



ThyssenKrupp Stainless

Stainless Steel Flat, Markets and Trends

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Member of the Executive Board of ThyssenKrupp Nirosta

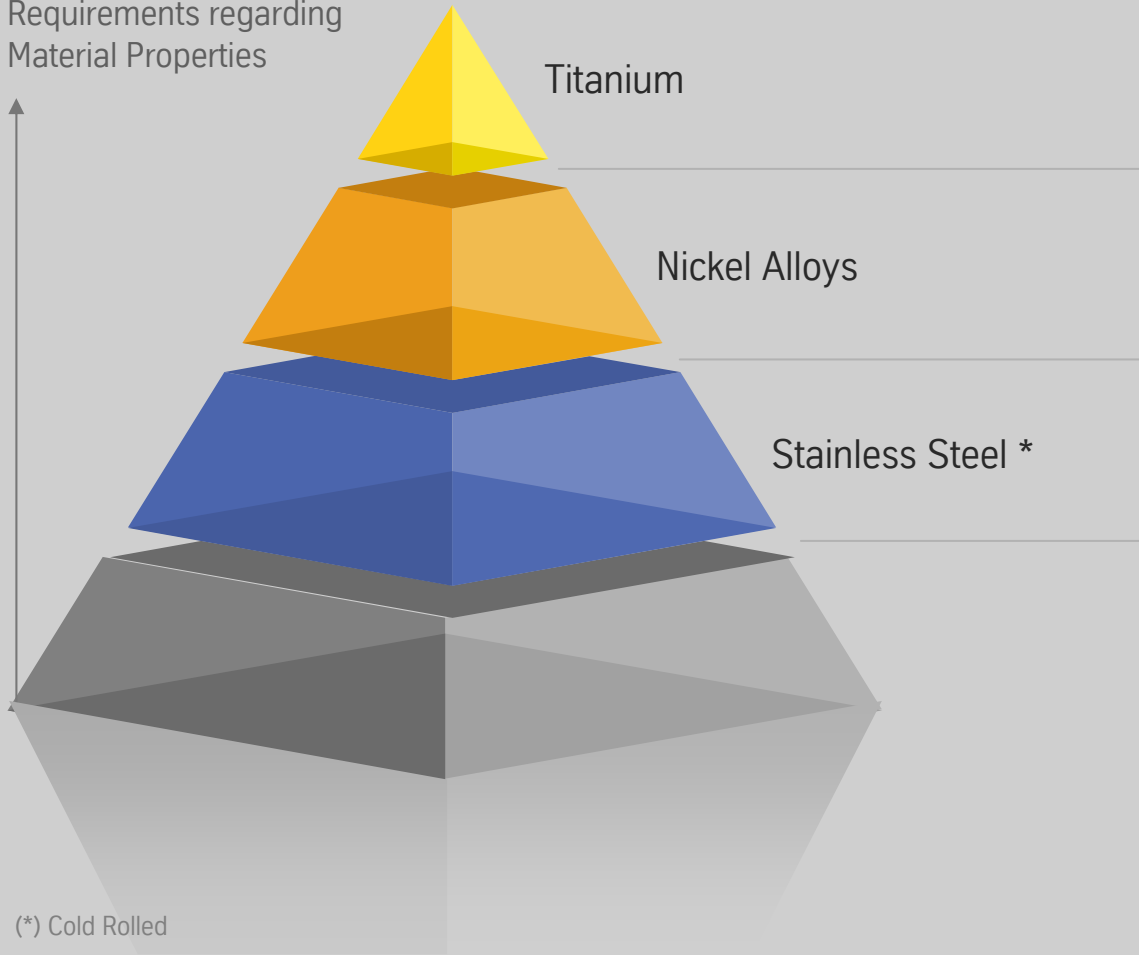
ThyssenKrupp Field Day
October 17, 2008

Agenda

- **Stainless Steel “High Potential Material”**
- **Market approach “Close to the market”**
- **Innovation “Fit for Future”**

Stainless Steel, Nickel and Titanium Alloys are at the Top of the High-Quality Materials Pyramid

Requirements regarding
Material Properties

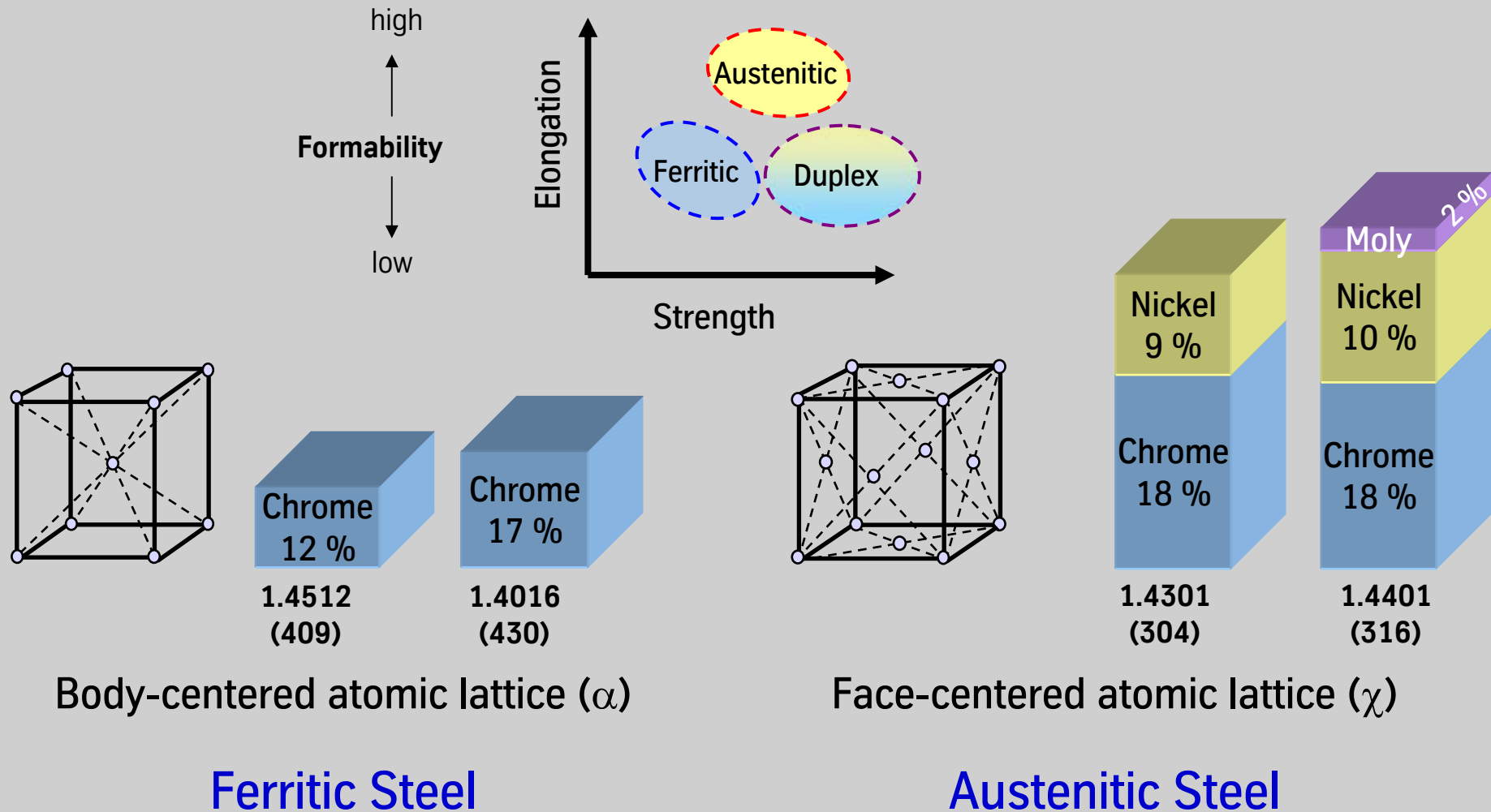


Demand	TKL Deliveries	TKL Market Share	Market Price
1,000 t	1,000 t		EUR / ton
85	5	6%	~50,000
230	33	14%	~30,000
15,385	1,786	12%	~4,000

Calendar Year 2007
Source; CRU August 2008; TKL

The technological properties of stainless steel ...

