Integrating Risk and Value Management

Integrated Management of Risk and Value

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Introduction

- An introduction to the IVM and VM
- The nature and definition of value
- Evaluating best value using a Value Matrix
- Considering the impact of uncertainty
- Evaluating best value using a Value Matrix incorporating uncertainty

Institute of Value Management

- Learned Society
- Promoter of VM
- Regulator – training and certification

- Find out more on www.ivm.org.uk

Definition - BS EN 12973:2000

A style of management, particularly dedicated to motivating people, developing skills and promoting synergies and innovation, with the aim of maximising the overall performance of an organisation.

Applied at the Corporate level, VM relies on a value-based organisational culture taking into account Value for both stakeholders and customers. At the operational level (project oriented activities), it implies, in addition, the use of appropriate methods and tools.

VM – at the operational level

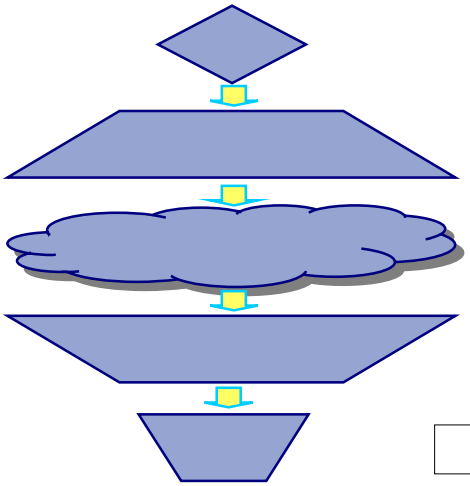
A management technique
which uses a
systematic, team based approach
to seek out
the optimal balance between
cost and performance
of a product, process, or project

VM: Key elements

- Focuses on needs and objectives
- Focuses on function
- Uses creative thinking

- Involves stakeholders through workshops
- Workshops have a facilitator and a structured agenda (the Job Plan)

VM: The Job Plan



Value Perceptions

- "It does the job at the lowest cost"
- "Well it costs more but it will be reliable and cheaper in the long run"
- "Of course, it costs a lot, but it looks wonderful, and Gerald does so like to spoil me"
- "This is top of the range – it's got five whistles, four bells, and a platinum what-not"
- "If I buy a thousand I can get 5% off the unit price"

Definition of Value

From BS EN 12973:2000

$$V \propto \frac{\text{satisfaction of needs}}{\text{use of resources}}$$

In practice, normally use

$$V \propto \frac{\text{satisfaction of needs}}{\text{whole life cost}}$$

Examples of Needs – Consumer Products

- Does the job
- Appearance
- Usability
- Safety
- Running costs
- Reliability
- Durability

Examples of Needs – Construction Projects

- Compliance
- Buildability
- Operability
- Maintainability
- Reliability
- Durability
- Safety
- Accessibility
- Security
- Avoidance of
  - Impact on environment
  - Impact on people

Value Matrix

			Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9

Value Matrix

Need	W		Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9
Compliance Reliability	1.0				
LT impact on environment	0.8				
Operability	0.7				
ST impact on environment	0.6				

Value Matrix

Need	W		Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9
Compliance Reliability	1.0	S	85	90	85
LT impact on environment	0.8	S	90	90	80
Operability	0.7	S	80	75	65
ST impact on environment	0.6	S	80	97	90

Value Matrix

Need	W		Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9
Compliance	1.0	S	85	90	85
Reliability		S x W	85	90	85
LT impact on environment	0.8	S	90	90	80
		S x W	72	72	64
Operability	0.7	S	80	75	65
		S x W	56	53	46
ST impact on environment	0.6	S	80	97	90
		S x W	48	58	54

Value Matrix

Need	W		Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9
Compliance	1.0	S	85	90	85
Reliability		S x W	85	90	85
LT impact on environment	0.8	S	90	90	80
		S x W	72	72	64
Operability	0.7	S	80	75	65
		S x W	56	53	46
ST impact on environment	0.6	S	80	97	90
		S x W	48	58	54
Total weighted points scored			261	273	249

Value Matrix

Need	W		Option 1: Conventional	Option 2: High Tech	Option 3: Low Cost
Whole Life Cost (£M)			10.0	11.3	7.9
Compliance	1.0	S	85	90	85
Reliability		S x W	85	90	85
LT impact on environment	0.8	S	90	90	80
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ST impact on environment	0.6	S	80	97	90
		S x W	48	58	54
Total weighted points scored			261	273	249
VALUE (= total points / WLC)			26.1	24.1	31.5

