Agility in metals: The digital transformation of the steel industry in stormy times

Future Steel Forum Budapest,

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September, 2019
The global metals landscape has been evolving very quickly in recent years.
Today, a storm is coming and the steel industry is facing dynamic and complex market challenges

- Global overcapacities and volatility of global steel markets
- Raw material and energy prices volatility
- Trade frictions and diversion effects (Trump effect)
- Structural challenges of the key customer industry Automotive
- CO$_2$ price increase, regulation and customer demand of CO$_2$ efficient steel
- Necessary consolidation of the steel industry does not progress
- 4.5% year-on-year drop in shipment volumes (EU flat steel products Q1 2019)
- Steel industry faces production cuts or factories closures
- New ways of forward integration, collaboration and partnerships
- Invests needed in CO$_2$ efficiency, new assets and digitalization
In order to succeed, metals companies must balance a number of important factors – to weather the storm or to sail the wind.
Strategy& carried out an in-depth analysis to better understand the importance of digital strategy for metals players.
We placed the companies into four categories depending on where they were in their digital journey.

- **Digital novices**: approx. 30%
- **Vertical integrators**: approx. 35%
- **Horizontal collaborators**: approx. 20%
- **Digital champions**: approx. 15%
Digital champions were the only category of metals players achieving a reasonable level of growth and profitability.

<table>
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<tr>
<th>Revenue growth</th>
<th>Profitability growth</th>
<th>Resilience to volatility</th>
<th>Less debt</th>
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</thead>
<tbody>
<tr>
<td>-1.4% Vertical Integrator</td>
<td>1.5% Digital Champion</td>
<td>-0.7% Vertical Integrator</td>
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<tr>
<td>-1.6% Digital Novice</td>
<td>-0.8% Horizontal Collaborator</td>
<td>-0.4% Digital Novice</td>
<td>-2.6% Horizontal Collaborator</td>
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<td>14.4% Digital Champion</td>
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Source: PwC Strategy & "Agility in Metals", 2018
These players have achieved this by taking the right approach to digital production organised and monitored for efficiency.
The digitization of metals production and the metals value chain leads to a productivity revolution

1) Average CAGR (2011-2017)  
Source: PwC Strategy& “Agility in Metals”, 2018

Enabler: E2E data availability and analysis & efficient IT and data architecture, Competences and Culture
The path to success has its challenges, but the time to act is now to lock in the competitive benefits of embracing digital.

Three guiding principles to embrace on your journey towards becoming a digital champion:

- **Start with a digital vision**
- **Create in networks and partnerships**
- **Embed Digital into your culture**
Digital Champions create new business models in the integrated steel value chain

Application of the business model of ...

**amazon**

... in the metals industry creates an ecosystem that consolidates and centralizes sales, distribution, and planning for various producers

✓ Supplier in a digital ecosystem

**tesla**

... in the metals industry increases the integration in the customer industry to support the customer with design, development, production planning, and component production

✓ Digital system supplier

**uber**

... in the metals industry creates a virtual and digital network of partnerships in production, development, and sales

✓ Digital network supplier (conglomerate)
The next stage of evolution will be to create a fully-integrated digital eco-systems to significantly increase margins – e.g. the Digital Body Shop...
... or to become the first ecosystem facilitator for Additive Manufacturing in a disruptive way to play
Steel companies need to embrace three key elements for the strategy around “green steel” business models to gain competitive advantage

Key elements for green steel business models

New business models needed for green steel (to benefit from advantages of the EAF- or DRI-route)

New material battle with Aluminum due to better CO2 intensity and TCO of Steel (as key driver to compensate weight disadvantage)

CO2-Transparency in real-time and on product level (enabled by digital and big data technology)

EBITDA breakdown of in 2°C scenario

Carbon Intensity (based on Paris 1.7-1.8°C scenario)

CO2 Real-time Dashboards

Future Steel Forum 2019
Strategy &
Source: Strategy &
September 2019
Our agile approach enables steel companies to develop a dynamic, agile strategy (enabled by digital) and to weather the upcoming storm.

Build on digitization, alternative business models and green steel.

We combine agile ways of working with our capability-driven strategy approach building on digital, business models and green steel.

Aligning costs and capex anchors the approach and needs to be closely aligned with strategy, capabilities and operating model.

Differentiated Capabilities
Clear the ship for action

Dynamic Strategy
Find the right course

Operating Model (incl. capabilities)
All hands on deck

Align Costs and Capex
Put down a buoy
Weather the Storm or Sail with the Wind?

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