Correlation of chemical composition and lattice structure



... are unique and are needed for numerous applications

Technological properties of stainless steel and the underlying processes

High temperature resistance

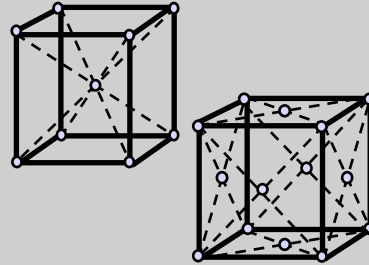
Corrosion resistance

Surface polishing

Formability

Low temperature toughness

Magnetism and Non-Magnetism



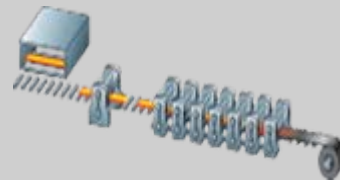
Chemical Composition

+



Metallurgical Process

+

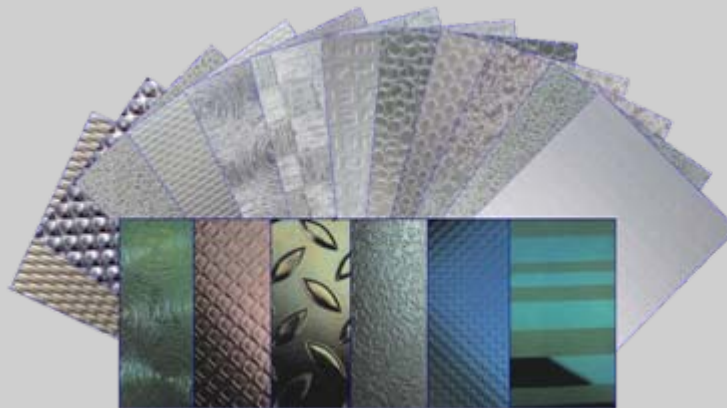


Thermo-mechanical treatment

ThyssenKrupp Stainless supplies customized material solutions

Example: ThyssenKrupp Nirosta's broad portfolio of materials and finishes

<p>Austenitic (11-24 % Cr), (8-18 % Ni), (2-5 % Mo), Ti, Nb, . . .</p> <p>45 grades with approx. 130 specifications</p>	<p>Ferritic (11-19 % Cr), Ti, Nb, . . .</p> <p>21 grades with approx. 40 different specifications</p>	<p>Duplex & Martensitic</p> <p>16 grades with approx. 23 specifications</p>
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Surfaces

