PRODUCT
Design for Manufacture and Design for Assembly

Project Success
- Improved
  - Efficiency
  - Safety
  - Quality
  - Decision Making
- Reduced
  - Exposure to Risk
  - Cost
  - Lead times
  - Waste
PRODUCT
Design for Manufacture and Design for Assembly

- Design Assessment
- Method of Manufacture
- Method of Assembly
- Optimised Virtual Prototype
PROCESS

Process Cost Modelling and Environmental Impact Assessment

Product
• Design Assessment
• Method of Manufacture
• Method of Assembly
• Optimised Virtual Prototype

Process
• Cost Modelling
• Environmental Impact Assessment

Production
• Supply vs Demand Analysis
• Simulation of Throughput
• Virtual Facility Layout

Parts Supply
• Analysis of Supply Chain Strategies
• Impact Assessment of Key Resources
• Feasibility of Project Plans

Quality Assurance Framework

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Example of a Process Cost Model

Figures on the right demonstrate the types of outputs the cost model can provide: operational cost of component manufacture, total non-operational cost of facility.
PRODUCTION
Facility Design and Layout

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Quality Assurance Framework
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PARTS SUPPLY
Supply Chain Modelling

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QUALITY ASSURANCE FRAMEWORK
Planning for Manufacturing Quality

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Quality Assurance Framework

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QUALITY ASSURANCE FRAMEWORK
Planning for Manufacturing Quality

Phases of Advanced Product Quality Planning [XR Training 2017]

- **Concept Approval**
  - **Planning**
  - **Product Design & Development**
  - **Process Design & Development**
  - **Product & Process Validation**
- **Program Approval**
- **Prototype**
- **Pilot**
- **SOP**

**Phase 1**: Plan & define program
**Phase 2**: Product design verification
**Phase 3**: Process design verification
**Phase 4**: Product & Process validation
**Phase 5**: Feedback from production, corrective actions
Effective implementation will help you realise:

**Improved:**
- Efficiency
- Safety
- Quality
- Decision Making

**Reduced:**
- Cost
- Lead times
- Waste
- Exposure to Risk
“The MTC have brought their insights from the world of Aerospace and Automotive, showing us how to master and continuously improve on design, quality, supply chain analysis, collaboration and delivery. Cross pollination such as this must be the way to address productivity and efficiency in construction.”