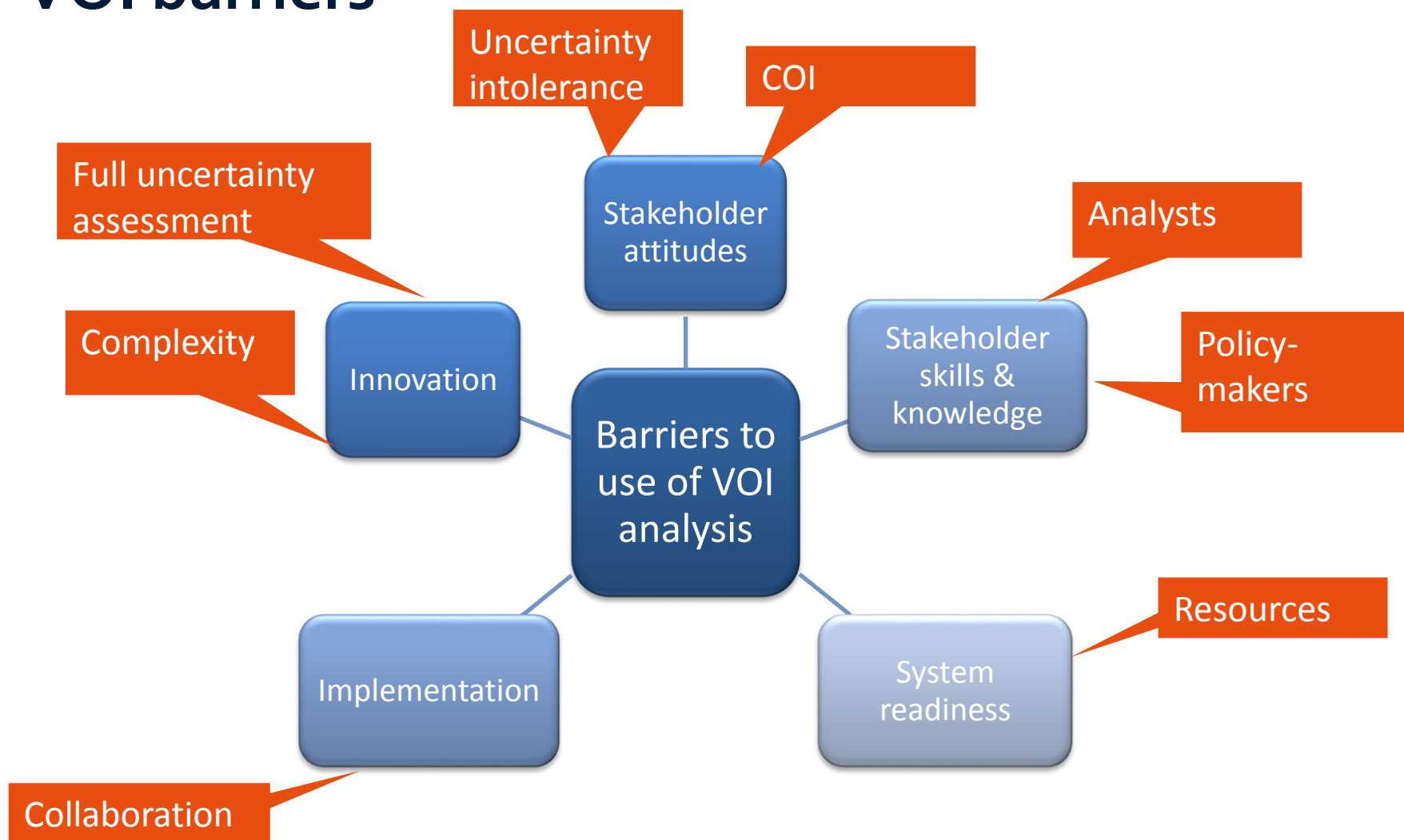




**Thank you!**

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# VOI barriers



# Proposed actions

