

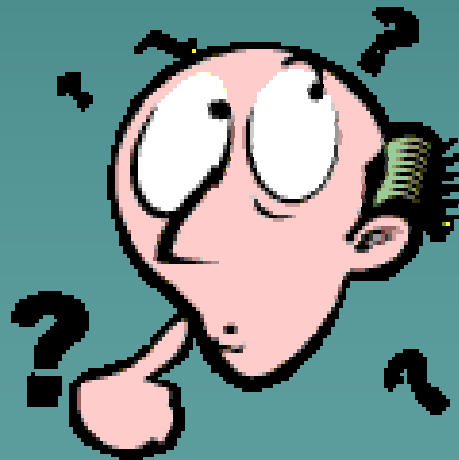
**COST ESTIMATION METHOD
SELECTION: MATCHING USER
REQUIREMENTS AND KNOWLEDGE
AVAILABILITY TO METHODS**

David Evans

david11.evans@uwe.ac.uk

The Problem

- ◆ Range of cost estimation methods
- ◆ Different Methods give different estimates of the cost
- ◆ How do you choose which method to use?



Research Aim

- ◆ Understand the requirements and constraints of estimators and estimation methods
- ◆ Create a model that informs the user of the most appropriate estimation method given a set of inputs describing the situation
- ◆ What changes to the situation could make other methods appropriate

Cost Estimation

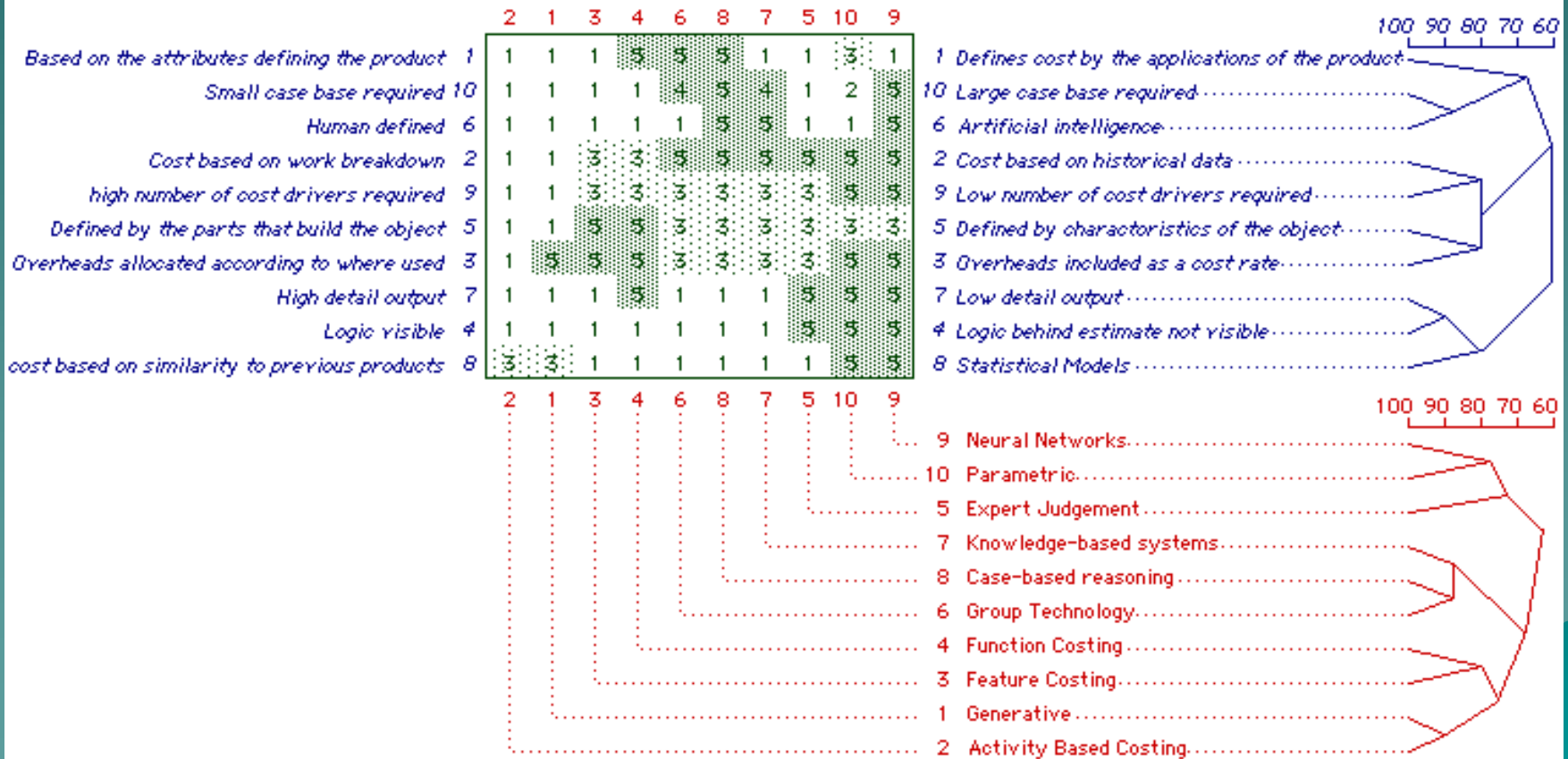
- ◆ **Cost** is the expenditure necessary for the attainment of a goal
- ◆ **Cost Estimation** is predicting the cost prior to undertaking the activity