Definition of Value

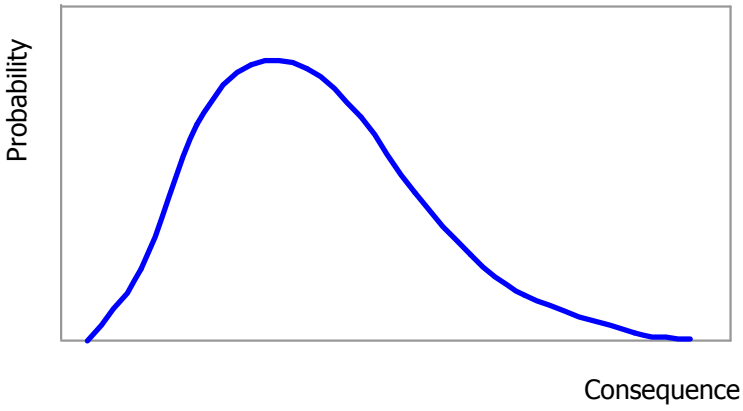
From BS EN 12973:2000

$$V \propto \frac{\text{satisfaction of needs}}{\text{use of resources}}$$

In practice, normally use

$$V \propto \frac{\text{satisfaction of needs}}{\text{whole life cost}}$$

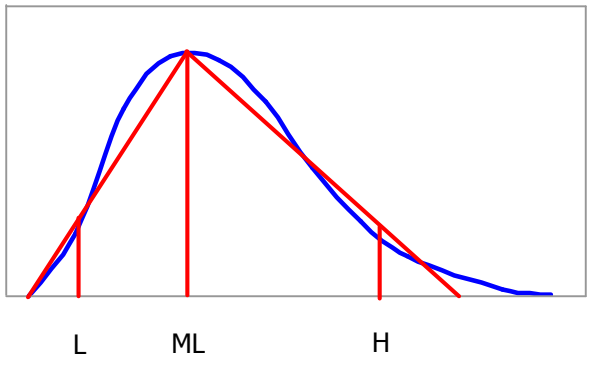
Typical risk distribution



Describing typical risks

Specify the consequences which are:

- Most Likely
- Likely to be exceeded (Low)
- Likely not to be exceeded (High)



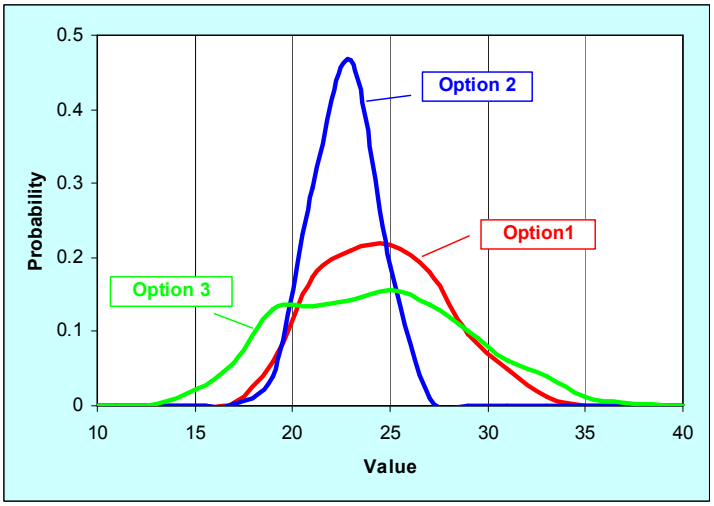
Matrix incorporating uncertainty

Need	W		1: Conventional			2: High Tech			3: Low Cost		
				ML			ML	H		ML	
Whole Life Cost (£M)				10.0			11.3			7.9	
Compliance	1.0	S		85			90			85	
Reliability		S x W		85			90			85	
LT impact on	0.8	S		90			90			80	
environment		S x W		72			72			64	
Operability	0.7	S		80			75			65	
		S x W		56			53			46	
ST impact on	0.6	S		80			97			90	
environment		S x W		48			58			54	

Matrix incorporating uncertainty

Need	W		1: Conventional			2: High Tech			3: Low Cost		
			L	ML	H	L	ML	H	L	ML	H
Whole Life Cost (£M)			8.9	10.0	12.5	11.0	11.3	11.9	7.5	7.9	12.0
Compliance	1.0	S	75	85	90	60	90	95	50	85	90
Reliability		S x W	75	85	90	60	90	95	50	85	90
LT impact on	0.8	S	85	90	95	85	90	95	50	80	85
environment		S x W	68	72	76	68	72	76	40	64	68
Operability	0.7	S	70	80	85	55	75	85	55	65	70
		S x W	49	56	60	39	53	60	39	46	49
ST impact on	0.6	S	75	80	85	95	97	99	80	90	95
environment		S x W	45	48	51	57	58	59	48	54	57

Results of analysis



Summary

- Value is the relationship between what is delivered (needs satisfied) and the cost of doing so
- Both of these are (usually) subject to risks and the outcomes are uncertain
- A simple technique has been developed using standard tools of project risk management to incorporate uncertainty into the evaluation of best value using a Value Matrix

Thank you for listening

Any questions?