

# Why politicians, optimists & gamblers hate me!

## A structured approach to estimating improvement £benefits

Andy Nolan

Chief of Engineering Estimation

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# The problem

- Not all good ideas are good ideas
- The 80:20 law means that some improvement projects are “better” than others
- Few people factor for the down side and tend to exaggerate the upside
- Few improvements have “solid” data to justify their benefits



If you have  
a problem  
estimating  
cost then  
the problem  
is doubled  
when  
estimating  
cost-benefit



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# Tool Structure

		Improvement Projects				
		I1	I2	I3	I4	I5
Step 1 Estimate Benefit	CD1					
	CD2					
	CD3					
	CD4					
	CD5					
		%B	%B	%B	%B	%B
Step 2 Benefit Yield Plan	Year 1	10%		25%		
	Year 2	20%	33%	50%	20%	
	Year 3	50%	66%	75%	50%	50%
	Year 4	100%	100%	100%	100%	100%
	Year 5	100%	100%	100%	100%	100%
Step 3 People Affected	Team 1		10%	100%		
	Team 2	5%	10%		20%	
	Team 3	20%	10%		50%	
	Team 4		10%			10%
	Team 5		10%			5%
		£B	£B	£B	£B	£B
Step 4 Cost	Year 1	£C		£C	£C	£C
	Year 2	£C		£C		£C
	Year 3		£C	£C		£C
	Year 4		£C	£C		
	Year 5		£C	£C		
		£C	£C	£C	£C	£C
Step 5 Uncertainty	Cost +%	%	%	%	%	%
	Cost -%	%	%	%	%	%
	Benefit +%	%	%	%	%	%
	Benefit -%	%	%	%	%	%

The estimation tool is broken into 5 steps

- Step 1 Estimate Benefit
- Step 2 Benefit Yield Plan
- Step 3 People Affected
- Step 4 Cost
- Step 5 Uncertainty



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# Step 1

What is the estimated  
*%benefit*

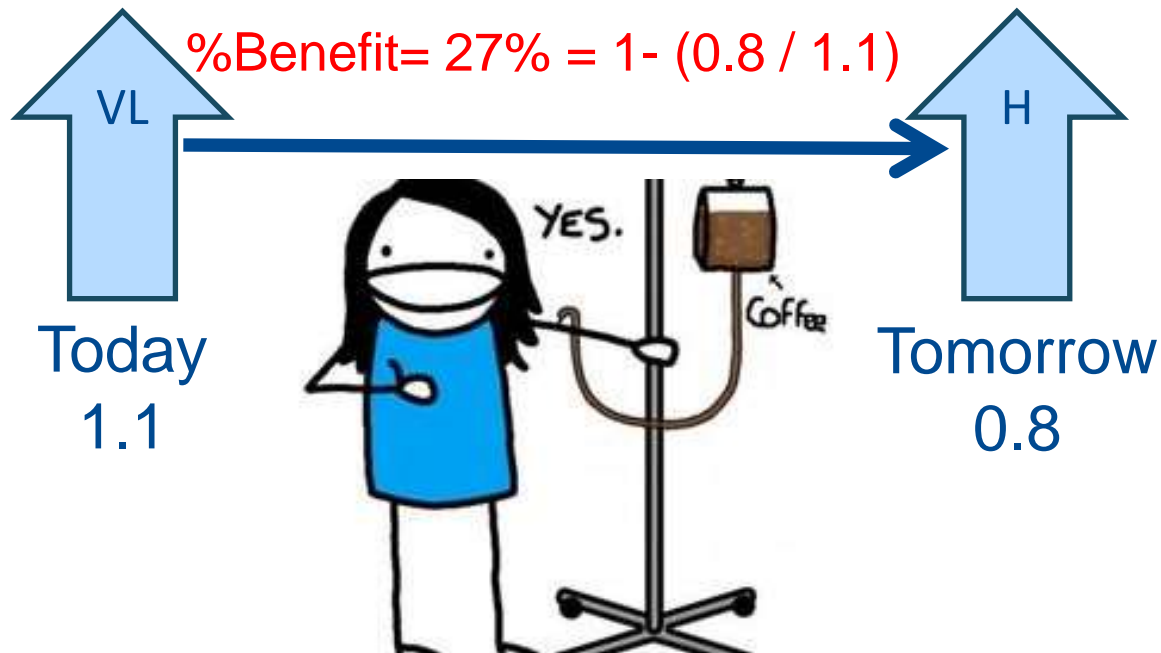


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# Example Cost Driver



## Caffeine Performance Factor



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# Philosophy

Assuming your estimation tool is accurate, then if an improvement project does not affect the estimate Cost Drivers, then it is having negligible (or no) impact on a project



