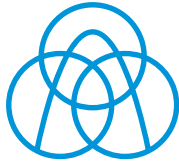




Huge Savings Potential: thyssenkrupp SE Fruther Drives Digital Transformation with Data Products

The German steel manufacturer uses One Data to build data products and gain new insights that can be used to insights that can be used to optimize the entire supply chain in the future.





thyssenkrupp

26.000 Employees
9 Millionen Tons of Steel
10.000 different Sorts of Steel
35 ERP-Systems
Billions of Data

„Digitalization is a central component of value creation. We wanted to put the entire production process on a completely new data-based footing. To do this, we first had to make the data consumable as products for the company – with the help of One Data.

Dieter Grossmann | Head of Enterprise Platforms & Data Intelligence, thyssenkrupp Steel Europe

thyssenkrupp Steel Europe is one of the leading manufacturers of carbon steel flat products and stands for innovation in steel and high-quality products for the most demanding applications.

As well as producing innovative steel products, this diversified, highly specialised company manages billions of pieces of data:

From customer quotations and orders to steel production, raw material sourcing, quality assurance, warehousing and global transport logistics for more than 10,000 different types of steel. Keeping track of this amount of data, finding and managing it, and ensuring quality at the same time, is a major challenge – but one that can be met with the help of intelligent AI algorithms.

Freeing billions of data from their transactional prisons

thyssenkrupp SE was quick to recognize the enormous potential of data as a valuable source of information: Digital transformation is already in full swing to exploit new opportunities and make data-driven decisions. At the forefront, for example, are efforts to improve delivery performance and optimize inventories.

The challenge was clear from the outset: The company's complex and difficult-to-manage data landscape is spread across 35 ERP systems and must first be made usable and monetizable. Data is often stored in silos. Real value is only created when the data is connected. One Data provides the basis for this.

Supply chain data can be transferred to One Data and visualized on an interactive map. The overall goal of thyssenkrupp SE in using data products was to digitize the entire supply chain in order to plan the entire planning process - from production to shipping – on the basis of data.

But this had to start at a specific point. The first data products were therefore built in two areas: Net Working Capital Optimization and Bottleneck Management.

Optimizing Net Working Capital

As a manufacturing company, thyssenkrupp SE has a high proportion of tied-up capital that is difficult to optimize using conventional methods: billions of euros worth of raw materials and steel products are stored to secure the entire supply chain. Data-driven optimization is needed to unlock this untapped potential. One Data acts as a central layer for data preparation and enrichment and delivers quality-assured data products.

Based on the data products created with One Data for Networking Capital Management, thyssenkrupp SE has built several NWC dashboards that can be used to reduce tied-up capital and free up cash. In an entry-level cockpit, balance sheet KPIs relating to sales, purchasing and inventory (DSO, DPO and DIO) are displayed uniformly across the group and calculated on the basis of open balance sheet items at the reporting date. In addition, One Data has been used to create an operational control cockpit that measures customer and supplier performance at the document level (from a purchasing and sales perspective) to optimize order-to-cash and purchase-to-pay processes.

Based on this, various analyses for the sustainable optimization of the NWC can be created in the future, for example:

- Discount analysis for optimal utilization of payment terms
- Payment terms analysis for standardization across different customers/suppliers or to avoid unwanted conditions
- Maturity preview to identify short-term maturities in advance
- Due date review to keep track of unpaid invoices
- Measure tracking tool enables management and collaboration between purchasing, sales and controlling (management of P2P KPIs, e.g. adjustment of payment terms)

This provides thyssenkrupp SE with data-based, reliable information that will form the basis for preparing customer and supplier meetings and contract negotiations in the future.

thyssenkrupp can also make adjustments in the tool, track progress and evaluate the direct cash effect. thyssenkrupp thus gains transparency about all tied-up capital, a holistic management cockpit for KPIs and free cash flow, which opens up completely new savings potential.

NWC

We are also working on a way to calculate the capital tied up in each individual material along the entire production chain - from unprocessed raw materials to the finished product - in order to draw conclusions about how long it takes at specific points from production to shipping.

This opens up enormous opportunities for optimizing the NWC.

