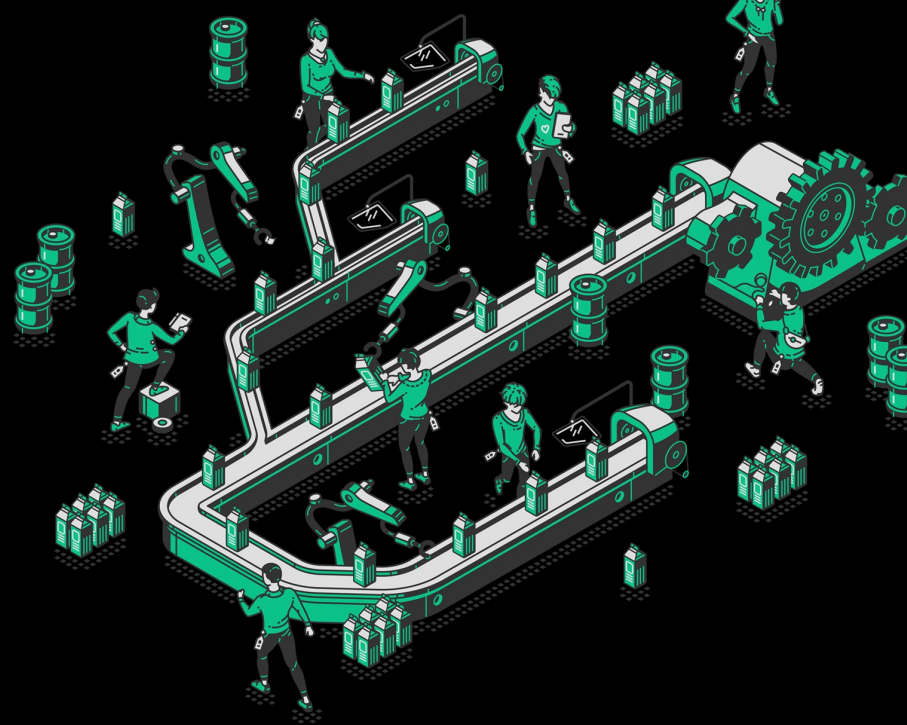


Meet the first **Production Copilot®**



Client Story

Quindi for Fashion Manufacturing

Shoe Manufacturing Excellence

YEAR

2023

CLIENT

Global Market Leader

INDUSTRY

Fashion, Shoe Manufacturing

PRODUCTION LAYOUT

Assembly line

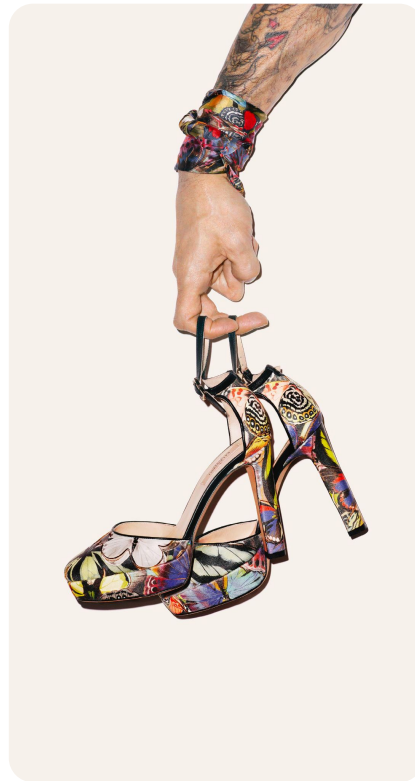
TAGS

SENSE

CONTROL

PLAN

RFID





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Assembly line

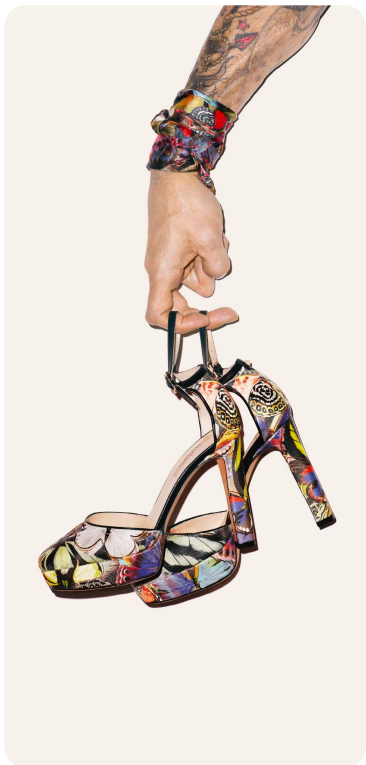
TAGS

SENSE

CONTROL

PLAN

RFID



The Challenge

Reduce the production lead time by 5%.
This way, increase productivity and cut cost of good sold (COGS).

Quindi Solved

#SENSE

Deployed RFID technology to track automatically the assembly cycle times of each phase (manual workstation).

#CONTROL

Allowed production advancement traceability, with no need for human input.

#PLAN

Collected data are used to automatize line balancing.

With Tangible Results

ON THEIR ECONOMICS

- With Quindi, lead time has been reduced by 6.3%
- As a result, productivity increased by 5%, COGS has been reduced by 2%.
- The system is resilient to personnel variability.

ON THEIR PEOPLE

- Operators don't need to input data and focus just on production