Cost Estimation Methods

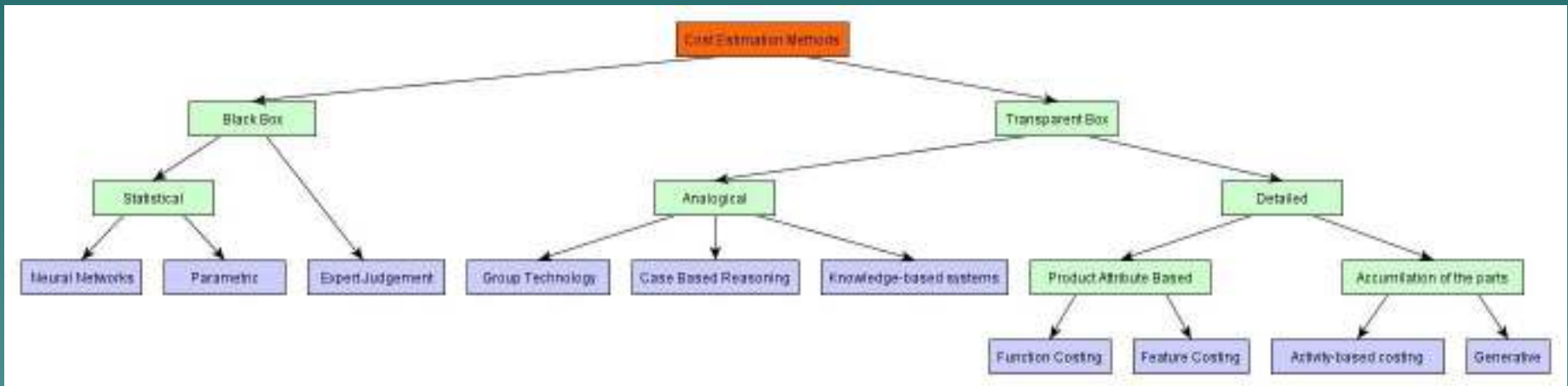
- ◆ Parametric
- ◆ Neural Networks
- ◆ Expert Judgement
- ◆ Function costing
- ◆ Feature costing
- ◆ Group Technology
- ◆ Case-Based Reasoning
- ◆ Knowledge-Based Systems
- ◆ Generative costing
- ◆ Activity-Based costing

