Fig. 3 Problematique for Developing and Implementing Analytical Powertrain (with Categories) apt1is2.chp

Lack of clearly defined vision process for end user (6) — **D**

- Failure to recognize that solid modelling and materials data represent only a small fraction of CAE needs (33) — **C**
- Misperception by management that CAD solid provides adequate model for CAE (43) — **C**

Lack of readiness of some core technologies for implementation (4) — **B**

Inability to resist temptation to roll it out too early (92) — **A**

Inability of some technologies selected and initially implemented to survive as viable products (15) — **B**

Inadequate skill level for using the specialized CAD/CAM/CAE techniques (5) — **I**

Lack of clear role definitions among design engineer, designers and analysts (38) — **D**

Failure to communicate precisely due to lack of dictionary (49) — **F**

Scope of Analytical Powertrain undefined (2) — **D**

Shortfall of 3-D solid modeling systems that can meet the needs of all the different engineering environments (1) — **B**

Lack of "effective" consensus among middle management on who does what (30) — **G**

Lack of definition of domain and scope of database contents (82) — **D**

Failure of AP team to include in its design the needs of all users (64) — **D**

Lack of complete set of analysis methods (3) — **B**

Demands by Ford culture for product hardware (16) — **H**

Difficulty to limit the domain and scope of AP application into long term and short term plan (114) — **D**

Difficulty of dispersing CAE functions to multi-user environment (19) — **N**

Inability to acquire the volume of data required (46) — **N**

- Resistance to change by users and management (7) — **G**
- Limited financial resources (14) — **L**
- Failure to get buy-in from all powertrain offices (21)

Inability of Ford's culture to change to AP methodology (88) — **A**

Overanticipation by management that AP will solve more problems than it really will (22) — **C**

Inadequate knowledge of Object Oriented Databases (OODB). (12) — **I**

Difficulty in developing software to encapsulate AP tools to control information flow (8) — **N**

→ "Significantly Aggravates"