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# Estimating the benefits

		Improvement Projects				
		I1	I2	I3	I4	I5
Step 1 Estimate Benefit	CD1					
	CD2					
	CD3					
	CD4					
	CD5					
		%B	%B	%B	%B	%B

Your benefit calculations are determined by what your estimation tools cover e.g. hardware, software, electronics etc

Define the relationship between the improvement project and the Cost Drivers.

There are 2 approaches for defining %1 - relative and absolute



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# Step 2

When will we see the  
benefits?

*%Benefit<sub>t</sub>*

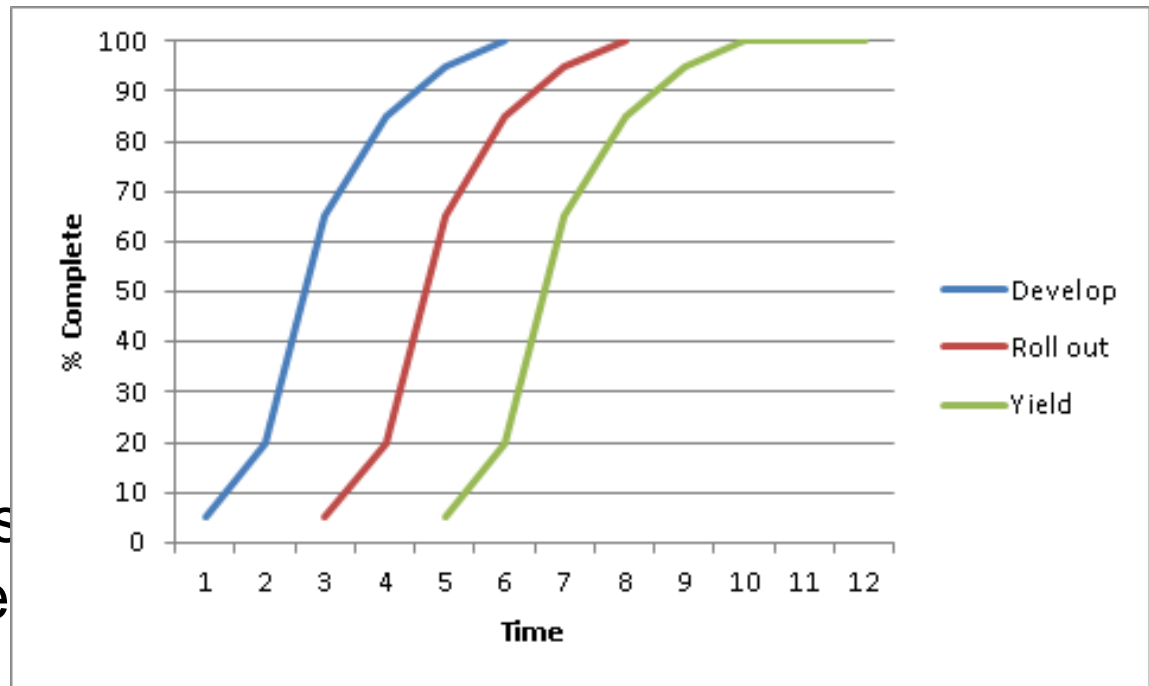


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# Implementation vs Benefit Yield

There is often a lag between rollout and benefit.

For example: If we improve systems engineering, the benefits will not be seen until late phases of a project



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# Implementation vs Benefit Yield

		Improvement Projects				
		11	12	13	14	15
Step 2 Benefit Yield Plan	Year 1	10%		25%		
	Year 2	20%	33%	50%	20%	
	Year 3	50%	66%	75%	50%	50%
	Year 4	100%	100%	100%	100%	100%
	Year 5	100%	100%	100%	100%	100%

$$\%Benefit_t = \%benefit * \%yield_t$$

The benefit at any time  $t$  is a function of the %benefit (from step 1) multiplied by the yield at time  $t$



# Step 3

Who will benefit from the improvement?

