

Metal Bulletin
Events

WORLD
STEEL
DYNAMICS



8th **Steel Success**
Strategies Conference

Stephane Navarra, President, Harsco Metals Europe

Reduction of scrap-related costs through steel mill
internal efficiency

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Harsco's Core Ideology

Harsco Core Purpose

To build *teams* that *win* with *integrity* anywhere in the *world*

- Value Creation
- Value Capture
- Value Selling
- Be the Best
- Sustainable Superior Performance (20-Mile March)

- Ethical in Thought, Word and Deed
- Disciplined Thought, Disciplined Action and Disciplined People
- Transparency
- Safety
- Personal Accountability and Responsibility

- Customers
- Targeted Market
- BHAG
- Envisioned Future

Harsco Core Values

- > **1 Uncompromising Integrity and Ethical Business Practices**
 - Harsco Integrity Framework:
 - Code of Conduct
 - Security Practices
 - Safety Practices
 - Global Management Practices
 - Internal Control
- > **2 People – the "A Team"**
 - Human Capital Framework:
 - Global Talent Management System for Recruiting, Developing, Retaining and Assessing Human Capital

- > **3 Continuous Improvement**
 - Continuous Improvement Discipline through Lean and Six Sigma Methods
 - Business Transformation
- > **4 Value Creation Discipline**
 - Economic Value Added (EVA®)
 - Value Selling Culture

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Harsco Metals is a leading provider of steel mills services

Key facts:

- Turnover over \$1bn
- 12,000 employees
- Over 160 sites in 30 countries
- Logistics, product quality and resource recovery solutions
- Engineering and consulting services
- Shared knowledge network, best practice transfer

Reference customers:



QUARTO PLATE AND COIL ROLLING MILLS
Trametal Valsider Spartan UK





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We offer full range of services for steel mills' efficiency

RESOURCE RECOVERY SOLUTIONS

- Slag handling
- Metal recovery
- Slag recycling
- Dust & sludge metal recovery and recycling

PRODUCT QUALITY SOLUTIONS

- Scarfing
- Grinding
- Slitting and cutting

LOGISTICS SOLUTIONS

- Scrap Management
- Scrap processing
- Raw Materials handling
- Product handling
- Transportation
- Meltshop services
- Blast furnace services
- Packaging

ENGINEERING & CONSULTING SOLUTIONS

- Project evaluation;
- Equipment selection and procurement;
- Project implementation;
- Facilities commissioning and start up;

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support



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- Personnel training,
- Operations

support

November 2010

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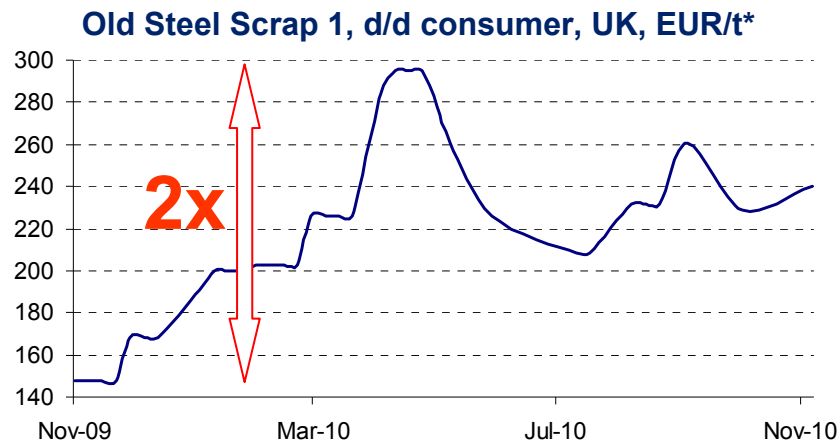
Three things about scrap which affect steelmaker's profitability

- Price
- Quality
- Scrap yard management



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Scrap price volatility directly affects steelmaking costs



Direct effect:

- 1Mt EAF plant – 1.1Mt of scrap – scrap costs in between 160-325 M€
- 3Mt BOF plant – 0.6Mt of scrap – scrap costs in between 90-180 M€

Solution

Replace part of externally purchased scrap with metal recovered from slag and other by-products

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Metal recovery in practice

- Operating plant scrap consumption: 500-650 Ktpa
- Iron production: 3.0 Mtpa
- Steel production: 3.1 Mtpa
- Recovered iron scrap 101 Ktpa
- Recovered steel scrap 108 Ktpa
- TOTAL RECOVERED SCRAP 209 Ktpa



Steelmaker Value

Improvements in the use of internally recovered scrap generate savings of 25 M€ per year for the mill



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Purchased scrap quality usually leaves much to be desired



**20t scrap trial at a steelworks,
randomly selected**

- Fe Yield 74%
- Residues contained hazardous waste

Effects on:

- Purchase costs
- Storage space
- Number of transport vehicles
- Transportation efficiency
- Furnace yield and productivity
- Slag quantity, etc.

Solution

Professional on-site scrap screening and rejecting irrelevant inclusions



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Scrap quality control in practice

- Purchased scrap quality control and inspection

Improvements in furnace yield of 1% from a good quality control and inspection regime have shown savings of 3 M€ per year.

(For annual liquid steel output of ~900Kt)



- On-site shredding of purchased scrap

On site shredding facilities at major steel works in Argentina give cost savings of over 11.5 M€ per year.