- Management & production supervisors now benefit from greater & accurate information when taking decisions



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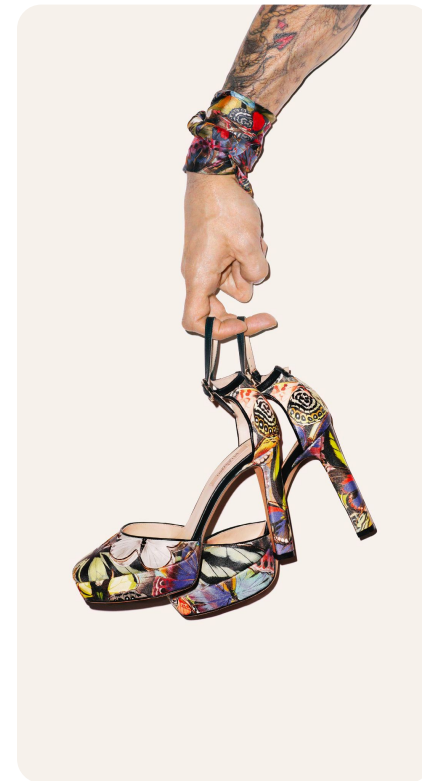
With Quindi, we gained both visibility and performance. We thought we were balancing the line correctly, it turns out we weren't. Now we have a tool to make sure it is optimally balanced at every moment, with no extra effort on our people, who can focus on shoes.

Firm's COO

”

The Client

- Fashion brand marketed in over 100 countries around the world, through a network of over 1500 retail points, including 175 single-brand boutiques.
- Quindi is deployed inside their plant in Tuscany, devoted to shoe manufacturing.
- At this plant, shoes are manually assembled in workstations along a closed-loop assembly line.
- With this setup, the Client manufactures a vast product mix, with high production volumes and no compromises on product quality.



The challenge Quindi solved with tangible results

Reduce the production lead time by 5%.

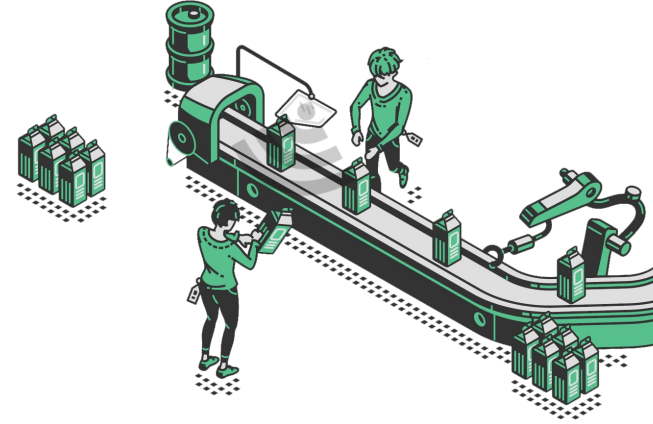
Hence, increase productivity and cut cost of goods sold (COGS).

