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A vision for the future using Product Lifecycle Management (PLM) as a platform for operational excellence and business transformation

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Product Lifecycle Management (PLM) as a Platform for Business Change

Leveraging technology to meet industry challenges
Introductions and Agenda

Jo Conlon FHEA, MCMI, C.Text.ATI
- Textile Technology graduate with 18 years experience in the clothing industry
- Technical and Sourcing Manager
- Joined UoH 2009, Fellow of the Higher Education Academy, a member of the Chartered Management Institute and an Associate of the Textile Industry

Lakshmi Narayanaswamy – Lead Consultant
- An Engineering graduate (Textile technology) with 12 years of Experience. Played various roles in Apparel Industry including sourcing & vendor management
- Key PLM Engagements : George-Asda (U.K), Lacoste(France), LCWaikiki(Turkey)
Future professionals as change-agents

A transformational mind-set is required for strategic organizational efforts like PLM that are more complex than just a technology implementation

People, product and processes
What is product lifecycle management (PLM)?

PLM 1.0
- Operational Excellence

PLM 2.0
- Digital Industry

PLM 1.0 Driving Operational Excellence

- Improve quality
- Improve productivity
- Reduce TTM
- Reduce admin overhead
- Reduce rework and scrap
- Improve customer satisfaction
- Business process improvement
- Enhance collaboration with supply chain
Enablement
A strong PLM core is an enabling platform for change

Differentiation
Emerging technologies and solutions can provide data and improve decision making

Transformation
PLM operates at the cutting edge of information and technology, to transform enterprise's business model
<table>
<thead>
<tr>
<th>what's being done today?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INNOVATION IN MATERIALS</strong></td>
</tr>
<tr>
<td>Fly knit - produces 60% less waste than traditional cut-and-sew methods. Since 2012, the technology has reduced nearly 3.5M pounds of waste</td>
</tr>
<tr>
<td><strong>RECYCLE</strong></td>
</tr>
<tr>
<td>Used Tee shirts to new jeans</td>
</tr>
<tr>
<td>Plastic Bottles to Performance Products</td>
</tr>
<tr>
<td><strong>RE WEAR &amp; REUSE</strong></td>
</tr>
<tr>
<td>Second hand clothes</td>
</tr>
<tr>
<td>Turn into Other Products, like industrial rag, insulation, running tracks etc.</td>
</tr>
<tr>
<td><strong>RENEWABLE ENERGY</strong></td>
</tr>
<tr>
<td>Move towards using renewable energy sources</td>
</tr>
<tr>
<td><strong>REPAIR</strong></td>
</tr>
<tr>
<td>Empowering customers by making quality products that can be repaired and encouraging the same</td>
</tr>
</tbody>
</table>
Generate standardized performance scores

Measure Environmental and Social impacts on Sustainability

Online self-assessment tool for Apparel and Footwear Industry

Gives an overview of the sustainability performance of a product and a company.
Allow Brands to benchmark their performance and discover where they stand compared to other Brands.

Can share score with other SAC members, which can lead to sharing best practices and new partnerships.

Benchmarking by facility type allows facility managers to compare their performance against their peers.

Can identify areas for improvement and outline the current best practices in the field.

Helps to measure environmental impact of the product at different stages of Product Life Cycle.

Engage designers and developers in making sustainable choices at the very earliest stage of prototype design.
Environmental Impacts at every stage product lifecycle

- **Fiber Production**
- **Garment Manufacturing**
- **Fabric Production and Processing**
- **Garment Processing**
- **Packaging**
- **Distribution**
- **Customer Use**
- **End of Life**

<table>
<thead>
<tr>
<th>Environment Impact</th>
<th>Fiber Production</th>
<th>Garment Manufacturing</th>
<th>Fabric Production and Processing</th>
<th>Garment Processing</th>
<th>Packaging</th>
<th>Distribution</th>
<th>Customer Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Used and Green Houses Gas Emissions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Water Used</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Chemicals Used</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
</tr>
<tr>
<td>Waste Generation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Lets set one common standard which can be used globally
MSI (Material Sustainability Index) Framework

MSI Framework

Qualitative Scoring (50 points)
- Recycled content
- Fiber Certifications
- Green Chemistry Verifications
- Coating Finishes

Quantitative Scoring (50 points)
- Chemistry
- Energy
- Water
- Waste

Creating a **common baseline** for material performance for Manufacturers & retailers

Data on **thousands** of Material types

**MSI contributor tool** – allows manufacturers and retailers submit data back to Higg MSI

Achieve the environmental and social **transparency** that consumers are starting to demand
## Solution Approach

