What is PLM?

“Product Lifecycle Management (PLM) is the business activity of managing a company's products all the way across the lifecycle in the most effective way.”

*2PLM - Product Lifecycle Management ezine
The PLM Value Framework

Click on the highlighted boxes to get more value details →

Benefits

- Revenue
  - Time to Market
  - Time to Volume
  - Customer Service

- Costs
  - Scrap and Rework
  - Material Costs
  - Labour Efficiency

- Capital
  - Inventory Levels

- Risk
  - Regulatory Compliance
  - IP Leakage

Potential Improvement

- 10% to 30%
- 15% to 50%
- Unquantifiable
- 10% to 30%
- 1% to 2%
- 5% to 10%
- 5% to 10%
- Unquantifiable
- Unquantifiable
Summary

- PLM is an activity that can transform a business.
- PLM is not an ‘engineering-only’ initiative, it is about transparency and management across the whole value-chain.
Revenue - Time to Market

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>PLM Capability</th>
<th>Business Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-inventing the wheel</td>
<td>Centralised Product Data Repository</td>
<td>First mover price advantage</td>
</tr>
<tr>
<td>Too many prototypes</td>
<td>Improved downstream visibility</td>
<td>Market mind share</td>
</tr>
<tr>
<td>Delays in starting production</td>
<td>Elimination of paper processes</td>
<td>Market reputation for innovation</td>
</tr>
<tr>
<td>Non-value add time</td>
<td>Resource Capacity Planning</td>
<td>Potential improvement of 10% to 30%</td>
</tr>
<tr>
<td>Not enough of the right kind of people</td>
<td>Portfolio Management</td>
<td></td>
</tr>
<tr>
<td>Lack of prioritization</td>
<td>Project Tracking</td>
<td></td>
</tr>
<tr>
<td>Poor accountability</td>
<td>Task Ownership</td>
<td></td>
</tr>
</tbody>
</table>
Revenue - Time to Volume

**Symptoms**
- Late engineering changes
- Lead-time constraints
- Material shortages
- Manufacturing capacity issues

**PLM Capability**
- Centralised Product Data Repository
- Capture manufacturing expertise early
- Purchasing provided with clear visibility of early design data
- Involvement of Contract Manufacturers during early design phases
- Faster Engineering Change Order cycle time

**Business Impact**
- Increased Revenue during high margin period of new product
- Barrier to entry of competition
- Revenue stream brought forward
- Potential improvement of 15% to 50%
### Symptoms

- Poor Product Quality
- Time to respond to quality issues is too long
- Examples of product being shipped with known issues
- Engineers unaware of quality issues with existing product revisions
- No visibility of past product fixes and revisions
- No visibility of engineering change progress for customer service representatives

### PLM Capability

- Centralised Product Quality Data Repository
- Product Quality data made obvious to engineering
- Closed loop and transparent process from Problem Report through to Engineering Change
- Faster problem to fix cycle through elimination of process delays.

### Business Impact

- Improved customer retention and repeat business
- Lower days sales outstanding figures
- Reputation in the marketplace for quality products and responsiveness is enhanced
Costs – Scrap and Rework

**Symptoms**
- Production people working to old revisions of drawings
- Production staff unaware of potential changes to existing drawings
- Contract Manufacturers working to old revisions of drawings

**PLM Capability**
- Centralised Product Data repository for all product related information
- Visibility of pending/future changes
- Web-based technology permitting secure access by third parties
- Faster Engineering Change cycle times

**Business Impact**
- Less scrap
- Less rework
- Higher yields
- Potential improvement of 10% to 30%
Costs – Material Costs

**Symptoms**
- Margin erosion
- Product costs not competitive
- Not hitting target costs for new products

**PLM Capability**
- Early involvement of purchasing and supply chain in product design process
- Centralised repository of product cost data – history and forecasts
- Visibility of material costs and target cost for design engineers
- Early involvement of key suppliers in the design process through web-based technologies
- Faster Change cycle times

**Business Impact**
- Lower material costs, typically from 1% to 2% reduction in material costs
- Lower product costs, potentially up to 17.5% improvement
Costs - Labour Efficiency

Symptoms
People spending time looking for drawings, specifications, test protocols, etc.
Too much time spent chasing and expediting changes and projects
People keying data into spreadsheets and MS Access databases
People checking data in above systems
Responding to Contract Manufacturer questions

PLM Capability
Centralised Product Data repository for all product related information
Simple but powerful searching capabilities
Web-based technology permitting secure access by third parties

Business Impact
Do more with less or the same people
People spend more time on value add activities
Potential improvement of 5% to 10%
# Capital Efficiency – Inventory Levels

<table>
<thead>
<tr>
<th>Symptoms</th>
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<th>Business Impact</th>
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</thead>
<tbody>
<tr>
<td>Duplication of Part Numbers</td>
<td>Formalised global part number request process</td>
<td>Reduced safety stock levels</td>
</tr>
<tr>
<td>Duplication of Material Specifications</td>
<td>Global specification management</td>
<td>Reduced obsolescence</td>
</tr>
<tr>
<td>Purchasing of materials that are not now needed</td>
<td>Formalised global obsolescence process</td>
<td>Potential improvement of 5% to 10%</td>
</tr>
<tr>
<td></td>
<td>Faster Engineering Change Order Cycle time</td>
<td></td>
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</table>
## Risk – Compliance

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<th>Symptoms</th>
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<tbody>
<tr>
<td>Difficulty in passing regulatory audits</td>
<td>Electronic signatures</td>
<td>Relatively Pain-free audits</td>
</tr>
<tr>
<td>Loss of production due to audit findings</td>
<td>Transparent Audit trails</td>
<td>Improved compliance</td>
</tr>
<tr>
<td>Expensive paper trail to be maintained</td>
<td>Single repository for Device Master Records (DMR) and Design History Files (DHF)</td>
<td>Lower risk of loss of production due to regulatory difficulties</td>
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<td>Elimination of expense associated with maintaining compliance</td>
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</tbody>
</table>
# Risk – Intellectual Property Leakage

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<tr>
<td>Competitive products appearing on the market</td>
<td>Secure and traceable sharing of product design data</td>
<td>Maintaining barrier to entry of lower cost suppliers</td>
</tr>
<tr>
<td>Loss of technology lead</td>
<td>Sharing only what is necessary</td>
<td>Preservation of market share</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preservation of sales margin</td>
</tr>
</tbody>
</table>
PLM and Product Cost

<table>
<thead>
<tr>
<th>Cost designed in</th>
<th>Ability to make changes</th>
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<tbody>
<tr>
<td>80%</td>
<td>20%</td>
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Benefits of early integration: design, sourcing, suppliers

- Cut costs by 17.5%
- Improve quality 10% - 20%
- Cut design cycles by 20%
- Cut time-to-market cycles: by 10% - 15%
What does the Supply Chain do with Product Data?

- Bills of Material
  - MRP - Purchasing
  - Work Orders
  - Supplier quotation
  - Servicing

- Drawings
  - Manufacture
  - Supplier quotation
  - Test
  - Servicing

- Material Specifications
  - Test
  - Purchasing

What is the cost of data accuracy?
What is the cost of a slow change process?
What is the cost of not providing visibility of pending change?