- The Management communicated us their widespread perception that assembly tasks could be made more time-efficient.
- But they had no data to prove this, nor on how to achieve such greater efficiency.
- They transferred us the will to bring their processes under control and to shift to data-driven decisions to guide the lead time improvement.



From Sense to Plan with Quindi RFID technology

WHAT ASSEMBLY LAYOUT IS THIS DESIGNED FOR?



HOW IS IT DEPLOYED?

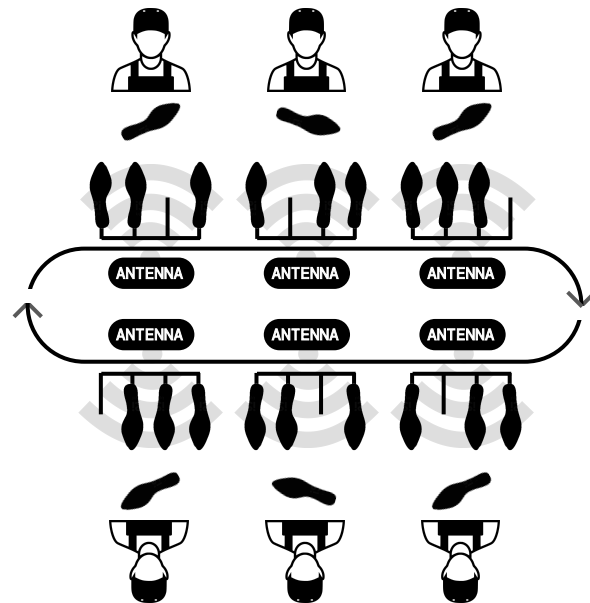


The challenge Quindi solved with tangible results

SENSE

We used RFID technology to sense the shoe path

- An RFID tag is placed on each shoe form housed in the racks that flow through the assembly line.
- RFID antennas and receivers are installed inside the assembly line, so they don't interfere with operators.
- Thanks to this setup, RFID tags can automatically identify and timestamp when a single shoe form:
 - ◆ enters into and exits from a given workstation;
 - ◆ is picked from and reinserted into the rack.





The challenge Quindi solved with tangible results

CONTROL

With this setup, production can be automatically advanced

- At the first station, each shoe form is paired with the article it will become.
- When Quindi detects the advancement of a shoe form down the line, it automatically advances its production from one working phase to the following.
- When the operator picks up the shoe from the rack, Quindi opens a working partial, and it closes it when the form is relocated into the rack. The working time is then obtained as the delta between the two moments.
- Quindi integrates with the plant ERP, and all info is registered automatically into it.

PLAN

Data analysis allows the optimal balancing of the line

- Merging the granular data on production activity with the stack of orders from the ERP, Quindi balances the assembly line at optimal speed.



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:

- balance the line optimally, with respect to the articles produced and the historical efficiency of operators
- Detect scrap right at the workstation, thus surpassing the need for scrap counting at the end of the line

Therefore, Quindi granted results above expectations:

- Lead time reduction: **6.3%**
- Productivity increase: **5%**
- COGS reduction: **2%**

On their people

Alongside economics, Quindi impacted positively on all people at the firm:

- No human data input whatsoever
 - ◆ Operators just focus on core production tasks
 - ◆ Data reliability increases (human-error free)
- Management & production supervisors now benefit from greater & accurate information when taking decisions
- Operators can benchmark their activity against their own and the overall production performance history



Progetto: **Piattaforma di Intelligenza Artificiale per processi manifatturieri più sostenibili ed inclusivi**



Soggetto Attuatore:

QUINDI S.R.L.

CARRETTA S.R.L.

CP SOFTWARE NORD-EST S.R.L.

INTERVENTO REALIZZATO AVVALENDOSI DEL FINANZIAMENTO
PIANO SVILUPPO E COESIONE VENETO - SEZIONE SPECIALE