*£benefit<sub>t</sub>*



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# Direct & Indirect Impact

If we improve the capability of the captain, not only does the captain get better but everyone on-board gets a better holiday



## Examples:

Systems engineer

Management

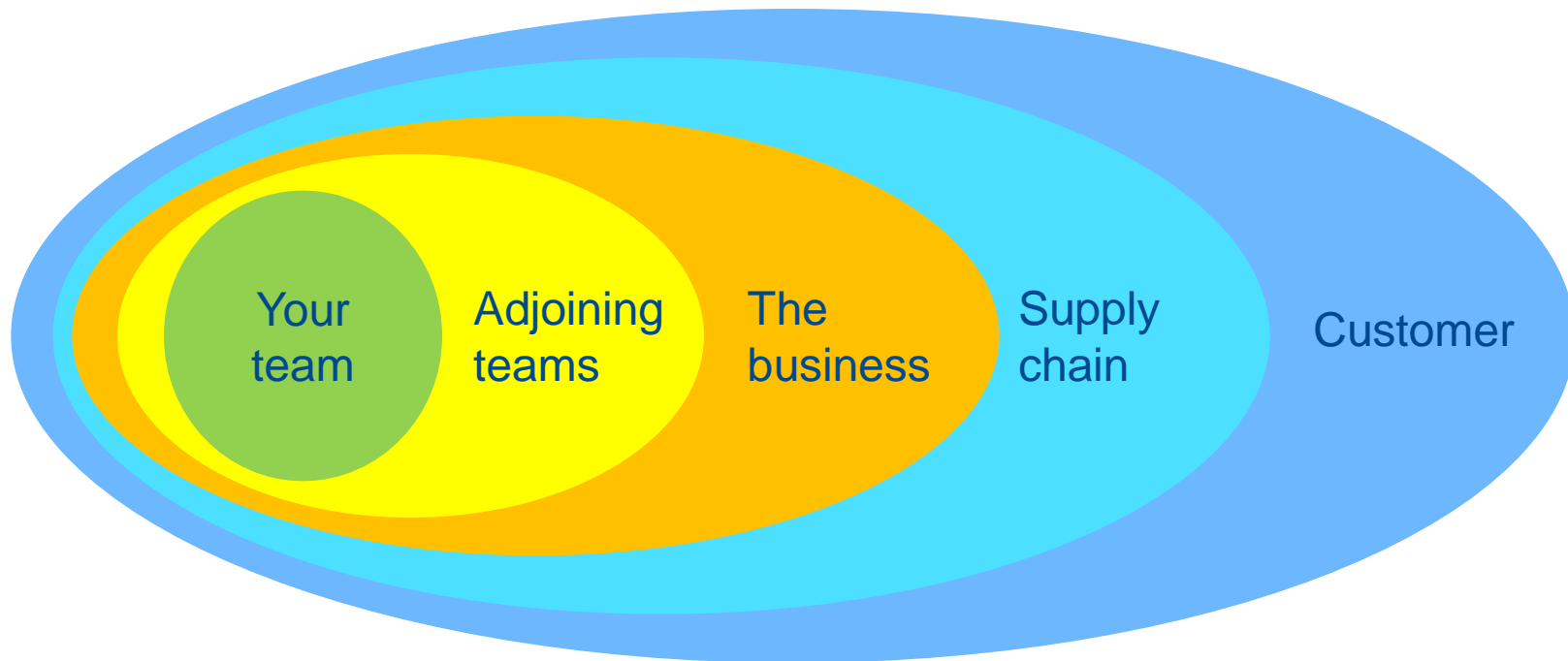
Requirements capture



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# Direct & Indirect Impact

The scope of the business case will determine the levels of indirection you need to consider



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# The Tool

$$\text{£Benefit}_t = \% \text{Benefit}_t * \text{FTE} * \text{Hours per FTE} * \text{£hour}$$

		Improvement Projects				
		I1	I2	I3	I4	I5
Step 3 People Affected	Team 1		10%	100%		
	Team 2	5%	10%		20%	
	Team 3	20%	10%		50%	
	Team 4		10%			10%
	Team 5		10%			5%
		£B	£B	£B	£B	£B



# Step 4

What are the costs?

