

Active Asset Management Risk

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Presentation Overview

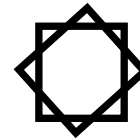
- defining elements of risk → defining risk →
→ quantifying probability of failure → future steps

Defining elements of risk

• nature of information



• information format

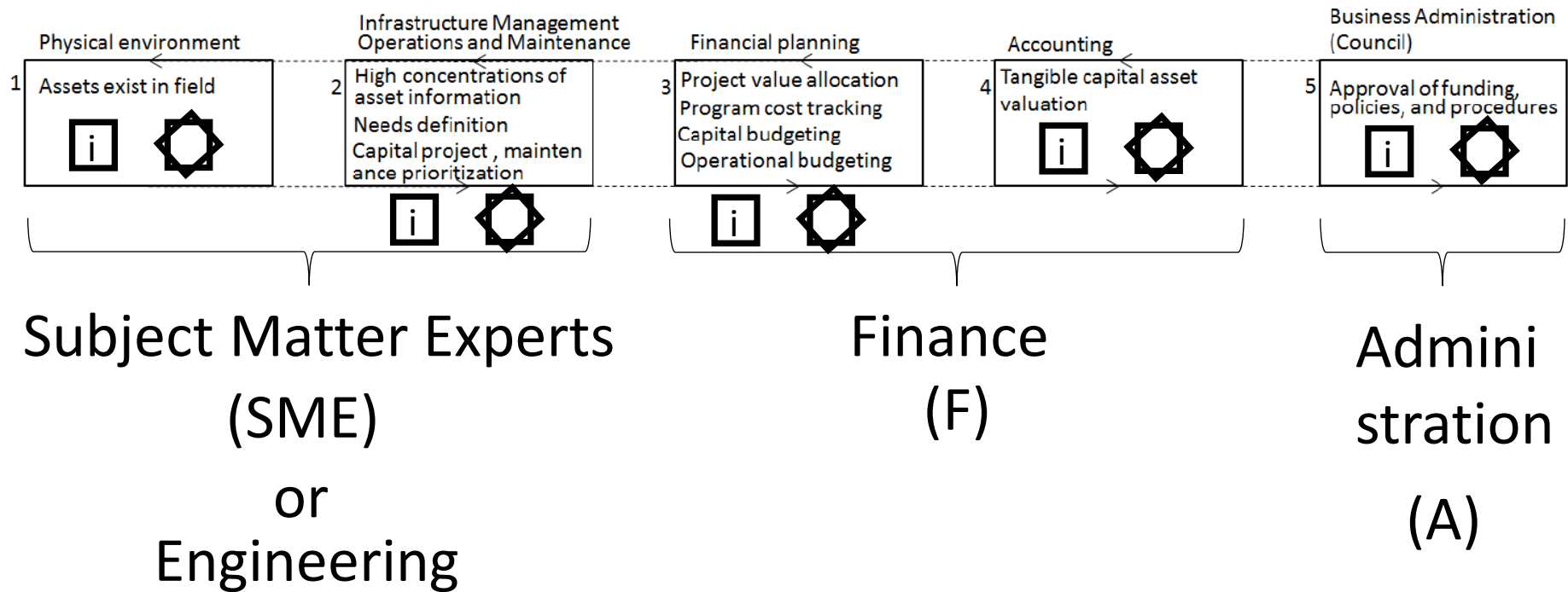


• information flow



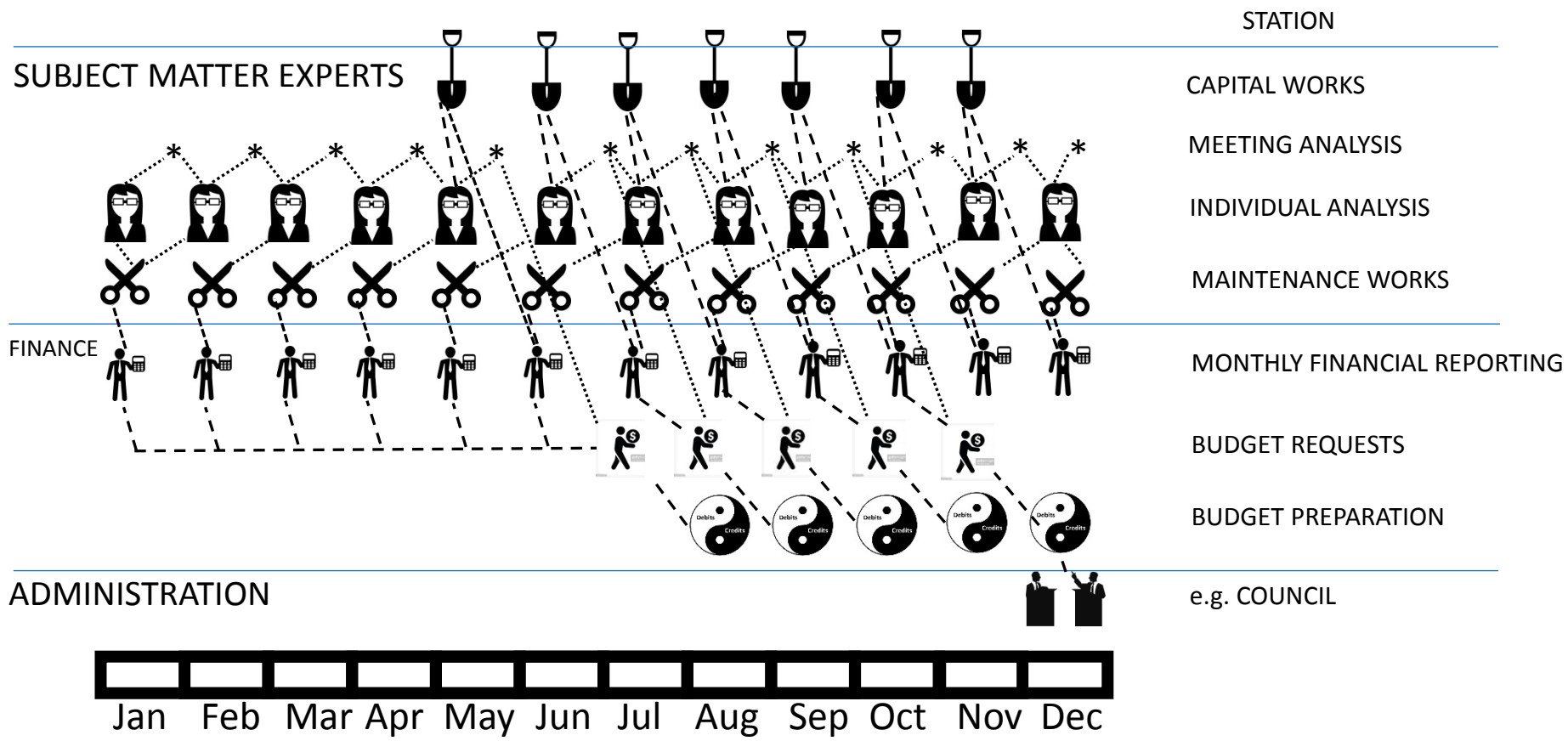
Defining elements of risk

Information flow ()





Defining elements of risk

















Information flow () matrix



Defining risk










- risk = probability of failure (p) \times consequence
- failure to generate future (quantified) asset-performance graph(s)  in a timely manner at any point in 

Quantifying risk – probability of failure