Cluster Analysis Using Web Grid III

FOCUS David Evans, Domain: Cost estimation
Context: , 10 elements, 10 constructs



A Classification of the Methods

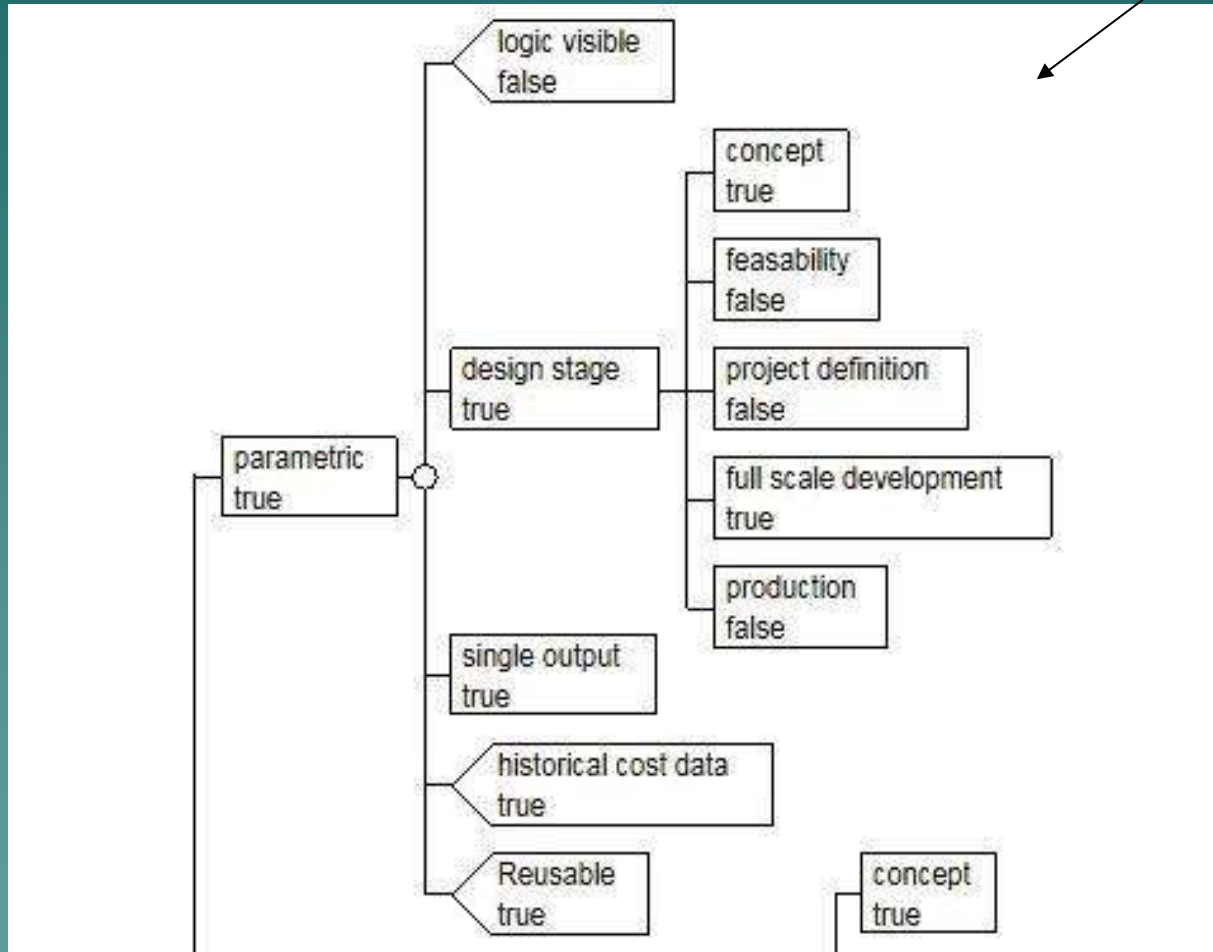


Rules

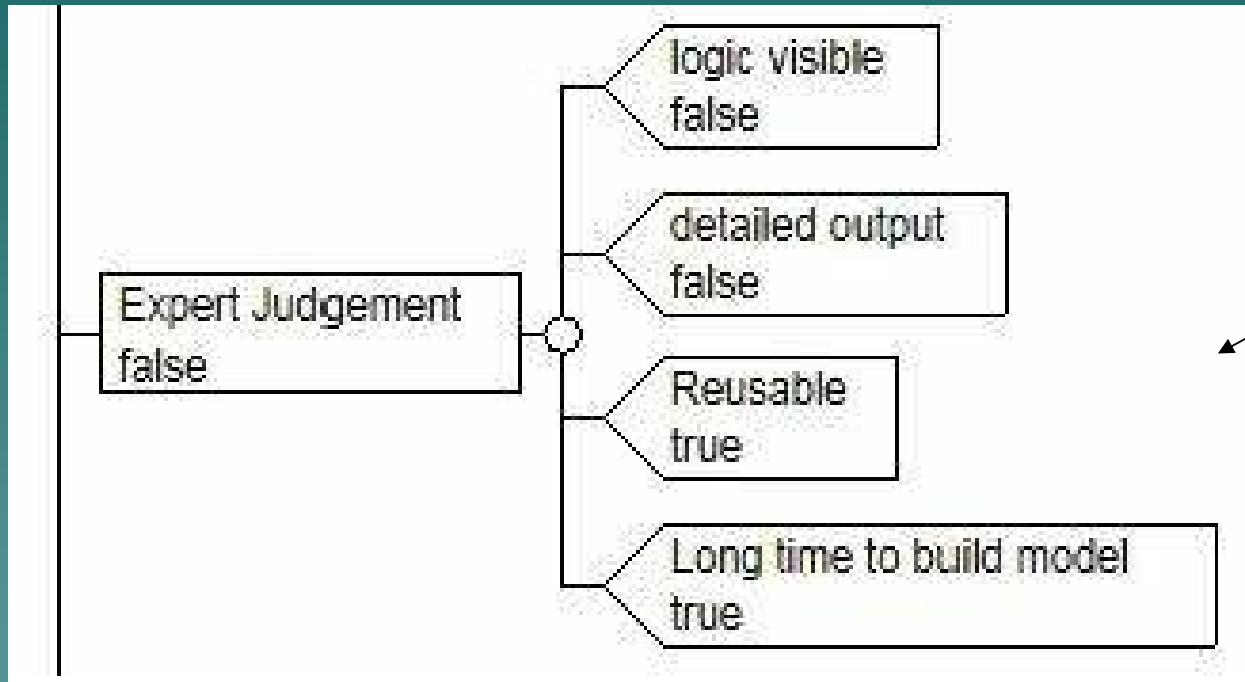
The rules that influence which estimation method to use can be split into 3 categories:

- ◆ Constraints
- ◆ Requirements
- ◆ Capability

Modelling the discrete rules



Modelling the discrete rules



Model Inputs and Outputs

<i>Inputs:</i>		<i>Outputs:</i>	
design stage	true	parametric	true
logic visible	false	neural net	true
innovation	false	generative	false
Reusable	true	Expert Judgement	false
Long time to build model	true	knowledge based systems	false
historical cost data	true	casebasedreasoning	false
detailed output	false	group_technology	false
		function_costing	false
		feature_costing	false
		activity_based_costing	false