### Product Sustainability

<table>
<thead>
<tr>
<th>Define</th>
<th>Create</th>
<th>Pull</th>
<th>Compare</th>
<th>View</th>
<th>Analyze</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define the Target Sustainability Scores for each category during Planning Stage</td>
<td>Create the Product and enter the details for ‘Sustainability Sections’ in the Product</td>
<td>Pull the Fabrics and Trims on Product BOM and get the Material Section Score</td>
<td>Compare the ‘Target Vs Actual’ Product Sustainability Score</td>
<td>Check Line Sheet to view the ‘Product Sustainability Status’ in a single view</td>
<td>Review and Analyze the Products</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section-1 Score</th>
<th>Section-II Score</th>
<th>Section-III Score</th>
<th>Section-IV Score</th>
<th>Section-V Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Section Score</td>
<td>Manufacturing Section Score</td>
<td>Packaging Section Score</td>
<td>Product Use Section Score</td>
<td>End of Use Section Score</td>
</tr>
</tbody>
</table>

**Final Product Score**
Screenshots – Fabrics & Bill of Materials

### Material Fabric:

<table>
<thead>
<tr>
<th>Material Composition</th>
<th>Material Percent</th>
<th>Standard Material Name</th>
<th>Standard Material Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>50</td>
<td>Cotton Fabric, Knit</td>
<td>25</td>
</tr>
<tr>
<td>Linen</td>
<td>50</td>
<td>Linen Fabric</td>
<td>22</td>
</tr>
</tbody>
</table>

### Material Sustainability Details:

- **Fabric Content Score**: 41
- **Coating and Laminate Applied**: No
- **Dyeing Method**: Not Dyed
- **Reduced Chemical Impact**: Yes
- **Material Score**: 64

### Bill of Materials:

**Bill of Materials**: 001 : Wrapper Style Skirt BOM

**Header Attributes**: 06/12/2017

<table>
<thead>
<tr>
<th>Placement</th>
<th>Mark Up</th>
<th>Material</th>
<th>Supplier</th>
<th>Material Status</th>
<th>Color</th>
<th>Size</th>
<th>Finish</th>
<th>BOM UOM</th>
<th>Price</th>
<th>Price OVR</th>
<th>Loss %</th>
<th>Consumption</th>
<th>Total</th>
<th>Weights %</th>
<th>Material Score</th>
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</thead>
<tbody>
<tr>
<td><strong>Fabrics</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Main Fabric</td>
<td>New</td>
<td>10853 Knit 50% Cotton, 50% Linen</td>
<td>A &amp; E CONNOCK LTD.</td>
<td>In Development</td>
<td>Aziathe Green</td>
<td>26, 28, 30, 32, 34</td>
<td>Enzyme</td>
<td>sqyd</td>
<td>$1.90</td>
<td>$0.00</td>
<td>0.00</td>
<td>1.50</td>
<td>$2.85</td>
<td>80</td>
<td>64</td>
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<tr>
<td><strong>Trims</strong></td>
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<tr>
<td>Waist Band</td>
<td>New</td>
<td>10832 Button Metal 4 hole metal button</td>
<td>A &amp; E CONNOCK LTD.</td>
<td>In Development</td>
<td>African Violet</td>
<td>12L</td>
<td>Metal</td>
<td>each</td>
<td>$0.08</td>
<td>$0.00</td>
<td>0.00</td>
<td>4.00</td>
<td>$0.32</td>
<td>15</td>
<td>65</td>
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<tr>
<td>New</td>
<td>New</td>
<td>10534 Hang Tag UPC Europe Paper</td>
<td>BARCODES WEST</td>
<td>Active</td>
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<tr>
<td><strong>Packaging</strong></td>
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<tr>
<td>New</td>
<td>10836 Boxes Carton</td>
<td>AMERICAN &amp; EFD</td>
<td>In Development</td>
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<tr>
<td>New</td>
<td>10838 Poly bag Individual poly bag</td>
<td>BARCODES WEST</td>
<td>In Development</td>
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Impact / Benefits

**PLM**

- Stream-lined Processes
- Speed-to-Market
- Well Defined Roles & Responsibilities
- Re-usability
- Single-Version of Truth

**SUSTAINABILITY SOLUTION**

- **Plan Collection with Sustainability Target**
  - Set a direction for the designers to plan collection accordingly
  - Can export the data in excel/pdf format

- **Generate Reports**
  - Generate a consolidated report for each Season
  - Can identify areas for improvement
  - Can track how much % of Sustainability Target has been achieved

- **Dashboards**
  - Can get a Snapshot of Sustainability score for each Product in a Season
Thank you
Connect with us to understand how ITC Infotech can help your business.

Email: contact.us@itcinfotech.com
Web: www.itcinfotech.com