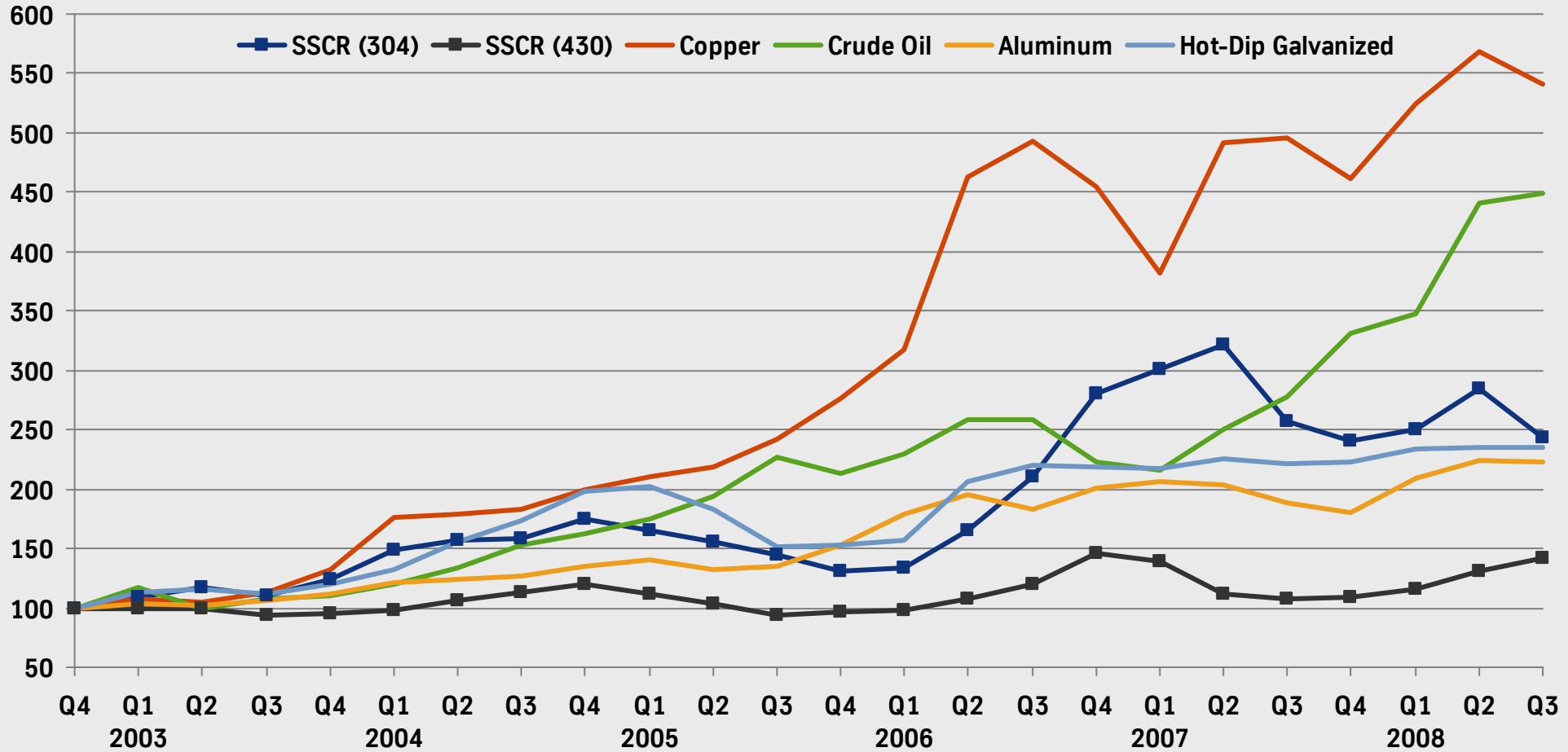


Silver Ice® UV

Price trend for different materials

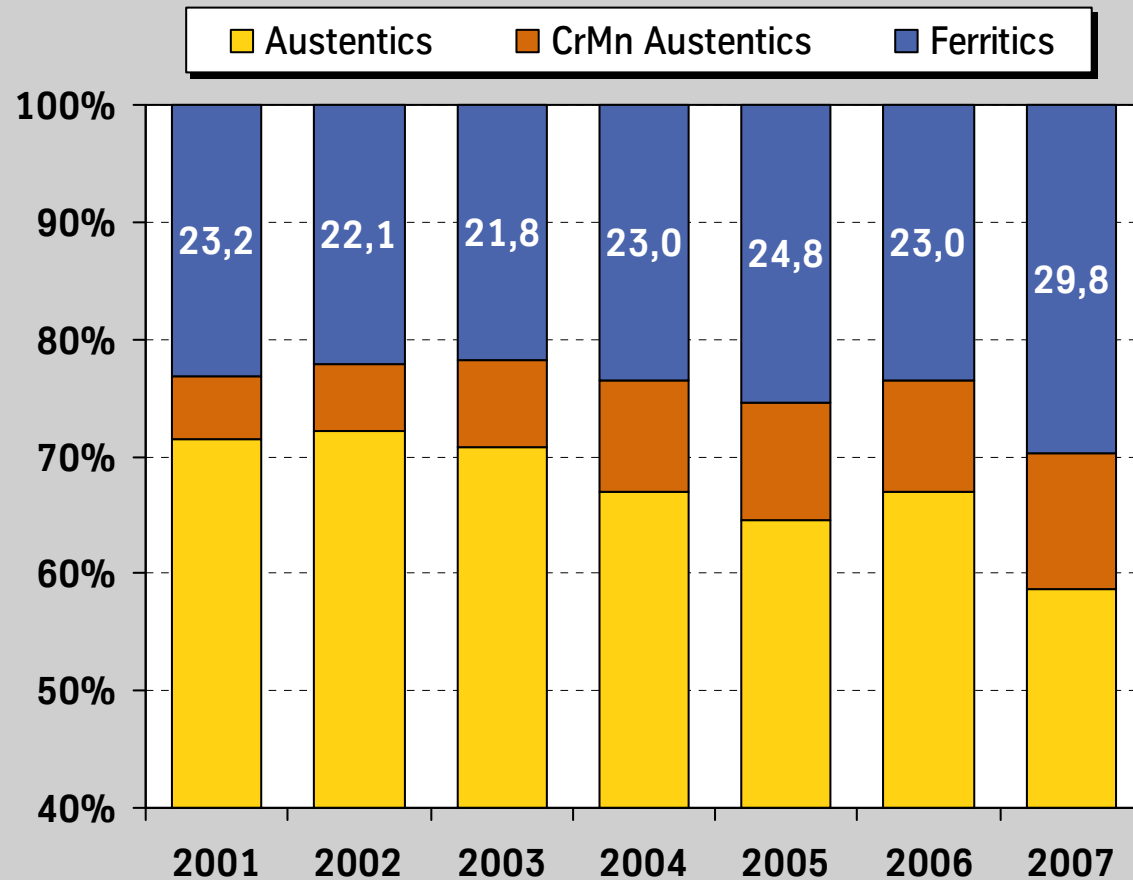
Stainless Steel Cold Rolled (SSCR) does not show highest increase - especially ferritics with lowest volatility

[INDEX USD, Q4 2002 = 100]



Ferritic share increased recently due to nickel volatility

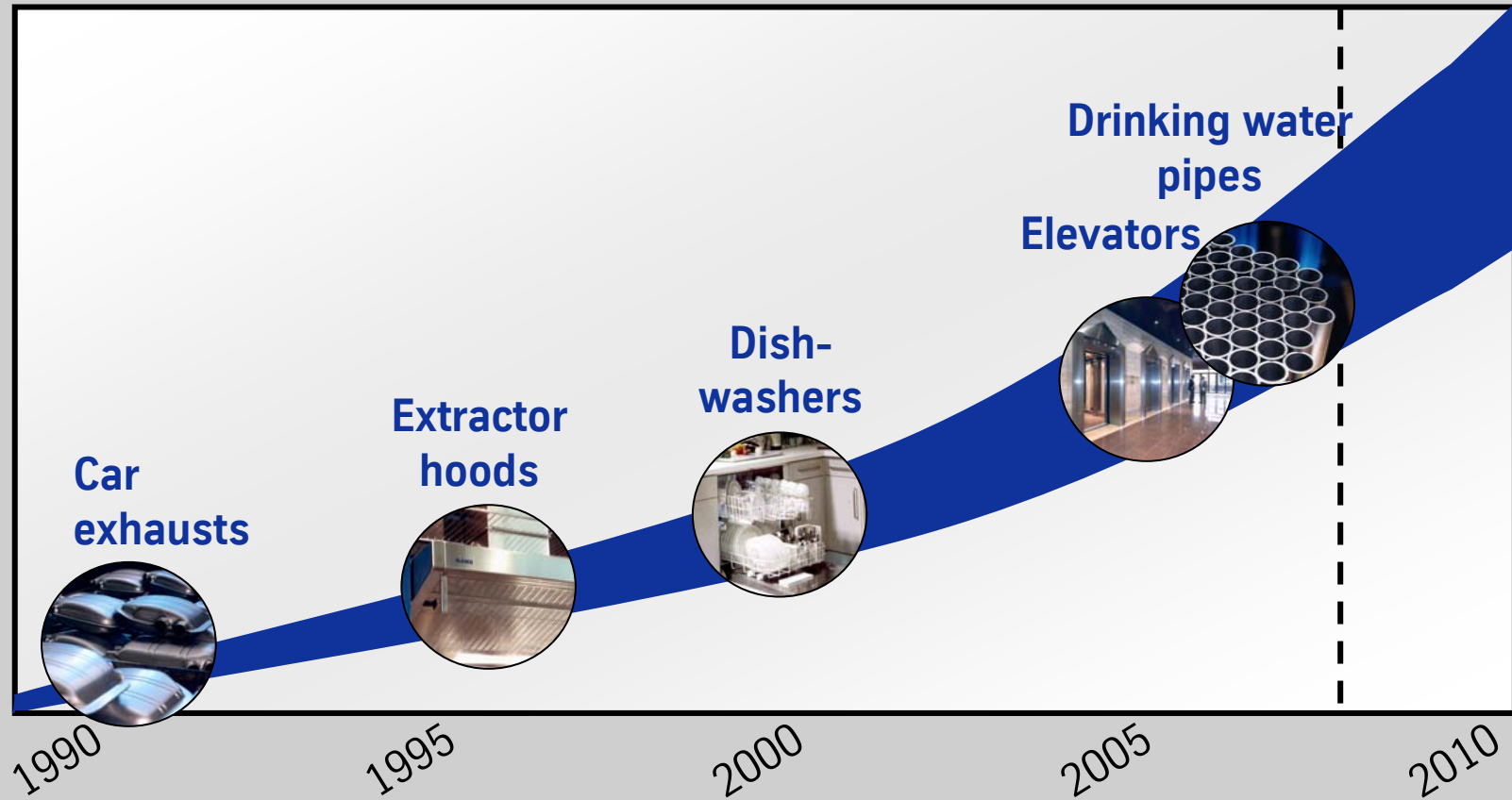
Crude stainless steel production by different material groups



Worldwide change in material shares mainly driven by powerful and innovative stainless producers

