

From Paper Trail to Production Intelligence

Eliminating Manual Data Entry by Turning Every Shop-Floor Document into a Live, Structured Stream of Data

INDUSTRY

**Precision
Manufacturing**

DOMAIN

**Production Data Workflow Automation
& Operations Intelligence**

EXECUTIVE SUMMARY

A multi-facility precision manufacturing group runs a production environment where nearly every event — a completed work order, a passed or failed inspection, a received shipment, a line stoppage — starts life as a paper traveler, a handwritten checklist, or a photographed certificate. None of that is a paperwork problem. It is a production visibility problem: the shop floor generates the truth about what is happening in real time, but that truth reached ERP, QMS, and the people making decisions only after a human re-keyed it, hours or a shift later.

Trellissoft partnered with the organization to close that gap — not by scanning documents faster, but by turning every shop-floor document into a live, structured stream of production data. **DocuVera360** became the ingestion layer of a real-time operations intelligence platform.

By converting paper travelers, inspection checklists, GRNs, supplier certificates, and downtime logs into validated data the moment they were created, the solution routed critical data directly into the systems that plan, execute, and audit production.

Real-Time

Data captured and validated perfectly at the precise point of creation.

Structured

Data flows immediately straight into ERP, QMS, and BI ecosystems.

Zero

End-of-shift re-keying or stale decisions from delayed information.

TARGET OPERATIONAL PROFILE

- Paper Travelers & Inspection Checklists
- End-of-Shift Manual Data Re-Keying
- Delayed Escalations & Decision Lag
- Fragmented Compliance (CoCs, GRNs)

CORE PLATFORM CAPABILITIES

- Automated Ingestion at Source (DocuVera360)
- AI Extraction & Spec Validation (OCR/NLP)
- Automated Workflow Routing to ERP/QMS
- Real-Time BI & Alerting Mechanisms

Across the group's facilities, production runs on documents that were never designed to feed a digital system: paper travelers moving with the batch from station to station, handwritten quality inspection checklists, supplier certificates of conformance arriving as WhatsApp photos, and GRNs filled out at the receiving dock. Each one carries information the business needs immediately — but each one also requires a person to read it, interpret it, and type it into ERP, QMS, or a spreadsheet before it becomes usable data.

"That relay step is where visibility breaks down. A defect flagged on an inspection sheet at 10am might not reach the quality system until the shift ends at 6pm. A supplier certificate photographed at the dock might sit in a phone gallery for a day before anyone enters it. By the time the data reaches a system that can act on it, the production window to act on it cheaply — hold the batch, adjust the line, escalate to the supplier — has often already closed."

KEY FRICTION POINTS



DECISION LAG ON THE LINE

Production data reached ERP and QMS hours after the event, so hold decisions, escalations, and replanning were made on information that was already out of date.



SHIFT-TO-SHIFT DATA LOSS

Exceptions and inspection results recorded on paper travelers didn't reliably transfer between shifts, so the same defects and rework kept recurring undetected.



AUDIT & TRACEABILITY GAPS

CoC certificates, GRNs, and CAPA records were scattered across paper, photos, and email, making compliance recall slow and inconsistent across facilities.

NON-SCALABLE MONITORING

Because the critical data entry step depends entirely on people, scaling monitoring to more lines or more facilities meant scaling headcount, not just scaling insight.

Trellissoft engineered DocuVera360 as the connective layer between the physical shop floor and the systems that run it — not a scanning utility bolted onto existing workflows, but the mechanism that makes the floor itself a real-time data source. Key pillars of the solution include:



AUTOMATED CAPTURE AT THE SOURCE

DocuVera360 ingests paper travelers, inspection checklists, GRNs, and supplier certificates directly from the floor — scanned, photographed, or submitted via WhatsApp — with no dedicated data-entry step in between.



AI EXTRACTION & VALIDATION

OCR, NLP, and ML classification extract every field and validate it against BOM and spec data in real time, flagging exceptions instead of silently accepting bad data into the system of record.



WORKFLOW ROUTING

Validated data routes automatically into ERP, QMS, and MES — hold decisions, CAPA workflows, and supervisor alerts trigger on their own, without anyone re-typing what the floor already reported.



REAL-TIME BI & ALERTS

Structured production data feeds live dashboards and continuous monitoring, surfacing quality and supply trends before they cascade across shifts or facilities.

“By capturing shop-floor documents at the moment they're created, we turned paperwork into a live feed of production truth — giving plant teams the same real-time visibility their ERP always promised, but never actually delivered.”

— OPERATIONS LEADERSHIP, PRECISION MANUFACTURING GROUP

☑ INTEGRATION RESULTS

METRIC	BEFORE INTEGRATION	AFTER INTEGRATION
Data Latency	End-of-shift or next-day manual entry left production blind for hours after each event.	Structured data available within minutes of capture, enabling same-shift decisions.
Shift Continuity	Handover relied on paper notes and memory, so exceptions repeated across shifts undetected.	Every inspection result and exception persists in a structured, searchable record across shifts and facilities.
Processing Cost	Manual entry and reconciliation cost roughly \$20–22 per document across GRNs, CoCs, and inspection sheets.	Automated capture and validation reduced cost to roughly \$2–3 per document at comparable volume.
Compliance Readiness	CoC, GRN, and CAPA records scattered across paper, photos, and email threads.	Every document validated, structured, and audit-ready inside one traceable system.

EXECUTIVE OUTCOME & PERFORMANCE IMPACT

Implementing DocuVera360 led to an immediate measurable impact on operational performance. By automating the data ingestion layer, the facility drove its **extraction accuracy to over 90%**, completely overriding the previously inconsistent, error-prone manual entry methods.

Simultaneously, the **document cycle time became ~60% faster**. The historical lag that persisted across shifts was eliminated. By bridging the physical shop floor and the digital system of record in real time, the organization achieved true production intelligence without fundamentally changing how operators interact with the manufacturing line.

ABOUT TRELLISOFT

Trellissoft is a premier enterprise technology partner specializing in AI-driven automation and modernization for manufacturing, BFSI, and logistics organizations. We engineer connected, scalable data architectures that turn fragmented shop-floor and back-office information into real-time operational intelligence — transforming legacy production environments into agile, future-ready platforms.