*£Cost*



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# Confession!

Whereas the tool  
can estimate  
benefits, at present  
the tool does not  
estimate cost.  
Other tools &  
methods are  
needed for this



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# Understand all costs

- Development costs
  - Costs of the improvement team
  - IT, equipment etc.
- Implementation costs
  - Training and development
  - Coaching and support
- Productivity loss
  - Learner curves (unfamiliarity)
  - Mistakes (increased scrap & rework)
- Maintenance costs
  - Maturing the new processes and tools

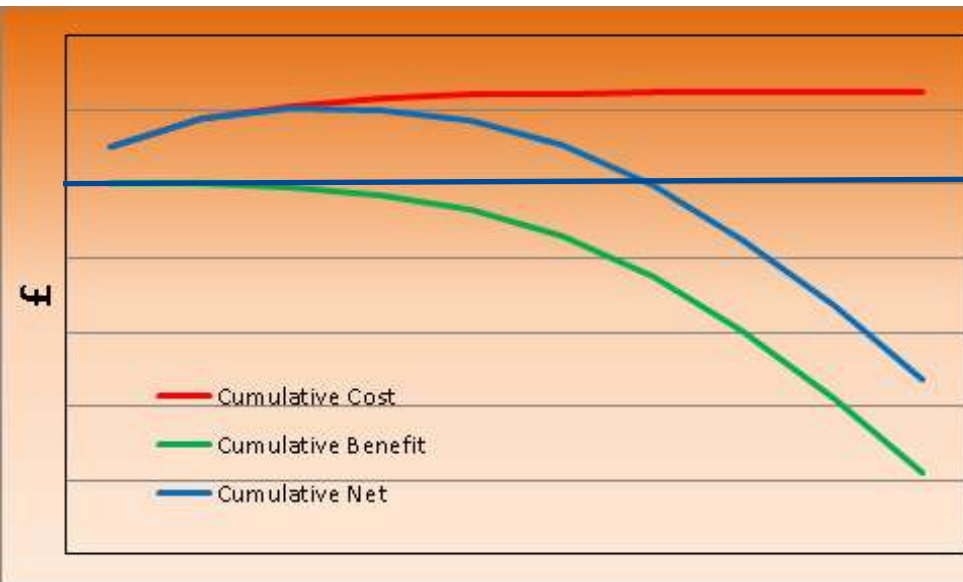


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# Understand all costs

Model all costs:  
primary and tech time

		Improvement Projects				
		I1	I2	I3	I4	I5
Step 4 Cost	Year 1	£C		£C	£C	£C
	Year 2	£C		£C		£C
	Year 3		£C	£C		£C
	Year 4		£C	£C		
	Year 5		£C	£C		
		£C	£C	£C	£C	£C



Initially things may  
get worse before they  
get better



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# Step 5

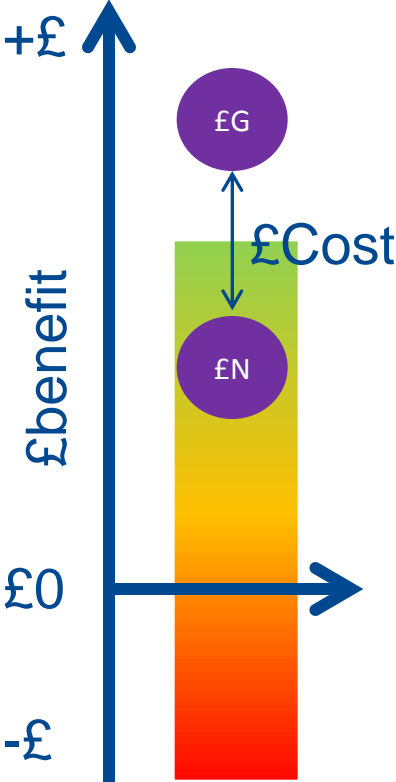
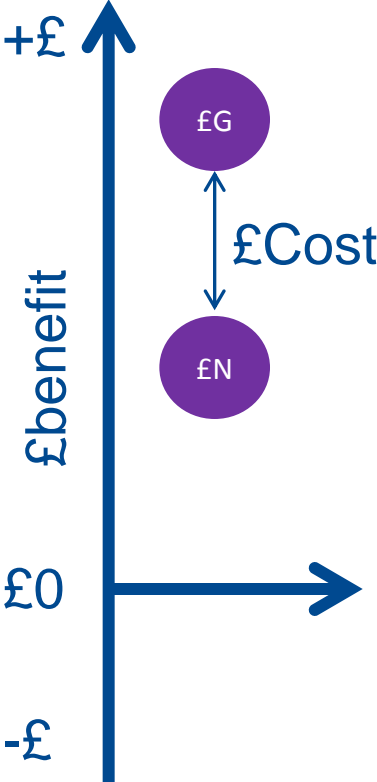
## Understand risk and uncertainty