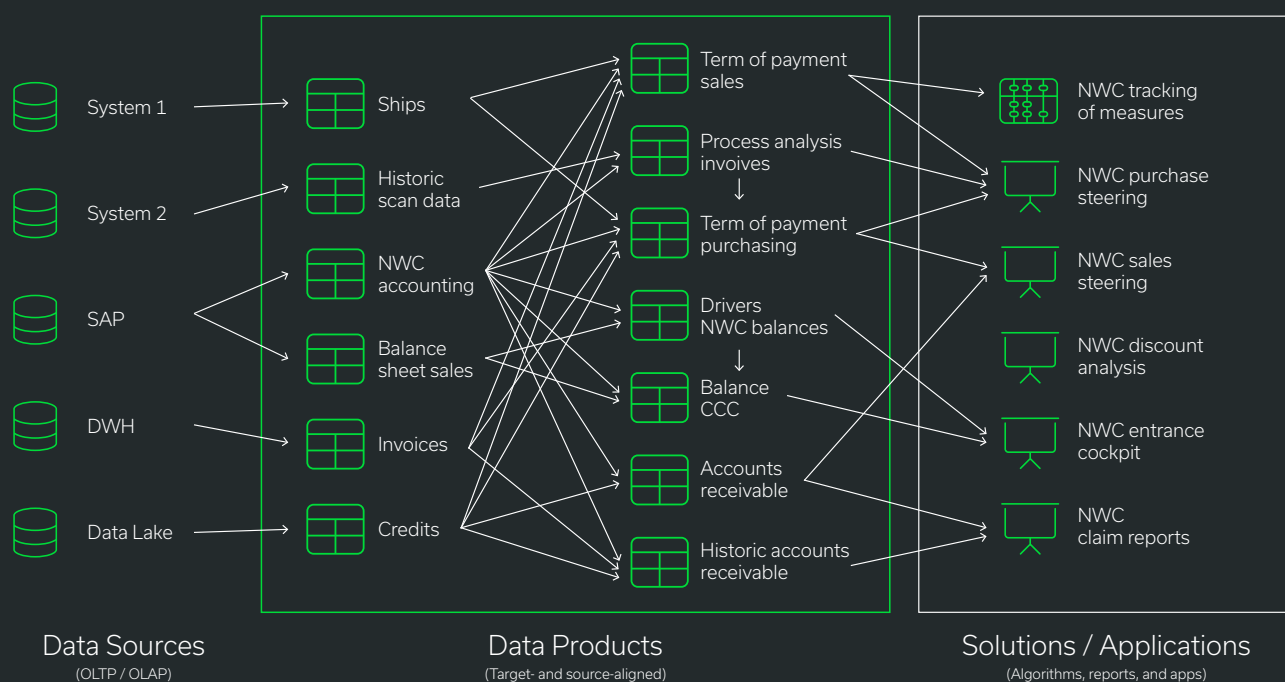
How are the data products built?

First, data from heterogeneous source systems (e.g. SAP data or data lakes) is connected. The data tables are prepared, linked and made available as data products with One Data, which can then be used for various solutions and applications and reused for different use cases.

The creation of data products is simplified and accelerated by many automation options in One Data (e.g. for cleansing, preparation and quality assurance).

Once created, data products can be reused for new data products or use cases, which increases the business value. thyssenkrupp Steel Europe can quickly create easy-to-use and reusable data products that can be used in different domains such as net working capital optimization or bottleneck management.

Building data products at thyssenkrupp SE



Proactive bottleneck management instead of firefighting

With such a complex supply chain, spanning multiple international locations, production facilities and warehouses, even the smallest delay can result in huge costs. In the automotive industry alone, more than 15,000 production orders for around 4,000 items have to be reliably forecast in over 100 production facilities.

Not only can production be late, it can also be early – these variations have a huge impact on production planning. In the past, forecasts were sometimes so inaccurate that production facilities had to be shut down due to full warehouses. In the worst case, such a backlog can lead to a major shutdown. When last-minute deliveries become necessary, for example, several tonnes of steel may have to be shipped internationally by air freight: thyssenkrupp SE then pays several hundred euros per kilogram for such a delivery.

The company therefore wanted to move away from ‚fire-fighting‘, i.e. bailing out late orders at short notice, and set itself the goal of developing a proactive bottleneck management system, working with One Data to create a data product in which an algorithm checks all production schedules and orders on a weekly basis.

The software not only identifies delays in production, but also directly suggests which orders can be de-prioritised and postponed without serious consequences in order to ensure on-time delivery. The whole process is also visualised in a cockpit for ease of use.

The use of such data products is intended to optimize the entire production planning process for the automotive industry, which has become extremely unstable due to the supply chain crisis, chip shortages, and the like.