(For annual liquid steel output of ~1.4Mt)



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Scrap yard management makes difference for the bottom line

Results of poor scrap management:

- EAF delays waiting for scrap
- Incorrect weights charged
- Low yields
- Increased slag volumes
- Missed specifications
- Increased refractory wear



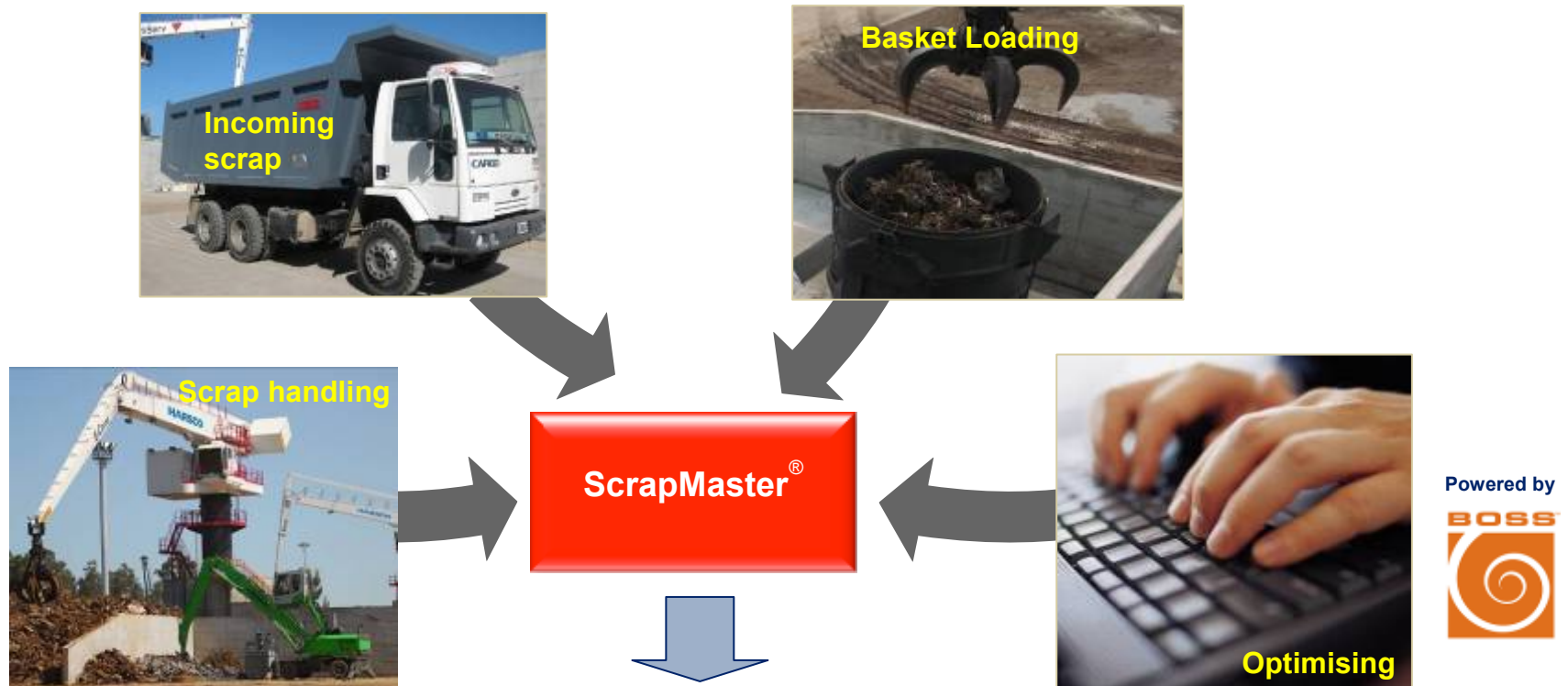
Solution

End-to-end scrap management system using the latest equipment and IT tools

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Cost-effective management of all scrap supply chain with **ScrapMaster®**



Management information reporting puts a seelmaker in control



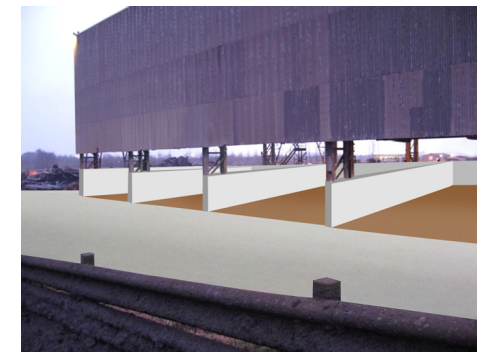
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Advanced scrap yard management in practice

- Scrap segregation and stocking

A well laid out and optimised scrap bay has saved 12.7 M€ in reduced vessel delays for a major integrated steel works

(for annual liquid steel output of 3.9Mt)



- Scrap charge loading

Improvements in the accuracy of charge loading saved the same steel works another 4.5 M€ per year

(for annual liquid steel output of 3.9Mt)





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Summary

- Scrap price volatility
 - ▶ Replace part of externally purchased scrap with internally recovered metal
- Purchased scrap quality
 - ▶ Professional on-site scrap screening and processing
- Scrap yard management
 - ▶ End-to-end scrap management system using the state-of-the-art equipment and IT tools

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Thank you!

Stephane Navarra

President

Harsco Metals Europe

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