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DIGITIZING LOGISTICS ACROSS THE MINING SUPPLY CHAIN.

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CONTENT

1. PROBLEMS IN THE MINING PROCESS.

When you measure output in millions of tons, it can be hard to keep track of materials as they pass through the supply chain from extraction to sorting and beyond. Moving large amounts from point a to point b—truck to train to ship—is complex.

Controlling costs is your main goal. That covers everything from reducing waste to keeping workers safe. But it's hard to control costs when you don't have full visibility into the mining supply chain.

For many mining companies, there's a blind spot between extraction and shipment. This lack of visibility can affect many aspects of the mine:

FINANCIAL:

It's hard to track KPIs—life of mine, how much ore is still in the ground, how much is in transit, where is it, how much is it worth—when you don't have real-time information. Lost product equals lost profits and staying on top of every ounce of product requires planning and synchronization.

SAFETY:

On-the-job accidents cause injury, but they also cost money. In fact, a 2007 study found that for every dollar spent on direct costs of injuries—medical expenses, worker's compensation, etc.—you spend 2.12 dollars on indirect costs. Overtime to cover for injured workers, additional administrative time to process injury claims, training time for new workers: these all affect your bottom line. Keeping workers safe and healthy saves significant costs in the long run.

STORAGE/WAREHOUSE SPACE:

Where do you store millions of tons of something? The answer in most cases is: you can't. So, you must keep materials in transit, moving through the supply chain. And in order to keep the supply chain moving, you need to be in control of where everything is—and where it's going.
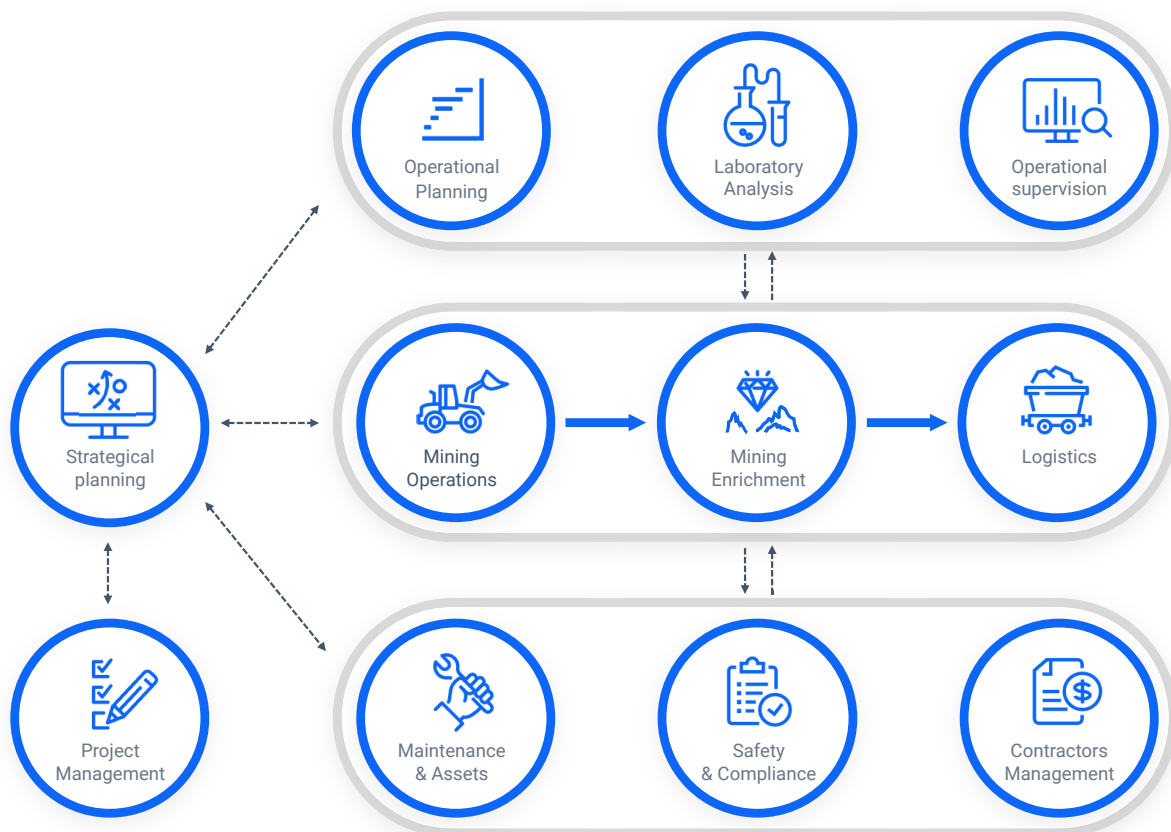
SUSTAINABILITY:

Traceability—the identifying and tracking of a product or component's path from raw material to finished good—is an increasingly important part of sustainability. "In the context of sustainability," states a UN report, "traceability is a tool to assure and verify sustainability claims associated with commodities and products, ensuring good practice and respect for people and the environment all along the supply chain."

Managing a mine is a delicate and complicated balance: things are constantly moving from one place to another. Good planning will save you money in a variety of ways. But in order to plan better, you need better, more timely data.
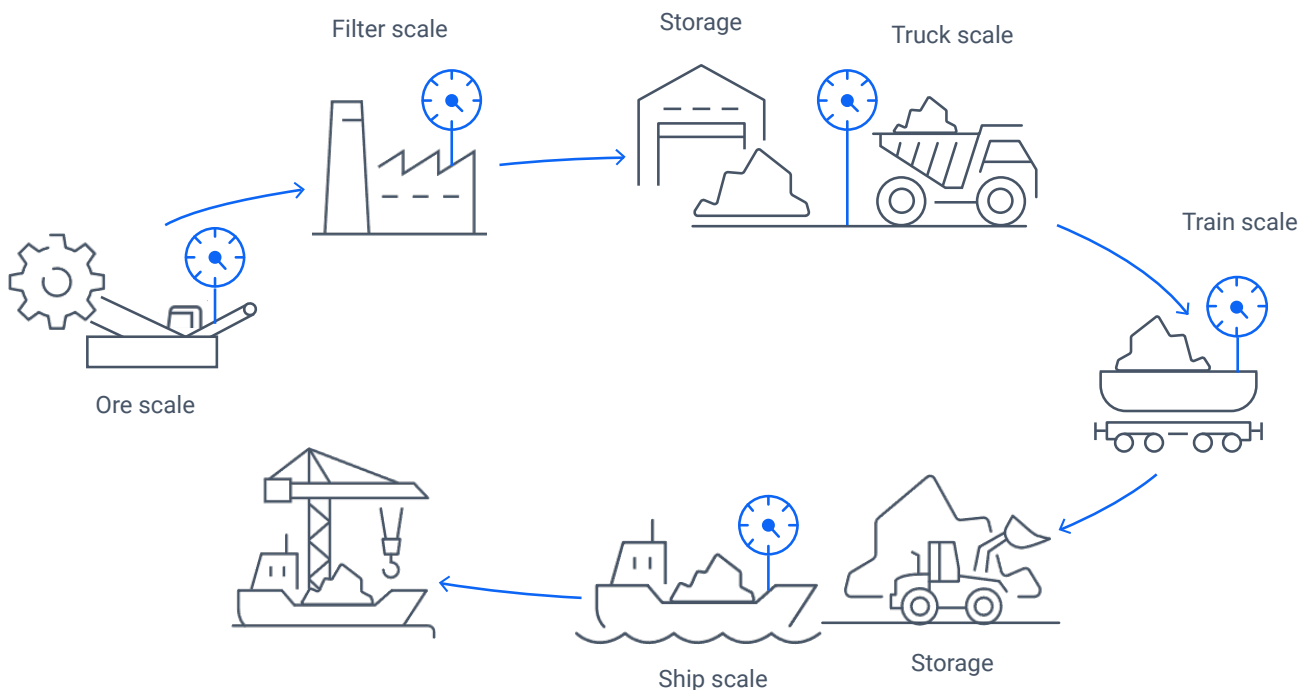
1.1 IRON ORE MINING PROCESS OVERVIEW.

The mining process is complex with many interactions between departments, process areas and system solutions.

Novacura Flow can support and improve theprocess in every step along the value chain for mining operation.

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2. SOLUTION: LOGISTICS TRACK & TRACE.

Filter scale · Storage · Truck scale · Train scale · Ore scale · Ship scale · Storage

Our Logistics Track and Trace solution allows you to effectively manage resources throughout thesupply chain journey from start to finish, with limited downtime for implementation. This solution can significantly improve the value chain without disrupting your current mining processes.