Source: ISSF July 2008

Ferritics increasingly attractive as less dependent on raw material prices

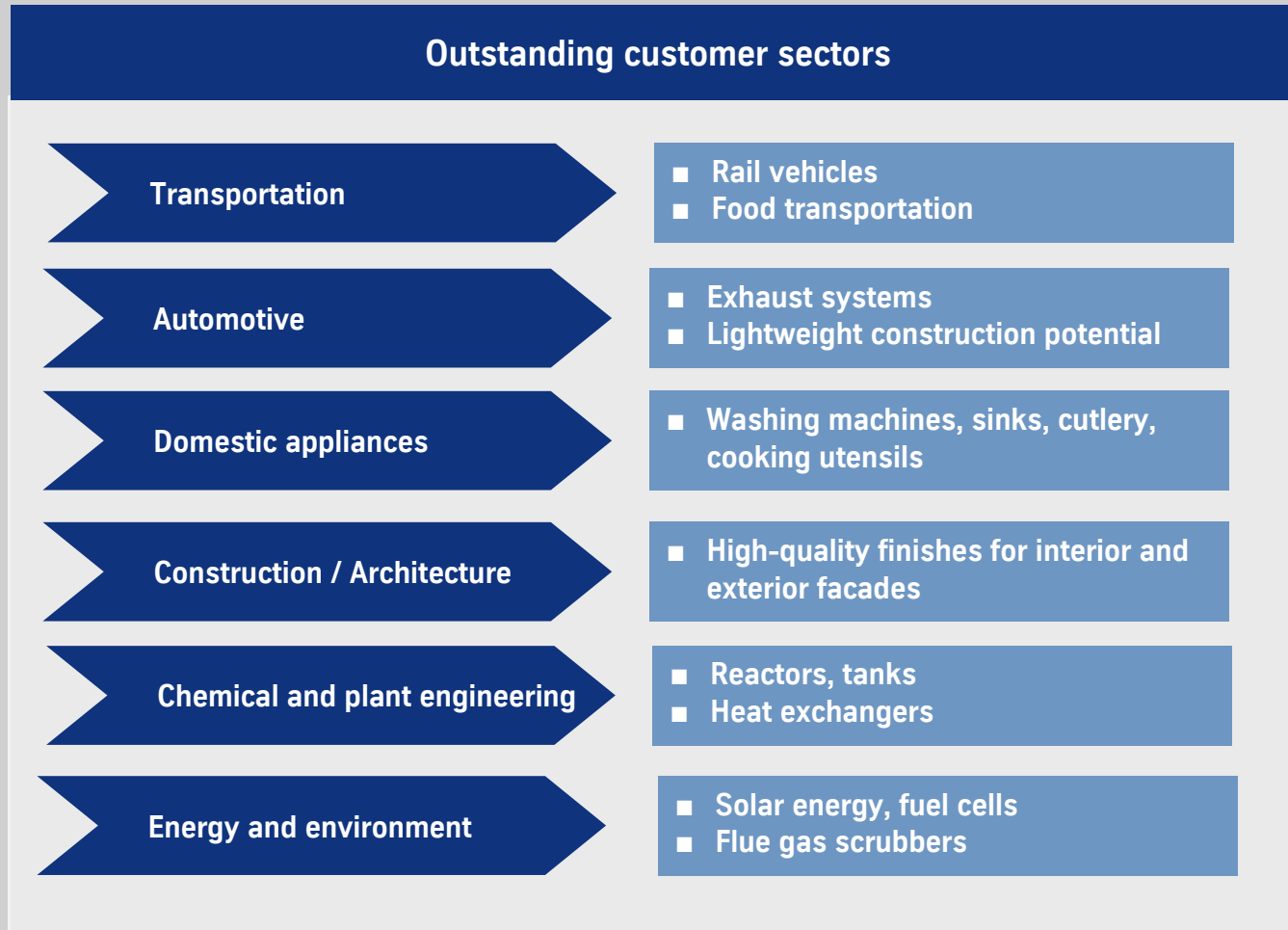


ThyssenKrupp Stainless is optimally placed to follow the trend towards ferritics

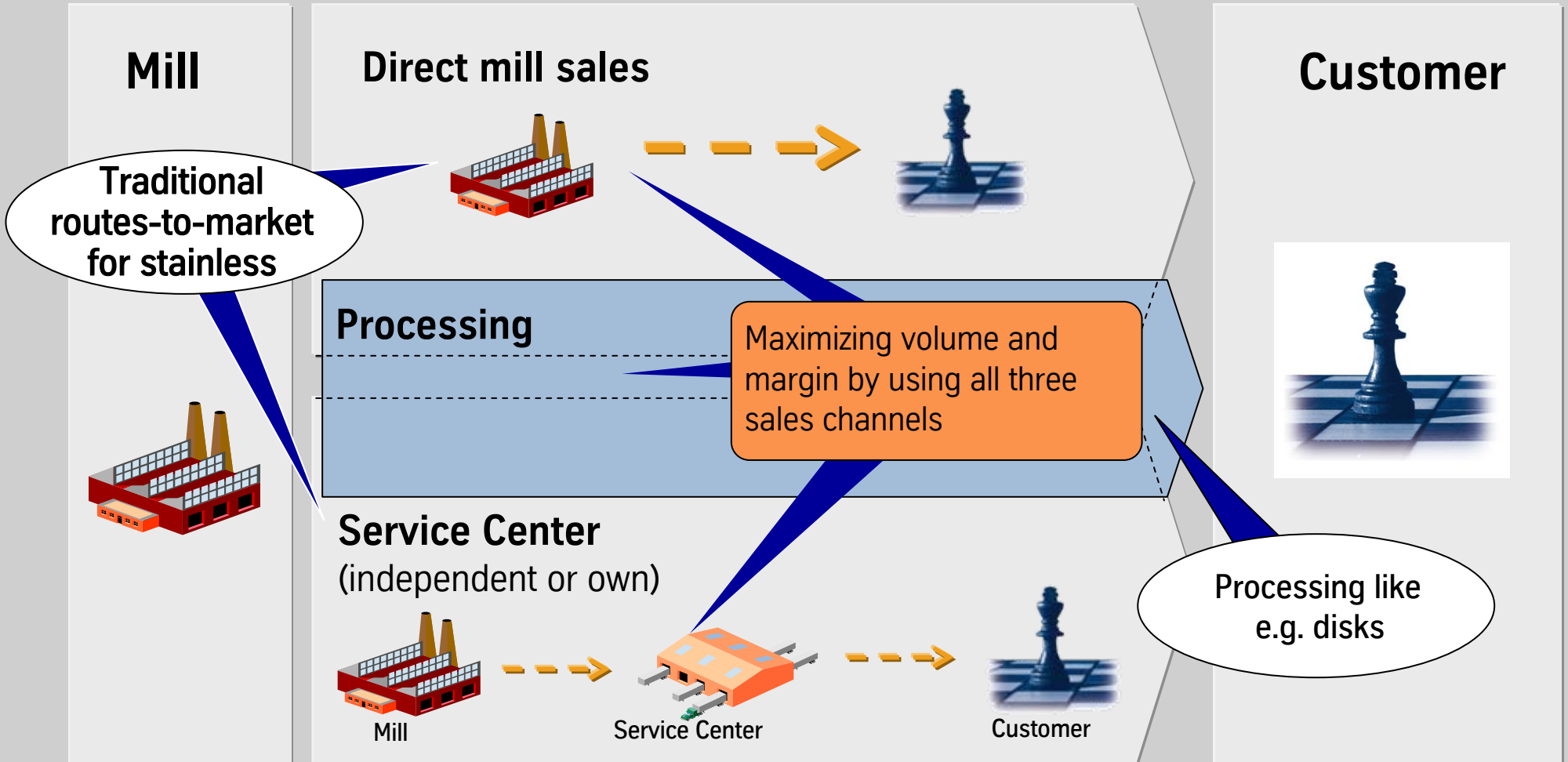
Agenda

- Stainless Steel “High Potential Material”
- Market approach “Close to the market”
- Innovation “Fit for Future”

We are in close contact with our customer sectors and ...