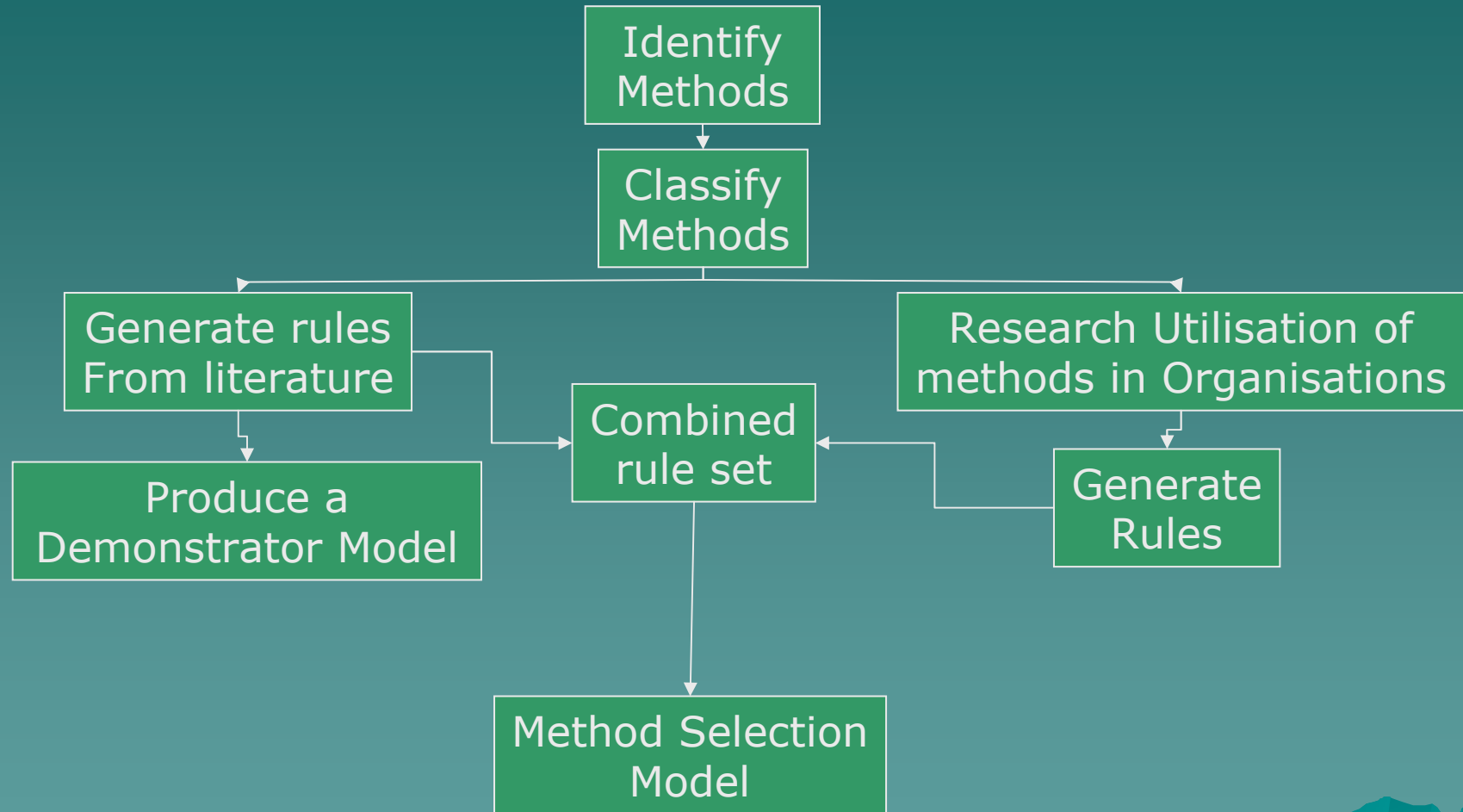
Current and Future Work

- ◆ Interviews with Organisations about how cost estimation is undertaken in practice
- ◆ Knowledge West project assessing Cost Modelling Capability of Organisations
- ◆ Build a more complete tool that includes the fuzziness that is involved in selecting methods

Industry Research- example findings

- ◆ The methods in use were mainly Parametric, Generative and Expert Judgement
- ◆ No examples of Neural Networks being used
- ◆ One organisation using Bayesian Networks for very early cost estimation

Summary



Questions?