+ / -



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# Question?



# Philosophy

Benefits are always less than expected and costs are always more! Assume your costs will double and the benefits will halve



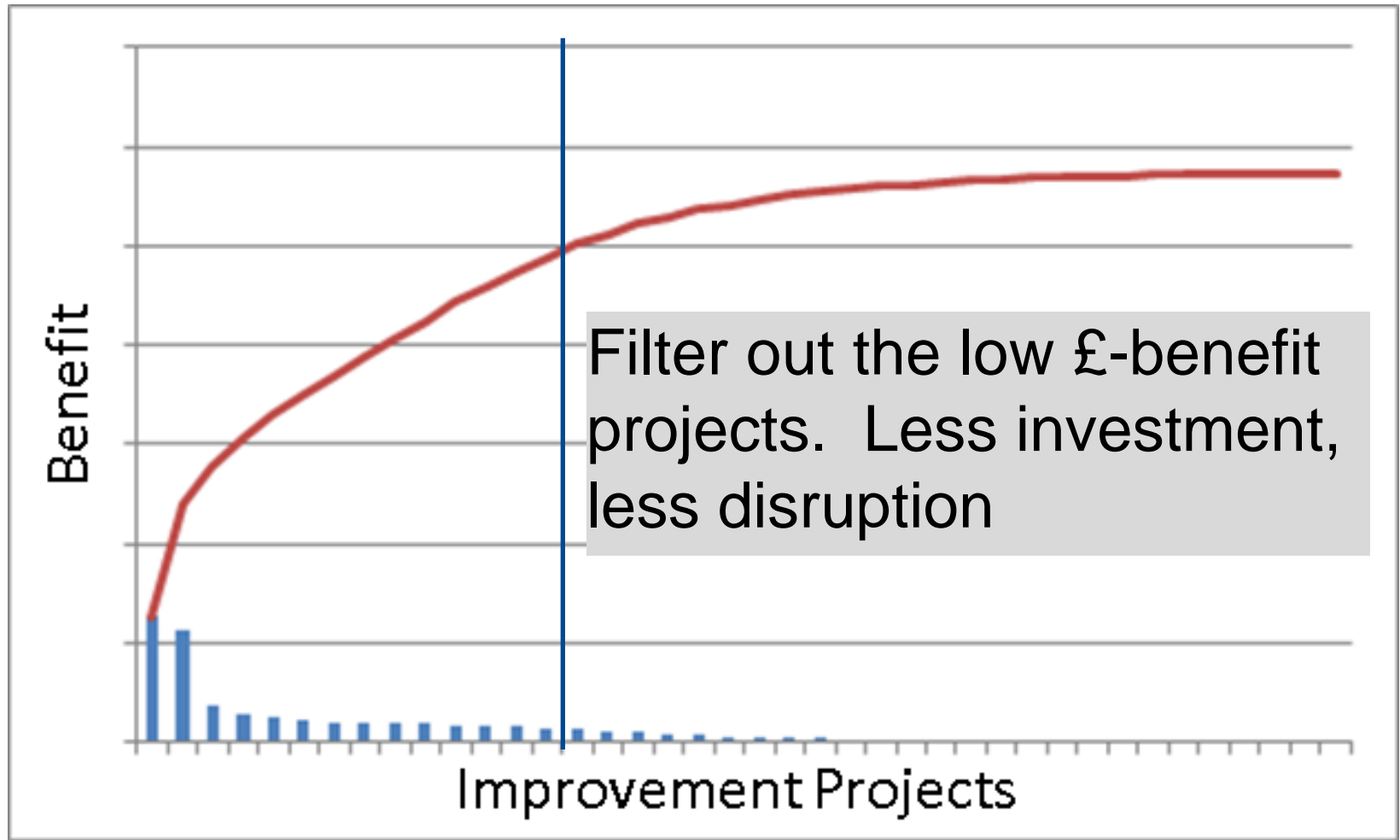
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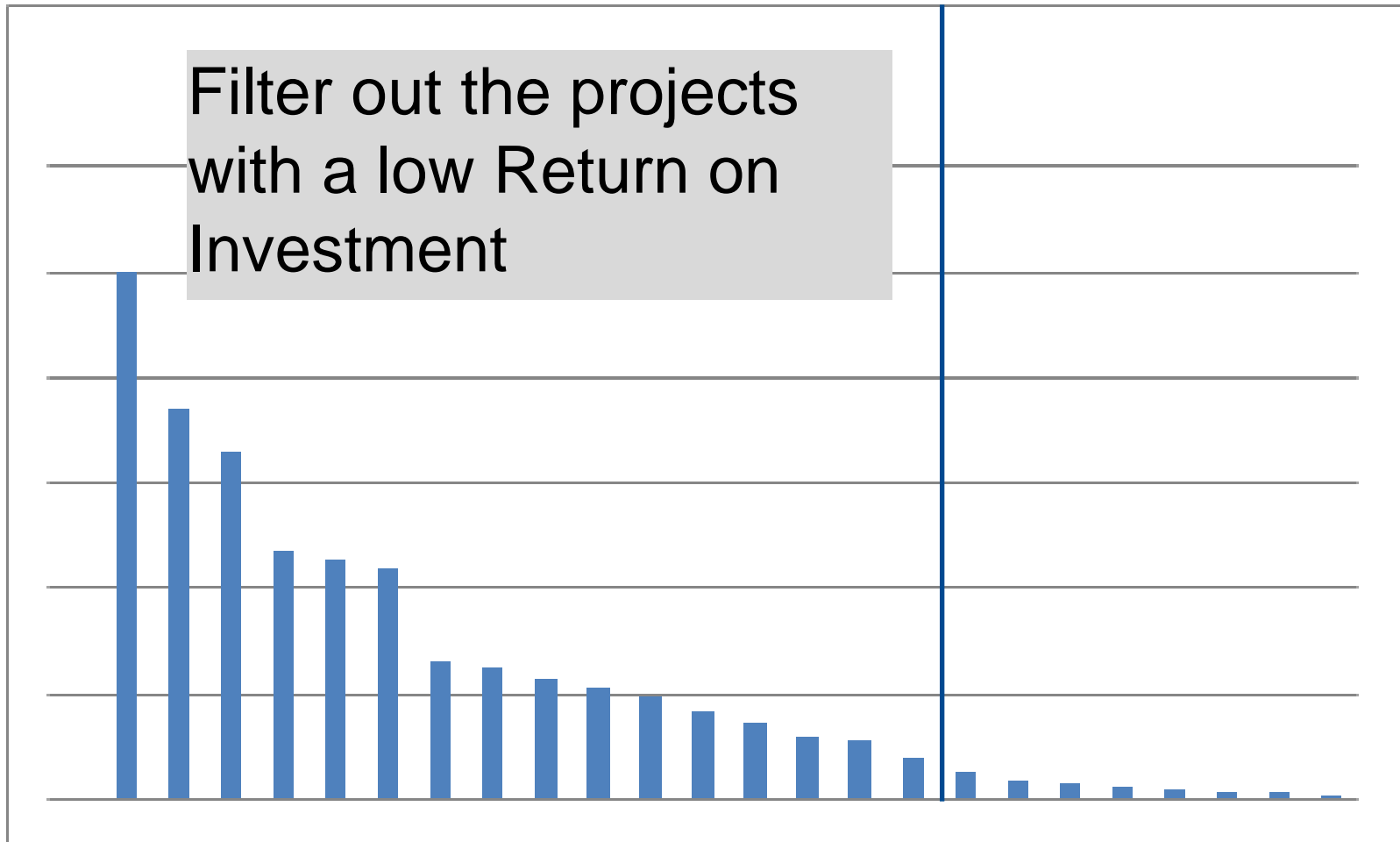
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# Eliminate (or improve) the low £-benefit projects