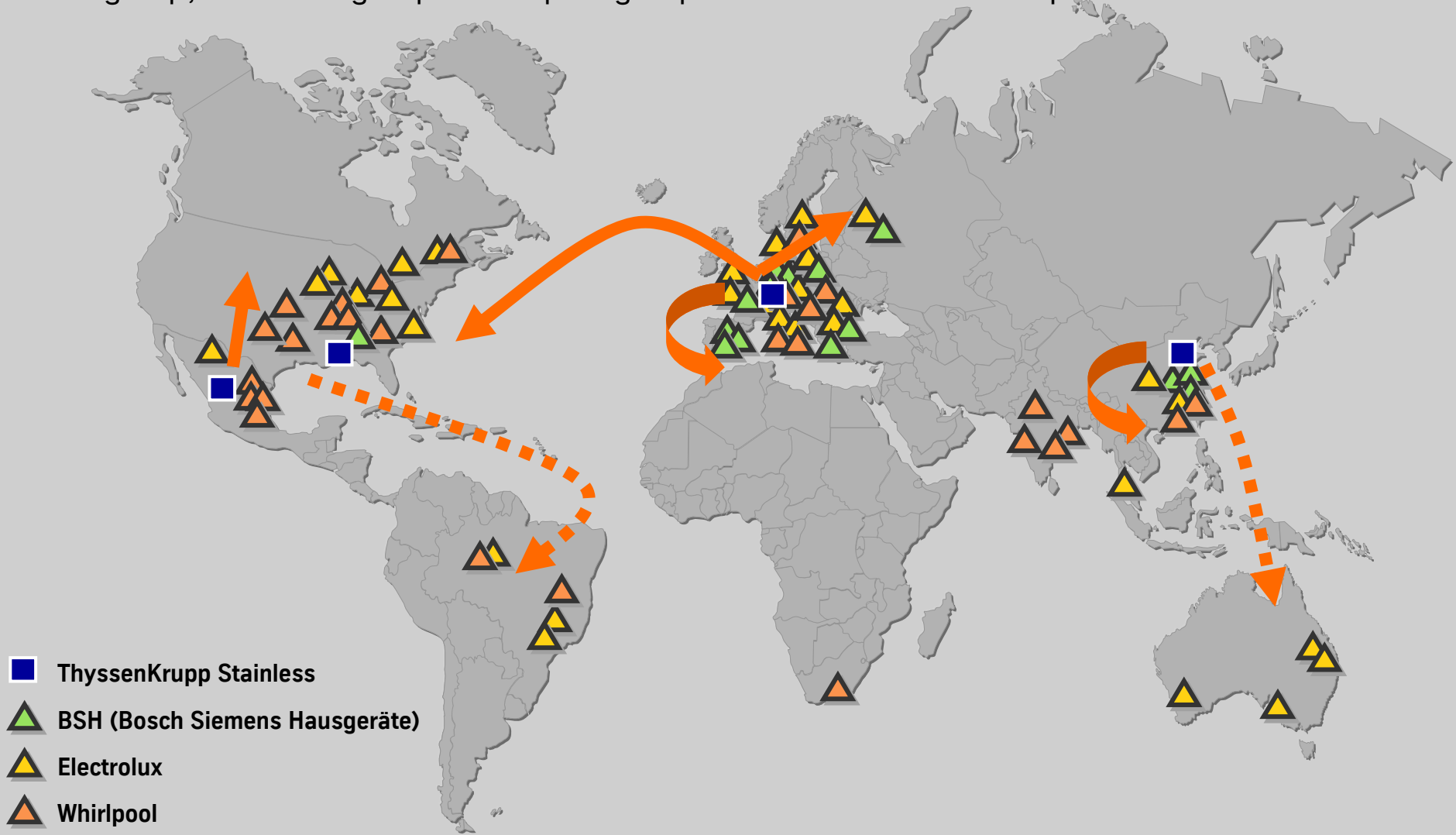


... select the optimum sales channel for each customer



Global customers supplied globally – Example: White goods

BSH group, Electrolux group & Whirlpool group: Plants with stainless requirements



In stainless cold-rolled, ThyssenKrupp Nirosta and ThyssenKrupp AST are strongly focused on end customers due to their sales channels

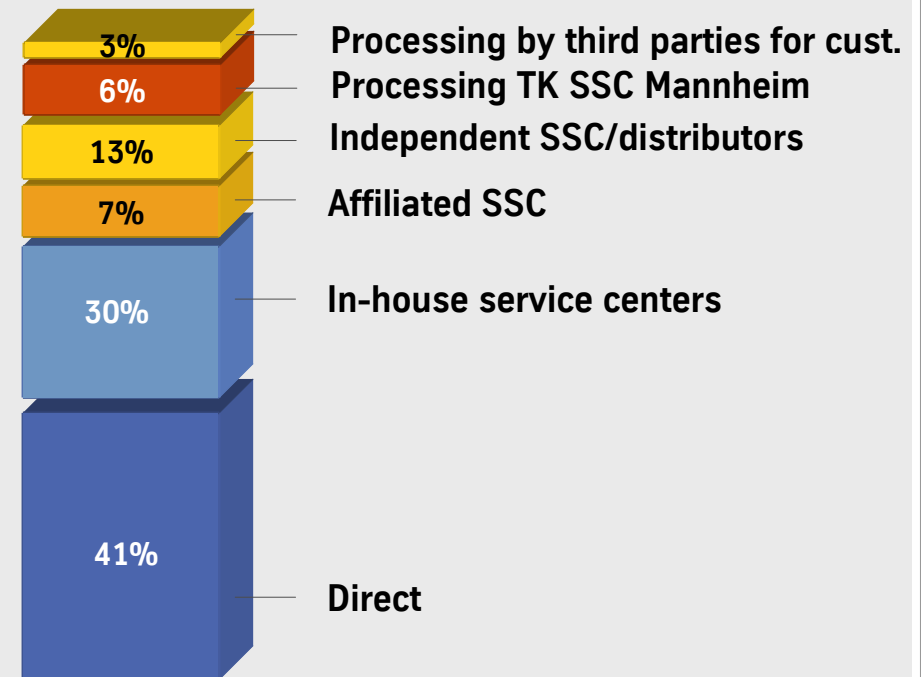
End customer focus

Advantages:

- Strong customer relations
- Higher value added
- Increased market entry barriers for competitors
- Minimum number of independent distributors in sales channel to reduce metal speculation (i.e. demand not subject to “artificial” fluctuations)
- Less severe fluctuations in market supply lead to more even workload for steel producers

Europe

FY 2006/07



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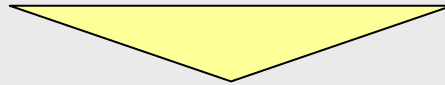
ThyssenKrupp Stainless stands for premium quality, high-tech, customized material solutions



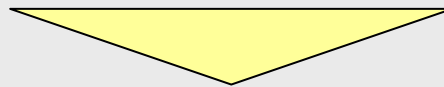
As an innovative material supplier, ThyssenKrupp Stainless is responding to the current challenges of the market

Importance of innovations at ThyssenKrupp Stainless

- Avert substitution processes, strengthen position of stainless steel
- Differentiation from competitors



- Perceived as a unique supplier by our customers
 - Unique range of services
 - Problem-solver for processing and applications
 - Potential for realizing customer retention through cooperation



- Preferred partner status in top market segments

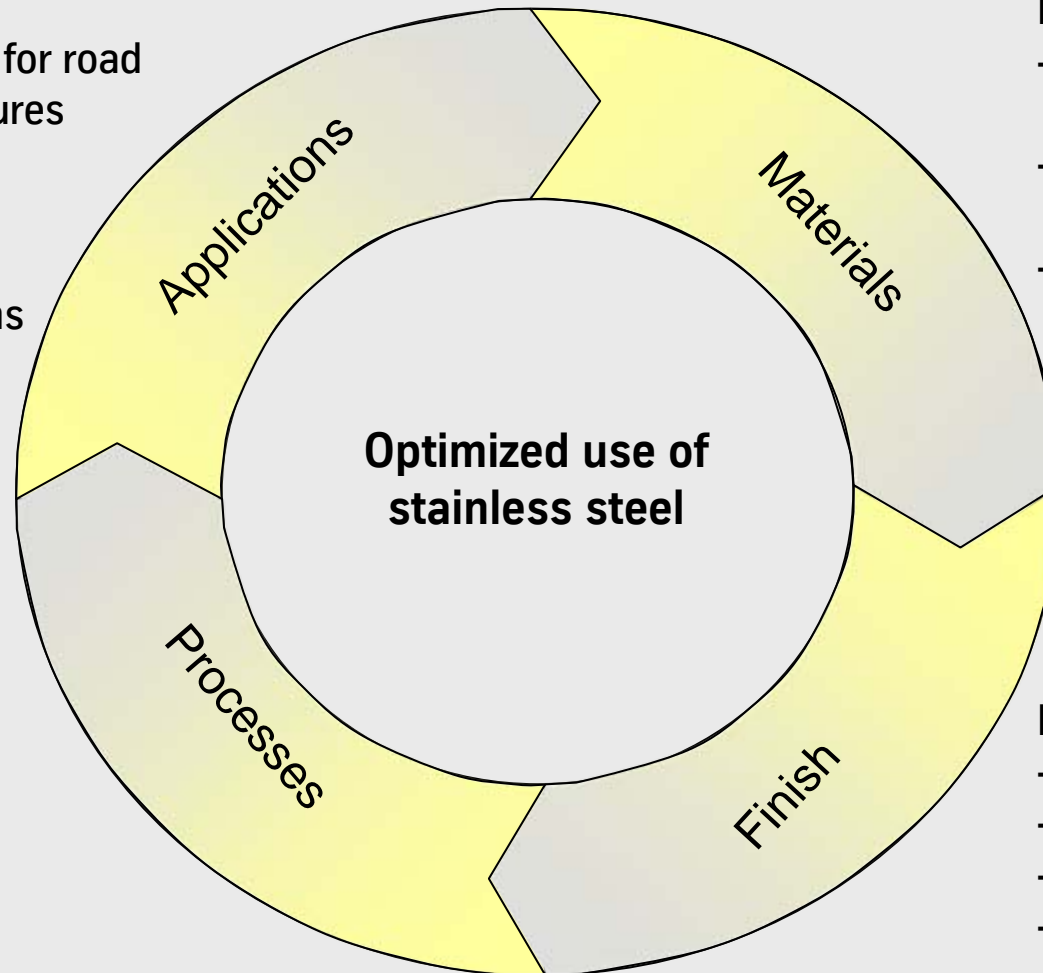
Our know-how makes us an innovative material supplier

New applications:

- Structural assemblies for road and rail vehicle structures
- Solar energy
- Exhaust systems
- Marine technology
- Drinking water systems
- Wastewater systems
- ...

