



Quintil
Valley

CHALLENGE 3

“3D Digitization and Intelligent Costing”

CHALLENGE CONFECCIONES TRENTO S.A.C

Version : V-01
Approval Date : May 20, 2025

CHALLENGE 3: 3D Digitization and Intelligent Costing: How could we digitalize the garment design and validation process, allowing the customer to design and calculate costs through a 3D environment, modifying measurements, styles, colors, and materials, while knowing the associated costs of each design in real time?

Context:

At Confecciones Trento S.A.C., the garment design and validation process is semi-automated, involving multiple iterations of adjustments, physical tests, and progressive validations with the client. This dynamic extends development times, increases logistical costs, and results in unnecessary use of physical samples (waste). Additionally, the lack of digitalization limits the ability to visualize changes in real time and assess their impact on costs and production.

The challenge proposes implementing a 3D digital design and intelligent costing model, where clients can customize their garments, visualize modifications, and see real-time pricing — all through a virtual platform.

This will enable:

- **Sustainability:** Reduction in the use of physical samples (waste) and optimization of resources. Decrease in rework.
- **Operational efficiency:** Shorter development times and faster adjustments.
- **More agile, effective, and assertive communication** with the customer, thereby increasing customer satisfaction and encouraging repeat purchases.

The solution will transform the design process into a digital, agile, and efficiency-focused environment, improving service quality.

Identified Problem:

The current garment design and validation process at Confecciones is semi-automated, requiring real-time feedback from the client regarding the garment and the economic impact of their design decisions. The absence of a real-time automated system for garment design and costing leads to operational overruns, inefficiencies, and frequent rework due to variability in design patterns (waste). Solving this issue would improve service quality and reduce cycle times.

Main Objective:

Bring the customer closer to the design, development, and costing of their garment. The goal is to implement a technological solution for digital design and validation that integrates 3D simulation and artificial intelligence for real-time costing, enabling real-time design customization while reducing rework and the use of physical samples.

Key Success Indicators:

- Levels of Service Quality.

- Reduction in development and quoting times.
- Reduction of physical prototypes.
- Reduction of CO₂ emissions and material consumption.
- Higher sales conversion due to the immersive customer experience.

Desired Solutions:

- **3D Simulation** for real-time interactive garment design, integrated with the costing process.
- **AI-powered automatic costing** to estimate prices based on changes in style, materials, and measurements.
- **Optimized recommendation algorithms** for cost-effective and sustainable configurations.
- **Integration with ERP (Enterprise Resource Planning)** for a direct connection between digital design and production.

Undesired Solutions:

- Technologies with TRL (Technology Readiness Level) below 6.
- Platforms without integration with costing, traceability, and ERP.
- Simulators without resource optimization or sustainability focus.