Key Issues Gates & Checkpoints in Product Development

Sigma Design Company offers the following list of key checkpoints throughout the full product development and commercialization cycle.

1. Concept stage: preliminary investigation
   - Market research
   - Concept description
   - Patent disclosures
   - Target specifications
   - Target costs
   - Forecast by size & material
   - Market size – expected share
   - Comparison to competition features, strength vs. weakness
   - ID barriers to new manufacturing techniques
   - Assembly review – key inspection points, tooling & fixtures

2. Technical feasibility stage:
   - Marketing plan
   - R & D plan
   - Production development plan
   - ID safety issues
   - Production feasibility
   - Preliminary product design
   - Preliminary product manufacturing process
   - Cost estimate
   - Schedule
   - Market focus
   - Develop test plan
   - Develop production plan
   - QA/QC tests
   - OIM warning labels

3. Developmental stage:
   - ID critical materials
   - ID critical processes
   - Proof of performance
   - Description of routings, machines & materials
   - Costed BOM
   - Flow chart routing
   - Assembly drawings
   - Detail design drawings
   - QA/QC tests
   - OIM warning labels
   - Financial review

4. Production preparation stage:
   - Lean manufacturing review
   - Testing & validation
   - Supplier review
   - Quality review
   - Complete first prototype
   - Test reliability
   - Inspection drawings
   - Spare parts plan
   - BOM release
   - Sales drawings
   - Promotions, brochures, price structure
   - Review financial
   - Customer test sites

5. Full scale production:
   - Release ECN
   - Trial run manufacturing
   - Routings
   - MPS update
   - Stock transfer
   - Approval of final production plan
   - Approval of final marketing plan

6. Review – feedback:
   - Quality review
   - Customers’ comments
   - Design changes, shop changes, ECNs