New processes:

- Strip casting
- VOD
- Raw material recycling
- Energy saving
- ...



New steels:

- Ferritic materials with enhanced performance
- Resource-efficient austenitics
- ...

New finishes:

- Decorative ground finishes
- Anti-fingerprint
- Decorative coatings
- Functional coatings

Innovation example in surface technology – Anti-fingerprint

Nano ceramic coating Silver Ice®

Product

New stainless steel anti-fingerprint coating

Advantage

- Silver Ice® avoids the visibility of finger prints on stainless steel surface
- The appearance of the stainless steel surface is not affected
- Easy to clean
- Scratch and wear resistance
- Resistance to typical domestic cleaning agents
- No need to change the processing routes

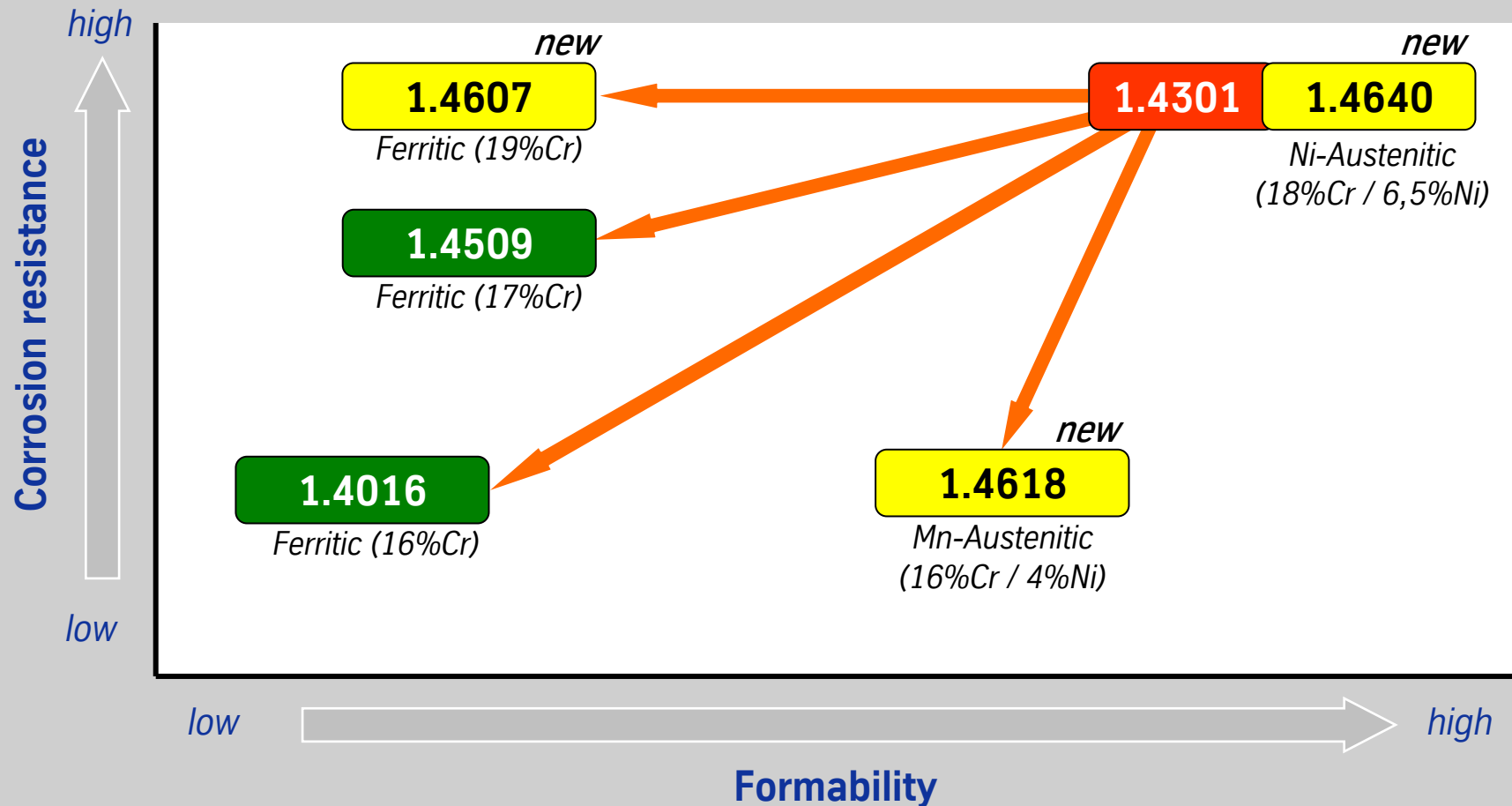


Without Silver Ice® UV



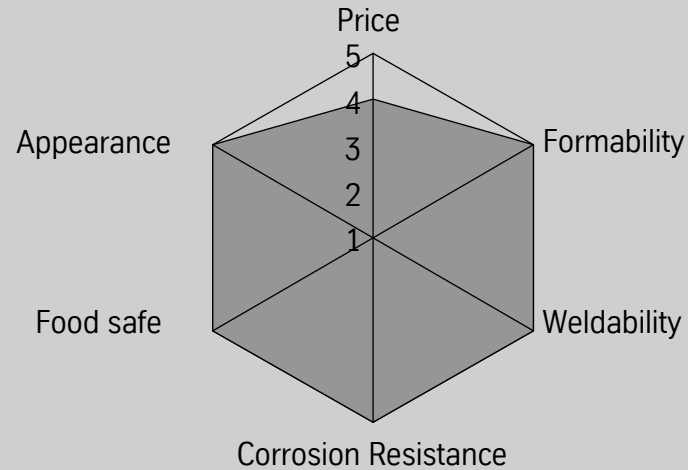
With Silver Ice® UV

Example for material innovations: The new NIROSTA® steel grades



A substitute for 1.4301: the new austenitic grade NIROSTA® 1.4640

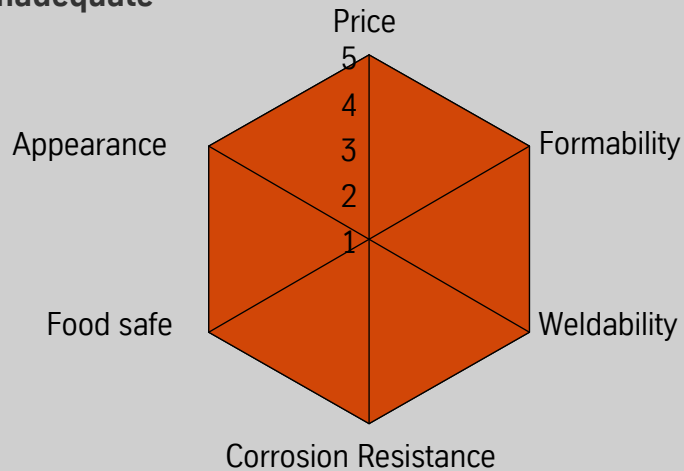
Comparable Product Properties at lower Price due to reduced Nickel Content