This will result in:



Increased profitability



Timely delivery



Increased customer satisfaction



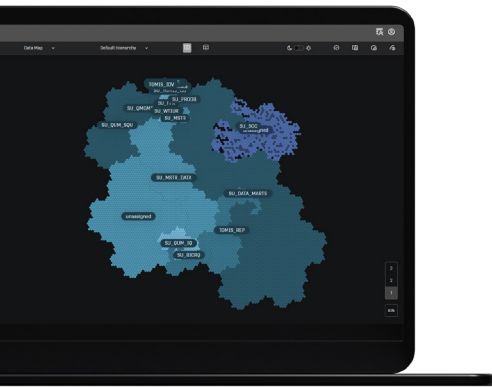
Reduced delivery costs



Increased reach performance



Reduced escalation volume



Smart Holistic Twin to digitally map the entire supply chain

Dieter Grossmann, Head of Enterprise Platforms & Data Intelligence, is responsible for one of the new large-scale data projects at thyssenkrupp SE:

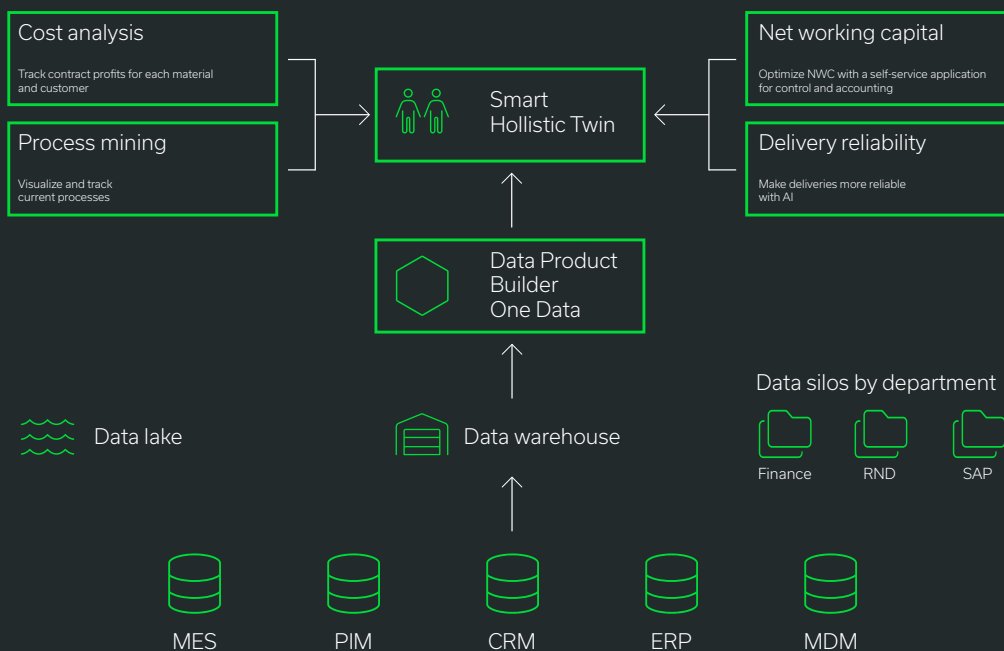
„We don't just want to manage data, we want to free it from its transactional prisons – our fragmented, specialized data landscapes – where it serves its purpose as partial information for certain processes. We envision a new, overarching layer of data that we can address and evaluate as a whole.

Together with One Data, we are working on data products for order date forecasting and production simulation – typical applications of a digital twin. However, thyssenkrupp SE wants to go one step further and describes the goal as a „smart holistic twin“, since the aim here is to create an AI-enhanced holistic twin as opposed to „digital product twins“. One Data's data products support the creation of such a twin.

For the first time, the originally heterogeneous data from different sources and systems will work as if it came from a coherent, interconnected and linked system.

Dieter Grossmann: „We will be able to accurately and promptly map the current status of the most important systems and processes in our entire value chain in Smart Holistic Twins and provide these images centrally and in high data quality. The Smart Holistic Twins are also the basis for further data analytics use cases and business cases and the basis for training further AI models.“

The data landscape at thyssenkrupp Steel Europe



Data valued throughout the company as a source of information

Arrange a reference meeting with
with the end customer and find out more!

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In addition to the technical change, the company also needed to drive cultural change. From the outset, it was important for everyone to see data as a valuable source of information from which new knowledge can be generated.

After all, the best technology is useless if users do not see its value and do not use it. These first two data products are just examples of how thyssenkrupp SE is making data consumable and using it efficiently to create value.

But the steelmaker's digital transformation is not stopping there: a central marketplace for data products, which will also make external data usable, is planned for the near future. In addition, the cockpit for production planning is to be expanded to allow conclusions to be drawn as to why orders are being delayed.

"Many thanks to the One Data team. You helped us to gain important insights and showed us what we can do with them. One Data's pragmatic, fast and value-driven approach has convinced us to continue driving digitalization at thyssenkrupp SE together"

— Dieter Grossmann, Head of Enterprise Platforms & Data Intelligence
(thyssenkrupp SE)



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**Interested in One Data? Get in touch. We'll advise you
in all aspects, on what you need for implementation,
and the unique potential of your company.**

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