- assumption: probability of failure directly  to uncertainty, uncertainty directly  to interpretation effort necessary at  station with respect to  in generating 
 next: use arbitrary values to postulate actual relative effort necessary between different  stations
- assumption: probability of failure directly  to uncertainty, uncertainty directly  to number of  at  station
 next: use arbitrary values to postulate actual relative difference in number of  between different  stations
- assumption: probability of failure directly  to uncertainty, uncertainty directly  to number of  station from physical environment
 next: use arbitrary values to postulate number of  stations

Quantifying probability of failure

Via system uncertainty

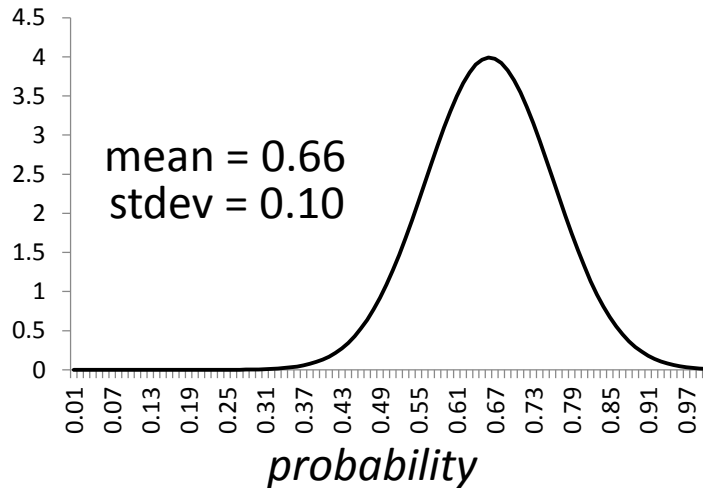
				weighted value
	1	1	1	0.0625
*	2	3	3	0.333
	2	2	2	0.25
	1	1	1	0.0625
	1	1	1	0.0625
	4	4	4	1
	5	2	5	1.5625