**Standard 4301
(AISI 304)**



**5 = very good
1 = inadequate**

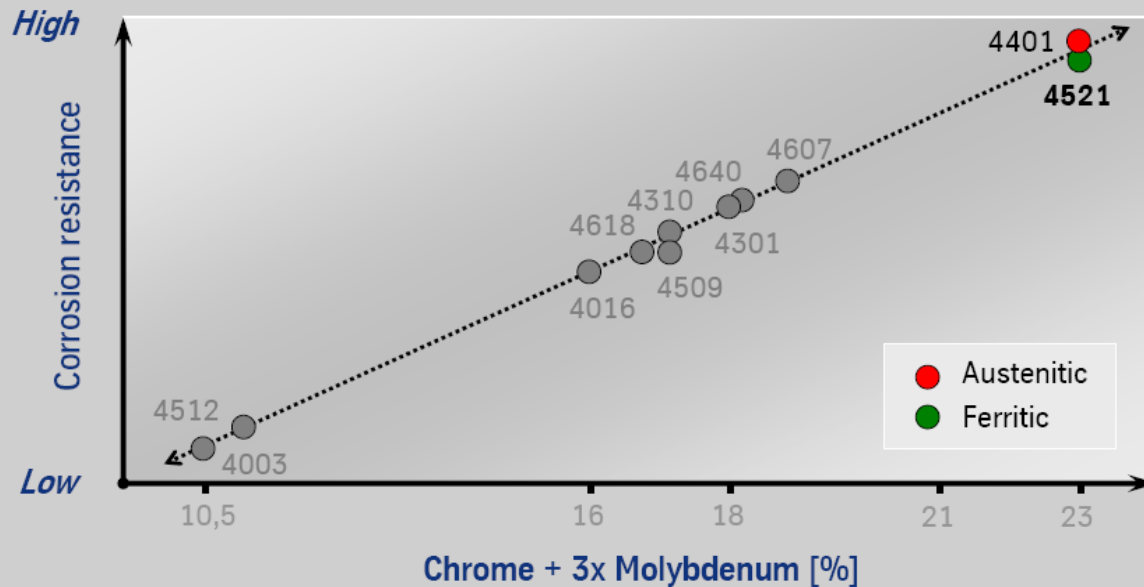


**Innovation
NIROSTA® 4640
(AISI 301 mod.)**



Alternative materials for high-corrosion applications

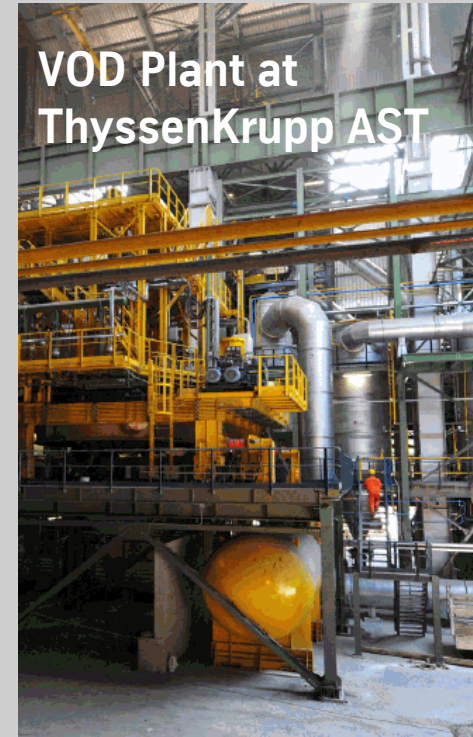
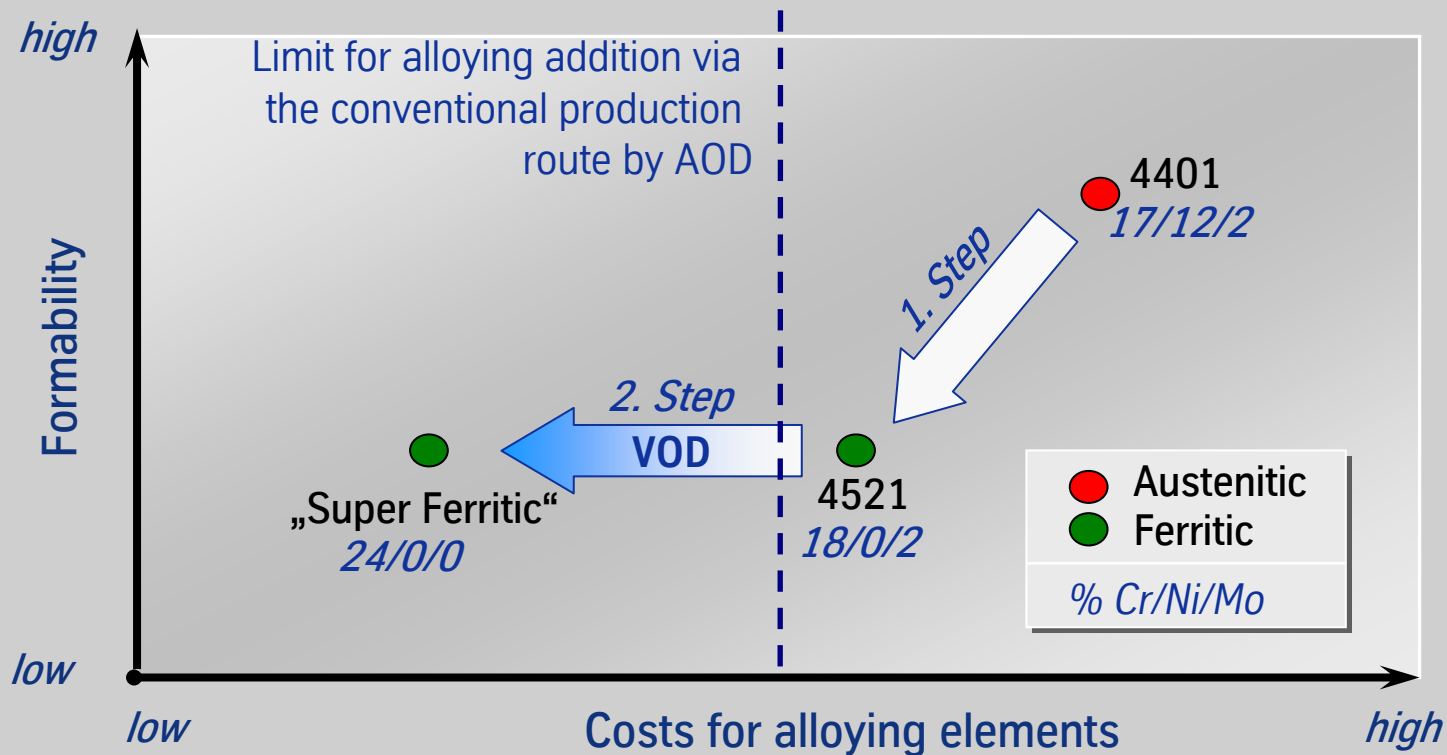
1.4521 displays corrosion resistance comparable with 1.4401



