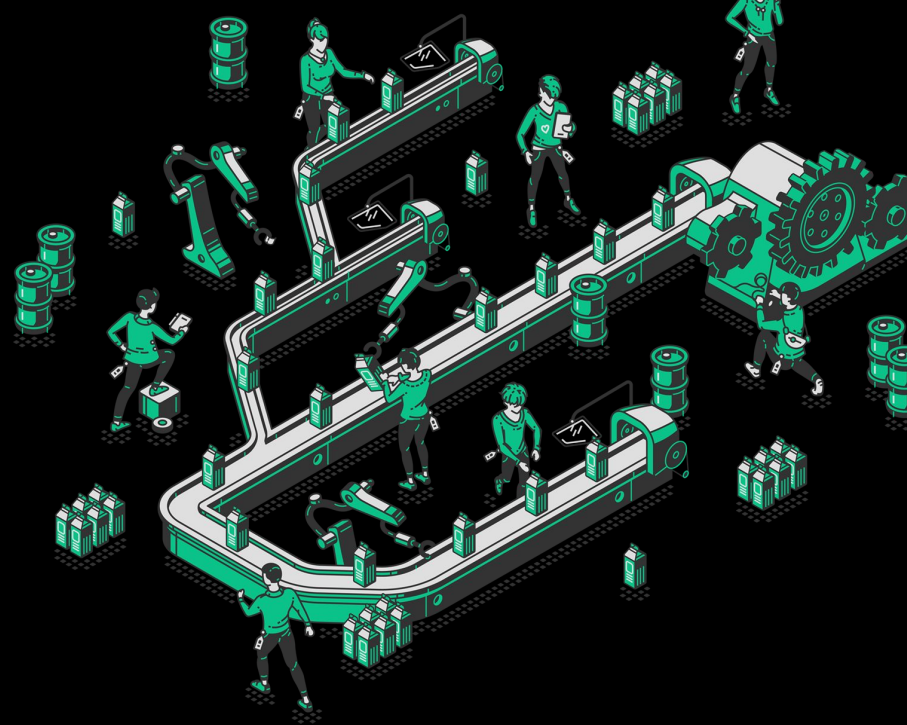


Meet the first **Production Copilot®**



Client Story

**Quindi for Bike Manufacturing**

# Bike Manufacturing Excellence

YEAR

2023

CLIENT

Italian Market Leader

INDUSTRY

Bike Manufacturing

PRODUCTION LAYOUT

Assembly Line

TAGS

SENSE

CONTROL

PLAN

RFID





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EXECUTE

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## The Challenge

Within the Client reshoring initiative, support the opening of their brand new plant by supplying the digital production architecture.

Achieve a production standard of 200 bikes/day.

## Quindi Solved

### #SENSE

Full workstation integration, read-write integration with ERP & WMS to monitor all assets & flows.

### #CONTROL

Automatic bike advancement tracking with RFID technology; material delivery tracking through the plant.

### #PLAN

Orders' scheduling & balancing over production lines.

## With Tangible Results

### ON THEIR ECONOMICS

- Goal of 200 bikes/day achieved and sustained
- Lead time has been reduced by 28.2%
- COGS has been reduced by 19.5%.

### ON THEIR PEOPLE

- Operators don't need to input data and focus just on production
- Operators get guidance on task completion. Fresh workforce can be welcomed smoothly.
- Management & production supervisors now take better data-driven decisions.



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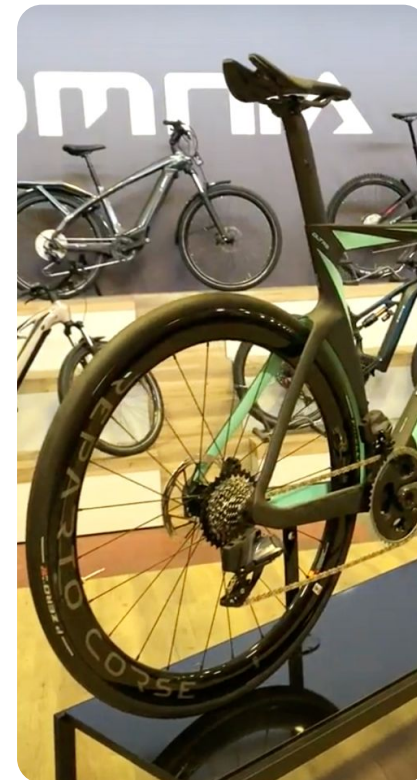
Achieving the right digital architecture for the new plant was a true concern. Quindi played a fundamental 'data-hub' role: without it, we wouldn't be able to schedule orders as efficiently, detect issues this timely, nor onboard new people this easy. And everything flows together, just as we envisioned it.

Firm's COO

”

## The Client

- Historical and leading bike manufacturer, with over **130 years of heritage** and **multinational presence**, both in daily-use and performance bicycles.
- The Client has embarked on a multi-million **reshoring project** towards its headquarters in Northern Italy.
- Quindi has helped the Client open a **brand new plant**, part of the Italian expansion, by becoming the **digital backbone** of production operations.
- With this setup, the Client has set the manufacturing goal of **200 bikes per day**, while dealing with a growing product mix, decreasing lot size due to demand for customization, and 'just recruited' workforce.