One of the problems with many digitization efforts is that the data isn't put to use in the most effective way. As noted in a recent study by Ernst & Young, "While application of technology has become business as usual, is anyone really doing it well? It's more an opportunity than a risk now, and the one issue miners are challenged with is how to better manage data to extract value from it." By pairing new technology with data you're already collecting, you can get more value out of your data and keep track of materials through the entire logistical chain, to the point of delivery and beyond.

This is a solution we've deployed at a variety of mine sites in Europe and North America with excellent results.

3. ELEMENTS OF THE LOGISTICS TRACK & TRACE SOLUTION?

RFID-ENABLED MOBILE APP

The mobile app connects to the mine's various business systems, allowing workers to record and transmit data back to the systems in real time. For example, with a simple mobile app, workers can:

- see open orders
- check in a truck
- track what's loaded into the truck
- print out a bill of weighting
- transmit all data back to the ERP system in real-time

Equipping transport vehicles with RFID tags allows you to track vehicle locations in real-time. Geofencing—a virtual perimeter for a real-world geographic area—alerts both the vehicle and the back office if a vehicle deviates from their designated route. This quick response cuts down on errors and accidents on-site by alerting the driver of other vehicles, missed turns, etc.

The mobile app is fully customizable using Novacura's low-code platform. You control the workflows and can make changes to the app at any time.

4. LOGISTICS TRACK AND TRACE PORTAL.

The portal, a Kanban board, allows you to visually track and analyze logistics processes as they're in progress. The portal can display a variety of information related to your logistics processes, including:

- material quantity on hand at each location
- material quantity in transit
- number of vehicles in transit

The portal can connect data from various systems - scales, loaders, RFID chips in trucks, assessments at loading check-points, and so on—to give you a holistic view of everything related to mining logistics.

5. BENEFITS OF THIS SOLUTION.

The Logistics Track and Trace solution will save you time and money across a variety of departments including operations, shipping and logistics. In operations, we've seen results of 10+ hours saved per week. The solution can be quickly deployed, with minimal downtime and a quick return on investment.

5.1 FOR IT AND OPERATIONS.

- workflows managed in a low-code environment
- easy to make changes and adjustments to workflows at any time
- real-time overview of all materials presented in a user-friendly, readable format
- easier to identify and fix bottlenecks
- save significant administration time: our current customers estimate that they save at least 8 hours per week

5.2 FOR EQUIPMENT OPERATORS.

- automatic data collection and transmission: no retraining required
- improved safety and security: the mobile app tells the driver where to go, when to be there, and alerts them to any issues
- vehicles can be checked in, tracked, and issued a bill of weighing… all within the app
- user friendly: operators only see the data they need, and only act on the flows they need to act on

5.3 FOR THE C-SUITE.

- improved planning and forecast accuracy
- holistic, real-time overview of operational data
- can see the value of the mine in real-time
- improve productivity and maximize profits

This solution incorporates new, disruptive technologies, but deploys them in a very sustainable manner. It doesn't require an overhaul of your current systems or processes: instead, it adds a new level of value to the logistics data and processes you already have. This new value can help you plan better routes, manage risks, and ultimately cut costs and maximize profits.

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TALK
TO OUR
EXPERTS.

Would you like to see the Logistics Track and Trace solution in action? Contact one of our mining experts to learn more.

Östen Westman
Europe, Asia,
Africa, Australia

GET IN TOUCH

Paul Phillips
North America,
South America

GET IN TOUCH

LOGISTICS & DISTRIBUTION

OIL & GAS

CONSTRUCTION & ENGINEERING

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ENERGY

MINING

SERVICE & MAINTENANCE

DEFENSE

ABOUT NOVACURA

www.novacura.com

Novacura is a human-centric IT-company using services and software to streamline and simplify our customers' business-critical processes and ERP platforms.

Novacura Flow, our signature software, is a low-code platform that helps businesses optimize their mining processes using custom mobile applications. Flow works as a layer on top of your existing business systems, helping you connect data from multiple sources into easy-to-follow workflows and apps.

The Novacura Flow low-code platform helps mining companies lower operating costs, improve facility uptime and drive up profits by putting the control of all your processes at your fingertips. It's fast, collaborative and flexible: all the things you want your mining operation to be.

To read more about what we do for Mining companies go to novacura.com/by-industry/mining

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THANK YOU.