Manufacturing Improvement
the Wright Way:

Next Steps Towards Operational Excellence

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About Wright Medical Group N.V.

- Incorporated in the Netherlands with US headquarters in Memphis, Tennessee
- 2,500 global employees
- Leader in three of the fastest growing areas of orthopedics – Upper Extremities, Lower Extremities and Biologics
- 3 principal manufacturing plants: Tennessee, France, Ireland
Medical Device industry margins pressured due to challenging healthcare environment

Beginning to see Sales Price Pressure on Orthopaedic Extremity Products

How can we maintain & even INCREASE margins?
LOOKING AHEAD: Challenging Business Environment

Espicom data translates into a 5% year-on-year COGS reduction--*just to stand still!*

Need to focus on both variable cost & OPEX (G&A expenses)
<table>
<thead>
<tr>
<th>Breakdown</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>40%</td>
</tr>
<tr>
<td>Direct Labour</td>
<td>20%</td>
</tr>
<tr>
<td>Indirect Labour</td>
<td>20%</td>
</tr>
<tr>
<td>Other Indirect Costs</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

- Use simple bar stock where possible
- Re-engineer processes to take out direct labour
- Back-office Process Improvement
- Internal & External benchmarking

Machine Cost (Depreciation) is 7% of the total COGS
Machining Process Improvement Example: Shoulder Stem

Taking out Direct Labour

### Ascend Flex Shoulder Stem Process Improvements

<table>
<thead>
<tr>
<th>Year</th>
<th>Labour Time (Hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>~0.60</td>
</tr>
<tr>
<td>2013</td>
<td>~0.50</td>
</tr>
<tr>
<td>2014</td>
<td>~0.40</td>
</tr>
<tr>
<td>2015</td>
<td>~0.30</td>
</tr>
<tr>
<td>2016</td>
<td>~0.20</td>
</tr>
<tr>
<td>2017</td>
<td>~0.10</td>
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</tbody>
</table>

- **Reduction of inspection frequency through review of SIG.**
- **Add machining of Distal tip to reduce manual finishing.**
- **Improvements to tooling and process capability, less finishing & set up time.**
- **Introduce profile gauges and improved methods of inspection.**
- **Tooling improvements to taper milling process, reduce setup times.**
- **Inspection layout revised to reduce paperwork & ease of use.**
- **Provided dedicated pressure pot shotblaster system.**
- **Tooling Improvements to front face.**
- **Bar Diameter Reduction.**
- **Second Shotblaster.**
**Labor Time Comparison with Sister Manufacturing Facility**

**Machining Labor time**

- **Labor Time Ireland**
- **Labor Time Sister Facility**

- **Comparable Shoulder Product Range**

**Action:** Leverage Audit Findings to Reduce COGS
The Way Forward: A More All-Embracing Approach

- To date, improvement effort has focused on direct manufacturing & necessary Engineering & Quality support
- Trend in direct labour optimization has helped keep COGS in check
- We need to do more!
- Utilize Continuous Improvement across manufacturing site to improve volume leverage with minimal increase in indirect headcount & manufacturing admin costs
- The Shingo Enterprise Excellence model will help us achieve this goal

The Shingo Model for Enterprise Excellence

Mór Benchmark Model
Recent Operational Excellence Timeline

**2016**
- Q1: Aug ’16: SA Partners Culture Survey
- Q2: Oct ‘16: Mgt Team review of Survey findings
- Q3: Dec ‘16: CSF’s Kicked Off *
- Q4: Culture Focus

**2017**
- Q1: Feb ’17: Site communication sessions to launch Program
- Q2: May ’17: Coaching Program Kick Off
- Q3: Jan’17: Fortnightly Governance Meetings set up to track progress
- Q4: Strategy – Implementation Phase

**2018**
- Q1: Nov ‘17: Coaching Program Completion
- Q2: Strategy – Sustaining Phase
- Q3: Nov ‘18:
- Q4: Strategy

**2019**
- Q1: Dec ‘18:
- Q2: Jan ‘19:
- Q3: Feb ‘19:
- Q4: March ‘19:

Strategy Tag Line

0
Zero Accidents
Zero Defects
Zero Waste

50
50% Reduction in Lead Times

100
100% Increase in Volumes
Critical Success Factors ("CSFs")
Ideal Behaviours

**Wright Values**

**Think Customer** – Drive simplified solutions.

**Embrace Change** – Comfortable being uncomfortable.

**Alignment** – One Team. One Direction.

**eMpowerment** – Own it. Do it.

**Sustainability** – Consistently profitable.

**Shingo Guiding Principles**

1. Respect for all
2. Can do attitude
3. Lead by example
4. Understand the why
5. Deliver on your promises
Management Process (Visual Factory)

**DEFINITION:**
A visual process for **ALL AREAS** that allows simple and clinical focus & engagement on our key deliverables around EHS, Quality and Site Performance - getting them **Right First Time** all the time.

- Two categories in Management Process:
  - Site Project List: Generated for review and prioritisation
  - Key Performance Indicators (KPIs): 4 tiers will align with 0-50-100
To summarise....

5% reduction in COGS year-on-year
Thank you

Your First Choice in Extremities and Biologics