Presentation of Customer Services Division by Erik Birch, division manager
Business Areas – Customer Services Division

- Manufacturing
- Projects
- Services
- Parts
Examples of replacement parts
Improvements to older kiln types

Kiln lamellae seal

Unax cooler parts

Duoflex burner
Market Description – Customer Services

- CSD market is global, covering all aspects of serving existing plants with parts, services, minor projects, pneumatic transport parts and projects. Through the project divisions, CSD also serves the market with supervision for installation and commissioning.

- More than 1500 customers are served and CSD receives more than 10,000 orders per year.

- Our market is very competitive with competitive pressures from bottom and from top.

- Generally our products have no legal protection from competitor copying due to lack of patents.
Customer Services - Parts Market

- The products are parts of cement equipment, mainly FLSmidth designed machines
- Most parts are fabricated, forged or cast parts, which can be copied with relative ease
- New plants are usually supplied with 2 years supply of parts, so the aftermarket starts to grow towards the end of this period
- Over time the customers have opportunity to disassemble machines and in the process build a database of parts, often with reverse-engineered drawings
- Lifetime of plant is often in excess of 25 years
- When replaced, it is often with large capacity new units, giving fewer parts per ton of production capacity
- Improved value-creating parts are needed to differentiate from competing products


Competitors – Parts

- Local foundries and workshops
- OEM suppliers such as GE, ABB, SKF, FAG, Siemens
- Specialised global foundries such as Magotteaux, AIA, Columbia Castings, Estanda etc.
- Polysius, KHD, FCB, L&T, CEMAG etc.
- Customers themselves…
Competitors - Services

- Philips Kiln Services
- Polysius, CEMAG, KHD, FCB, L&T etc.
- Independent consultants (former employees of FLSmidth and competitors)
- Customers themselves…
Competitors - Minor projects

- Polysius, KHD, LVT, CEMAG, Enexco, FCB, etc.
- Claudius Peters, Lösche, Gbr. Pfeiffer, IKN, Greco etc.
- Local engineering companies (no global reach)
- Customers engineering departments, f. inst. Holcim, Heidelberg, Italcimenti, Cemex, Lafarge
Mechanical Equipment Services

Examples

- Gear inspections
- Mill inspections
- Kiln inspections
- Mechanical failure analysis
Operating Services

Examples

- External inspection of all machines
- Examination of available operational data and check of control data collected during operation
- Analyses of relevant samples collected during operation
- Calculation of heat and raw material balances
- If the kiln is stopped, internal inspection of kiln, cooler, preheater, calciner and other machines operating closely together with the kiln
Cement Services

Commissioning

Trouble Shooting

Training

Erection Services
Project timelines - Large Projects

- 3 months
- 3-9 months
- 2-3 years

Receipt of Tender
Process Design
Tech. Specification
Costing
Performance Guar.
Delivery Schedule
Commercial Cond.
Contract Draft
Proposal
Negotiation/Revisions
Award
Final Process Design
Foundations and Erection Drawings
Manufacturing Documentation
Procurement
Inspection/Expediting
Shipping
Installation and Commissioning
Project timelines – Small Projects

<table>
<thead>
<tr>
<th>3 weeks</th>
<th>2 weeks</th>
<th>1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipt of Tender</td>
<td>Process Design</td>
<td>Tech. Specification</td>
</tr>
<tr>
<td>Costing</td>
<td>Performance Guarant.</td>
<td>Delivery Schedule</td>
</tr>
<tr>
<td>Commercial Cond.</td>
<td>Contract Draft</td>
<td>Proposal</td>
</tr>
<tr>
<td>Negotiation/Revisions</td>
<td>Award</td>
<td>Final Process Design</td>
</tr>
<tr>
<td>Foundations and Erection Drawings</td>
<td>Manufacturing Documentation</td>
<td>Procurement</td>
</tr>
<tr>
<td>Inspection/Expediting</td>
<td>Shipping</td>
<td>Installation and Commissioning</td>
</tr>
</tbody>
</table>
Customer Services Project - Example:

**Project Scope:**
- New clinker cooler for existing kiln
- Modification of existing preheater
- Construction of new calciner
- Burner and coal dosing for new calciner

**Key Dates of Project:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First inquiry from customer</td>
<td>01/08-2003</td>
</tr>
<tr>
<td>Proposal submitted</td>
<td>19/08-2003</td>
</tr>
<tr>
<td>Contract awarded to CSP</td>
<td>29/09-2003</td>
</tr>
<tr>
<td>Foundation and Erection Drawings submitted</td>
<td>31/03-2004</td>
</tr>
<tr>
<td>Scheduled Commissioning start</td>
<td>18/02-2005</td>
</tr>
<tr>
<td>Actual Commission start</td>
<td>18/01-2005</td>
</tr>
</tbody>
</table>
Kiln and clinker cooler before modification
New cooler being installed
Cyclone preheater modification ongoing
Gas cooling tower modification ongoing
View of preheater, kiln and cooler
Examples:

- CSD India Establishment
- Off-shoring of work to FLSmidth India
- Small Projects in the USA
- Strengthened Presence in the Middle East.
Questions