R&D Selection Methods
for New Materials and Processes

Elicia Maine
Centre for Technology Management,
University of Cambridge

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Automotive R&D in New Materials / Processes

• Why do OEMS and suppliers support R&D?
  • Creating Profit Surplus
  • Medium to long term view

• Methods to Create Profit Surplus through new Materials and Manufacturing Processes
  • Lower cost production through process innovation
  • Raising market demand curve through marketable performance enhancement
R&D Portfolio Planning

Technical Risk: 25%
Market Risk: 30%
Potential Reward: 15%
Competitive Position: 50%

Risk / Reward Balance

Unattractive
Strategic
Bread and Butter
No Brainer
Selection of Automotive Materials R&D Projects

- Grasp opportunity!
- Lower risk by systematically assessing project at an early stage
- Method to provide communication between Marketing and R&D

Performance Enhancements

Foam selection for head protection (75% of energy absorbed by elastic deflection of A-pillar)
Technical Cost Model
Material in Basic Form
Shaped Material

Forecasting Cost / Unit

Value Analysis
Cost-Performance Balance

Performance Cost Trade off

Index $M_1$

Index $M_2$

Tradeoff Curve defined by Exchange Constant
R&D Selection Conclusions

- Better way to Assess New Materials and Processes for Automotive R&D
  - Differentiation
  - Lower Costs
- Material Suppliers and Industry Consortiums are ALL going to tout their material
  - Need for in house assessment and prioritisation
  - OR standardised methods