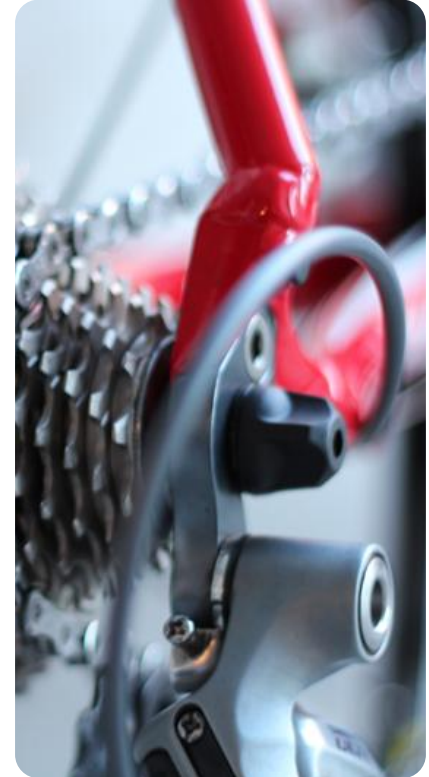


## The challenge Quindi solved with tangible results

### **Produce 200 bikes per day.**

Hence, handle production & workforce planning and execution to achieve this.

- The Management communicated us their necessity to create a digital architecture for the new production plant, with a well-defined production goal in mind.
- They had clearly envisioned their target production processes, with an understanding of requirements and expected features, but had no clue on how to achieve nor to sustain them.
- They needed a solution that could interlink multiple sources of information — such as the ERP, the automated assembly lines, the BIs and WMS. Quindi checked all the boxes for them.



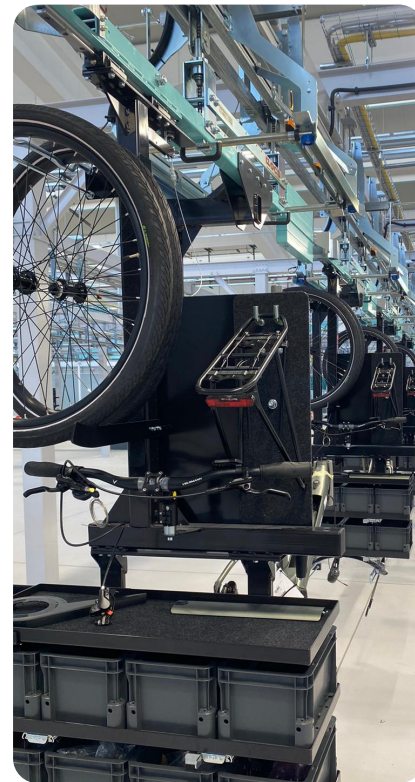
## The challenge Quindi solved with tangible results

SENSE

RFID

### We integrated the automated assembly system to sense the whole process

- We exploited RFID technology to monitor the bike assembly process, from kitting to packing
- Thanks to such integration, we automatically identify and timestamp when a single bike enters into and exits from a given workstation
- Also, Quindi integrates seamlessly with the plant ERP, and all info about orders & people is read from and registered automatically into it.
- In real time, we sync with the WMS to monitor material delivery to the kitting area and check that the proper material gets delivered, in accordance with scheduled tasks.





## The challenge Quindi solved with tangible results

### CONTROL

#### We keep track of every frame, wheel, handlebar. In real time.

- At the first station, each bike frame is automatically paired with a production order, creating a unique production unit.
- In real time, we check that all the necessary parts are delivered to the right workstations, so that the Client avoids starting an order without the whole kit ready.
- When a bike physically enters a given workstation in the line, Quindi automatically opens a working partial, and it closes it when it exits the station. So that production advancement is tracked with no need for human input whatsoever.

### PLAN

#### We schedule all production orders, balancing assembly lines and workforce.

- For each bike, based on the production scheduling, we establish the optimal route to follow inside the production plant, in order to minimize the overall assembly time.





## The challenge Quindi solved with tangible results

### EXECUTE

#### Quindi assists the operators at the workstation, to complete their tasks

- Every time a bike enters a workstation, Quindi's UI gets automatically populated with bike-, task- and operator-specific information, such as:
  - ◆ the current task list;
  - ◆ assembly video tutorials for that bike;
  - ◆ assembly info & documentation for that bike.
- The live working time and the expected production time are shown on screen, providing the proper takt time guidance to the operator.
- Quindi automatically detects issues, and allows the operator both to declare the cause behind each one of them for tracking and improvement, and to request for assistance on their resolution on the spot.



## The challenge Quindi solved with tangible results

### On their economics

The impact of Quindi on the Client economic performance has been measured at periodic intervals before and after the rollout.

Quindi allowed the client to:

- Schedule production orders and balance the lines optimally, with respect to the articles to produce and the historical efficiency of operators.
- Detect defects of a bike right at the workstation, and driving it to the rework area with the useful information to solve them.

Therefore, Quindi granted results above expectations:

- Productivity goal of 200 bikes: **reached!**
- Lead time reduction<sup>1</sup>: **28.2%**
- COGS reduction<sup>1</sup>: **19.5%**

### On their people

Alongside economics, Quindi impacted positively on supervisors and operators:

- Minimum human data input, so that operators just focus on core production tasks.
- Operators can benefit from digital materials that help them improve their performance and quality, while lowering uncertainty and stress — this way, fresh workforce can be welcomed smoothly, with minimum impact on production performance.
- Management & production supervisors now benefit from greater, accurate & ready-to-use support when taking decisions.

1. Measured against the tech scenario in place at the Client's older plants.

## Quindi comes with the flexibility of SaaS

starting at

**€49**  
**node/month**

### SaaS (Software-as-a-Service):

- You pay what you get: valuable features!  
Node & software integrations are on us.
- Always get the most updated version of Quindi, with automatic updates for every major and minor release.
- Price varies depending on the number of active modules.
- Minimum license duration: 1 year

### Transparent, easy pricing

- No training costs
- No deployment costs