sum= 3.33
 = 3.33 / 5
 = 0.66
 = average system uncertainty

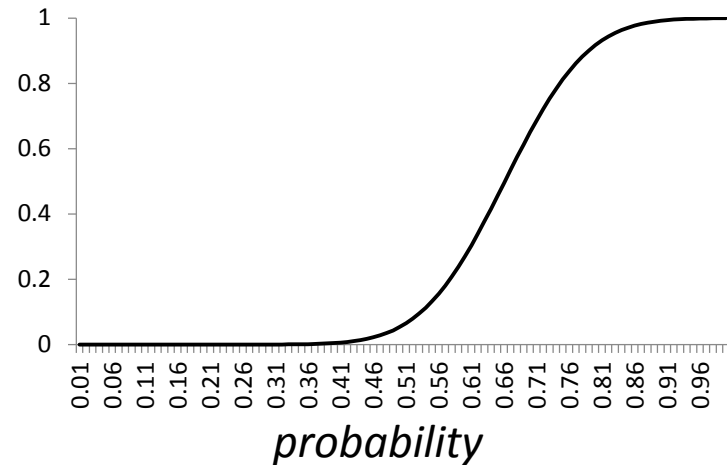
Quantifying probability of failure

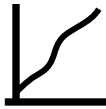

Via system uncertainty

Probability Density Function for p



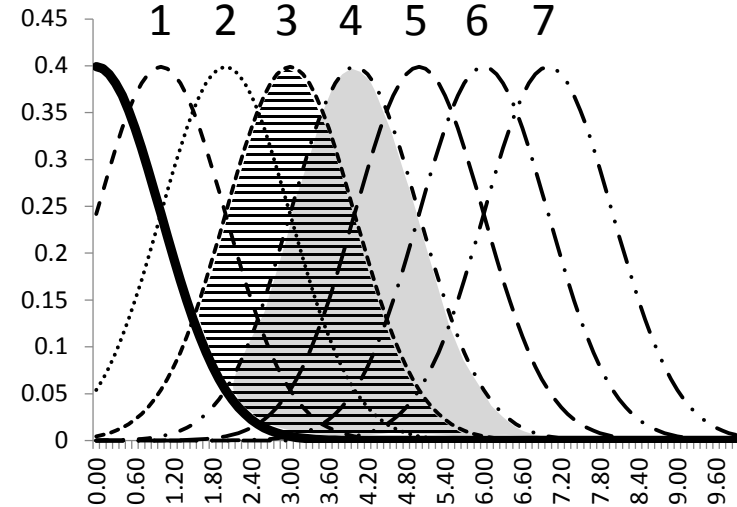
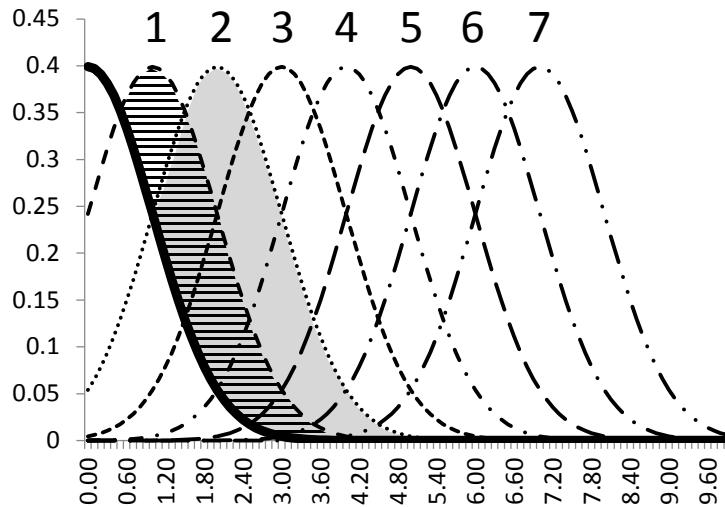
Cumulative Density Function for p




- Where failure is lack of ability to generate future (quantified) asset-performance graph(s)  in a timely manner at any point in 

Quantifying probability of failure











Via number of failed  stations





Number of stations without means of generating future (quantified) asset-performance graph(s)  in a timely manner

Number of failed stations	1	2	3	4	5	6	7
Probability of failure	0.33	0.61	0.76	0.85	0.87	0.88	1

Conclusions and Recommendations

				weighted value
	1	1	1	0.0625
	2	3	3	0.333
	2	2	2	0.25
	1	1	1	0.0625
	1	1	1	0.0625
	4	4	4	1
	5	2	5	1.5625

 areas of highest uncertainty with respect to 

subject matter expert, meetings, budget requests, and budget preparation areas exhibit highest relative uncertainty with respect to generating future (quantified) asset-performance graph(s) in a timely manner

∴ it is recommended that risk minimization efforts focus on these areas

Future steps

- refinement of probability of failure distribution
- development of consequences (e.g. quantification)
- introduction of risk minimization means within framework (e.g. hard copy AMPs, software, professional management, Excel)

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Thank you for your time and attention.