

Decision Support for Manufacturing Technology Investment

How to prioritise technology projects for investment

- Complex decisions - dynamic, unknown factors
- No standard rules for making decisions
- Rely heavily on human expertise & experience

An AI Decision Support Tool

- Data Collection

An evaluation form to capture relevant data: (i) cost; (ii) prioritisation scores such as technology novelty rating, intellectual property potential, impacts on improving customer services; and (iii) risk factors such as resource risk, benefit delivery risk and technology novelty risk

Microsoft Excel - MTProject_WorkShop

Manufacturing Technology Projects Prioritisation Process

Prioritisation Criteria		Rating	Weighting	Weighted score	Max Possible	% Ranking
Financial Benefits	Score	10.00%	0			
Impact on solving identified manufacturing problems		10.00%	0			
Impact on critical products		25.00%	0			
Impact on consistency of product quality		30.00%	0			
Opportunity to deploy technology across the network		10.00%	0			
Speed to implement		15.00%	0			
		100.00%	0	10	0.00%	
Risk Assessment		Probability of occurrence (1 = low, 5 = high)	Impact of risk (1=low, 5 = high)	Risk Rating (RPN)		
Technology novelty risk				0		
Resource risk				0		
				0		
					Prioritisation Score:	0.00%
					Assessed % Risk:	0.00%

An AI Decision Support Tool

- Use AHP/ANP to capture evaluation criteria from domain experts
- Apply AI models to process assessment scores from domain experts
- Deduce reasoning from AI models to provide justifications