Water Pipe and Press Fitting

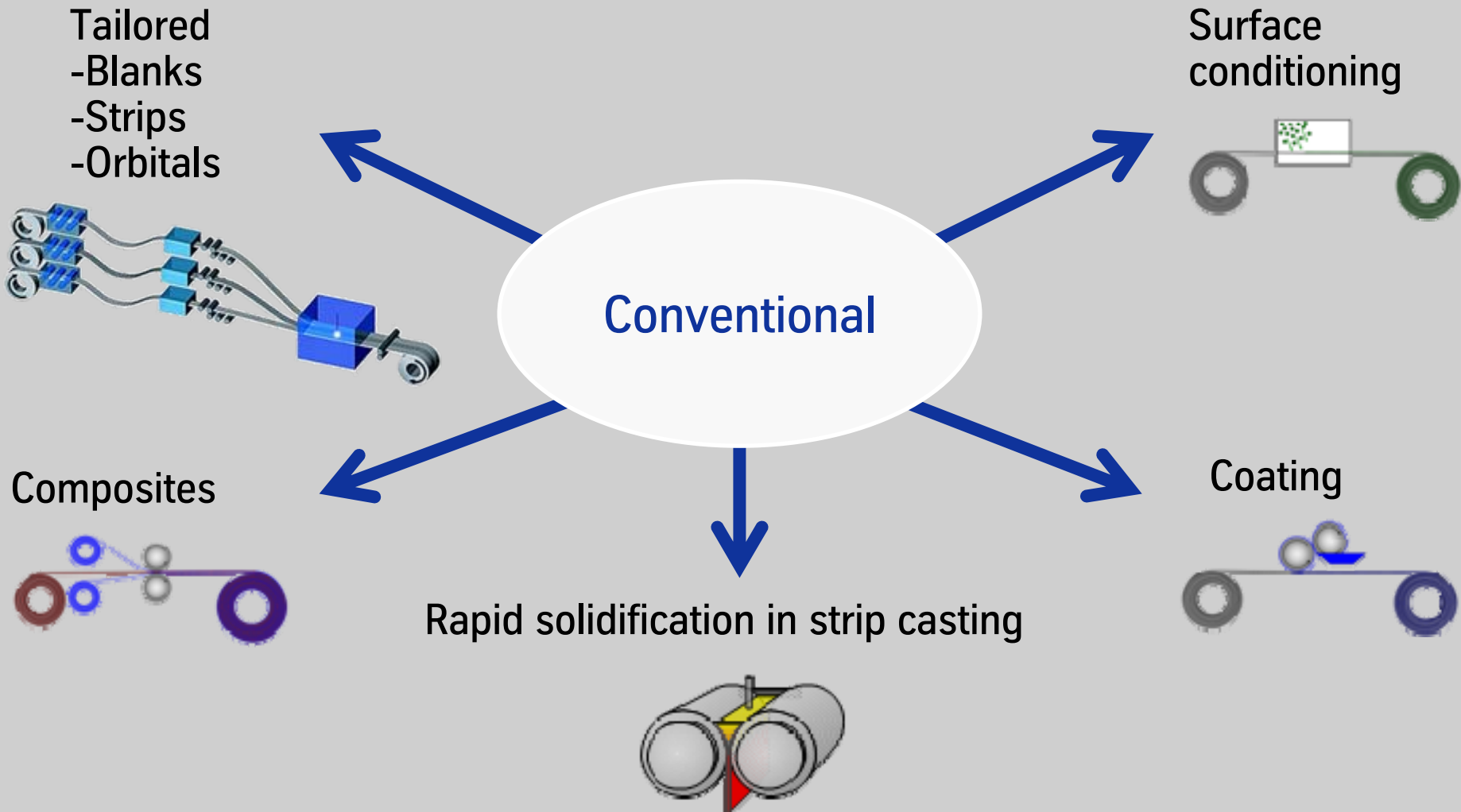
Introduction of nickel-free NIROSTA® 1.4521 in drinking water pipes is replacing previously used nickel-bearing stainless steel 1.4401

Alternative materials for high-corrosion applications

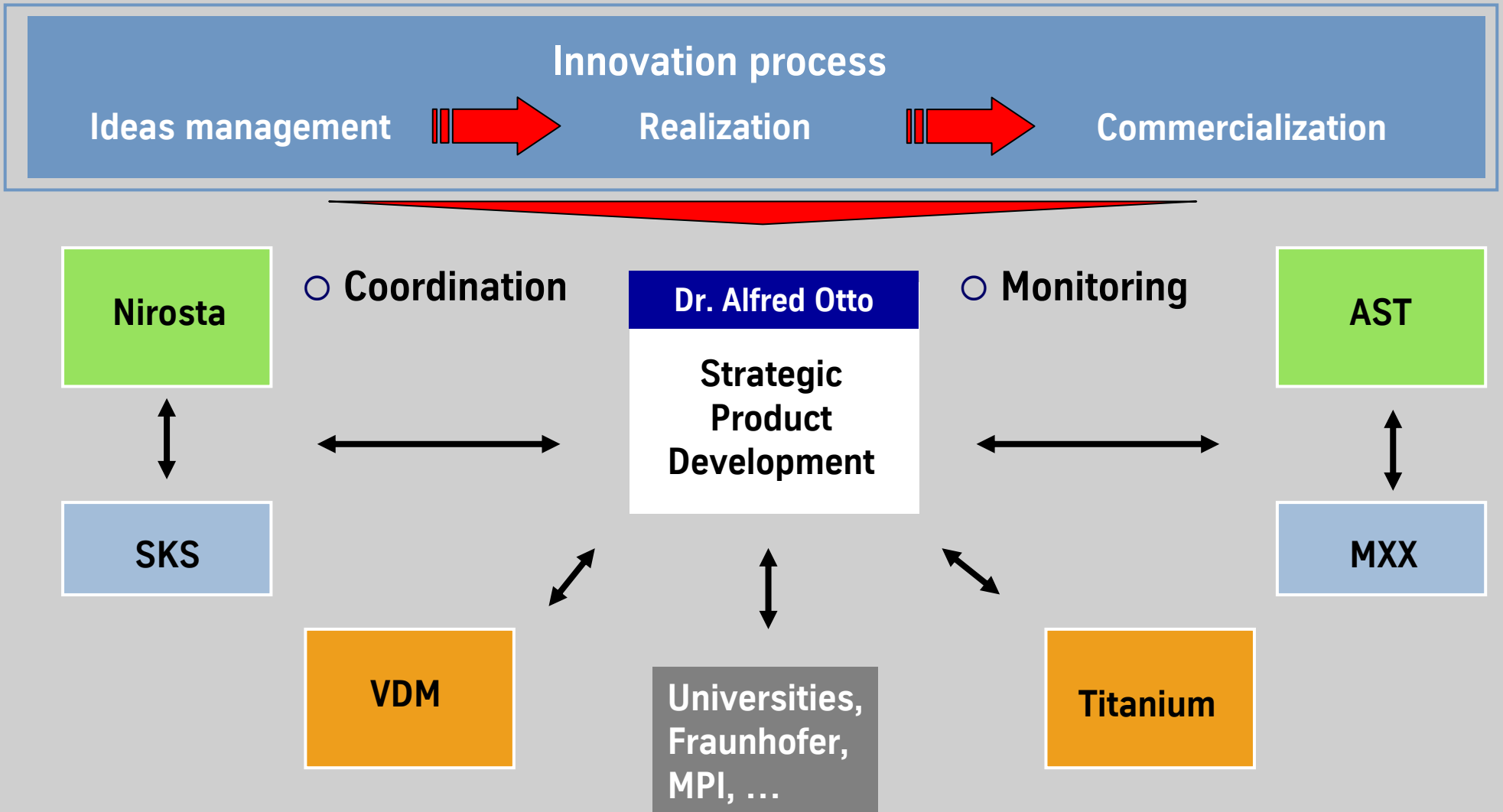


Strategy for substituting 1.4401
through alloy and process optimization (VOD)

New properties developed by crossing boundaries



.... as part of segment-wide coordination



Securing long-term profitability through innovations and closeness to customers

Averting
substitution
processes



Technology
leadership

Customer
as
partner



Focusing
on
customer sectors



Differentiation
from
competitors

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- (i) market risks: principally economic price and volume developments,
- (ii) dependence on performance of major customers and industries,
- (iii) our level of debt, management of interest rate risk and hedging against commodity price risks;
- (iv) costs associated with, and regulation relating to, our pension liabilities and healthcare measures,
- (v) environmental protection and remediation of real estate and associated with rising standards for real estate environmental protection,
- (vi) volatility of steel prices and dependence on the automotive industry,
- (vii) availability of raw materials;
- (viii) inflation, interest rate levels and fluctuations in exchange rates;
- (ix) general economic, political and business conditions and existing and future governmental regulation; and
- (x) the effects of competition.

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