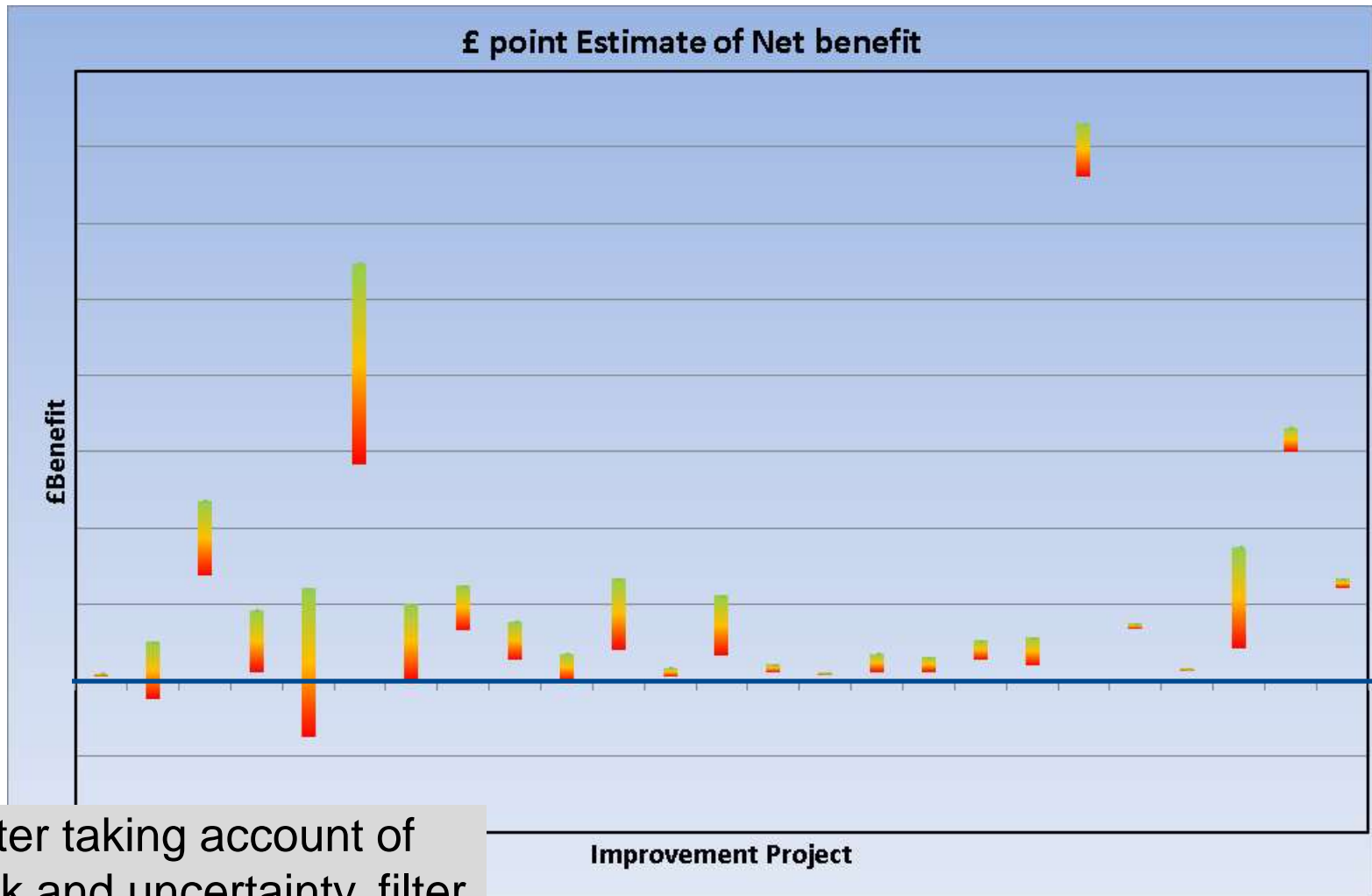


# Eliminate (or improve) the low ROI projects



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# Eliminate (or improve) the high risk projects



After taking account of risk and uncertainty, filter out the high risk projects



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# How to ruin a “good” idea

1. Failing to affect the important Cost Drivers
2. Slow or late roll out
3. Impacting too few people
4. High costs
5. Significant risk & uncertainty



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