

## SUCCESS STORY

# Jute Smart 2.0

## Digitally Transforming India's Jute Procurement Ecosystem

Company Name  
**Jute Commissioner**

Industry  
**Textile**

Location  
**India**

Impact  
**How Jute Smart 2.0 Enabled a 70% Boost in Procurement Efficiency Across India**

Application  
**Web & Mobile Application**

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## A CASE STUDY

### Background

The Office of the Jute Commissioner (JC), headquartered in Kolkata, plays a central role in regulating and promoting India's jute industry. From raw jute marketing to the production of finished jute goods, the JC oversees end-to-end operations under the Jute & Jute Textiles Control Order, 2016. It also advises on policy matters, ensures quality standards in collaboration with the Bureau of Indian Standards (BIS), and coordinates with 20+ State Procurement Agencies (SPAs) responsible for supplying jute sacks for food grain distribution across India.

### The Need for Transformation

The previous Jute Smart 1.0 platform was built on outdated technology, burdened with manual, paper-based processes. It lacked the ability to integrate with external systems such as the Railways (FOIS), logistics partners like CONCOR, and banking institutions. Security weaknesses, poor scalability, and fragmented workflows were stalling operations and increasing compliance risks. The leadership recognized the urgency and set out to modernize the entire ecosystem through a bold, technology-driven roadmap driven by Cubastion.



### Solutions

To meet these challenges head-on, Cubastion partnered with the JC to reimagine the procurement lifecycle. Jute Smart 2.0 is a cloud-native, microservices-based digital platform designed to bring agility, transparency, and scalability to jute procurement.

- **Microservices Architecture:** 18+ loosely coupled services (e.g., Order Management, Inspection, Payments), managed via Kubernetes for high scalability and fault isolation.
- **Real-Time Workflow Orchestration:** Kafka-enabled event streaming to ensure instant communication across stakeholders.
- **Robust Security:** Role-Based Access Control (RBAC), Multi-Factor Authentication (MFA), digital signatures, and audit logging.
- **Seamless Third-Party Integrations:**
  - FOIS and CONCOR for GST-compliant e-invoicing and shipment tracking.
  - Banking APIs for real-time payment status and validation.
- **Mobile Enablement:** Custom Android/iOS apps used by 300+ field inspectors to upload geo-tagged inspection reports, images, and real-time compliance data.
- **Automated, Intelligent Workflows:**
  - SPAs raise indents and initiate payments through a digital interface.
  - The JC system automatically generates Production Control cum Supply Orders (PCSOs).
  - Mills schedules inspections and triggers shipments via integrated APIs.
  - Consignees digitally confirm receipt and lodge complaints.

### Business Outcomes

Procurement digitization enabled a 100% paperless process, reducing indent processing time from three weeks to 48 hours. It ensures real-time visibility into inspections, payments, and shipments, with automated audit trails for regulatory compliance. The unified digital platform fosters seamless collaboration among JC, SPAs, mills, banks, and logistics partners.

#### High System Uptime

**99.5%** SLA achieved, ensuring uninterrupted operations.

#### Scalable Concurrent Usage

**200+** concurrent users supported without performance drop.

#### Extensive User Reach

**20,000+** active users across the platform.

#### High Transaction Volume

**10M+** transactions processed every 10 hours seamlessly.

#### Seamless Third-Party Integration

**3+** key integrations (Railways, CONCOR, Banks) delivering smooth data exchange.

#### Mobile-First Adoption

**300+** inspectors empowered via mobile app in the field.

#### Faster Dispute Resolution

**65%** reduction in resolution time through streamlined workflows.

## Challenges Faced

### Business Challenges

India's jute procurement system spans SPAs, mills, inspectors, transporters, and consignees—each with critical roles. However, legacy bottlenecks impeded performance:

#### • Operational Inefficiency

Manual approval of indents and payment reconciliations took weeks.

#### • Lack of Quality Oversight

Absence of real-time inspection tracking led to frequent disputes.

#### • Supply Chain Blind Spots

No end-to-end visibility across shipments and deliveries.

#### • Compliance Complexity

Paper records made audits time-consuming and prone to errors.

#### • Disconnected Stakeholders

SPAs, mills, and JC worked in isolated silos.

### Technical Challenges

#### • Rigid Legacy Architecture

Couldn't support the required throughput of 10 M+ transactions per day.

#### • Security Gaps

Lacked multi-factor authentication, e-Sign, and secure digital transactions.

#### • No External Integrations

Systems weren't connected with railways, banks, or logistics providers.

#### • Mobile Limitations

Field inspectors lacked access to real-time reporting tools.

#### • Fragmented Data

Siloed databases hindered process transparency and reconciliation.

## Key Areas of Expertise Demonstrated

### • Enterprise Architecture Redesign

- Replacing a legacy monolith with modular, scalable microservices.

### • Cloud-Native Development

- Designing the system for cloud scalability, reliability, and agility.

### • API Integration & Orchestration

- Creating secure, real-time interfaces with Indian Railways (FOIS), CONCOR, and banks.

### • Process Digitization

- Converting multi-stakeholder workflows to end-to-end digital formats.

### • Field Mobility Enablement

- Equipping inspectors with real-time, mobile-first inspection tools.

### • Security Engineering

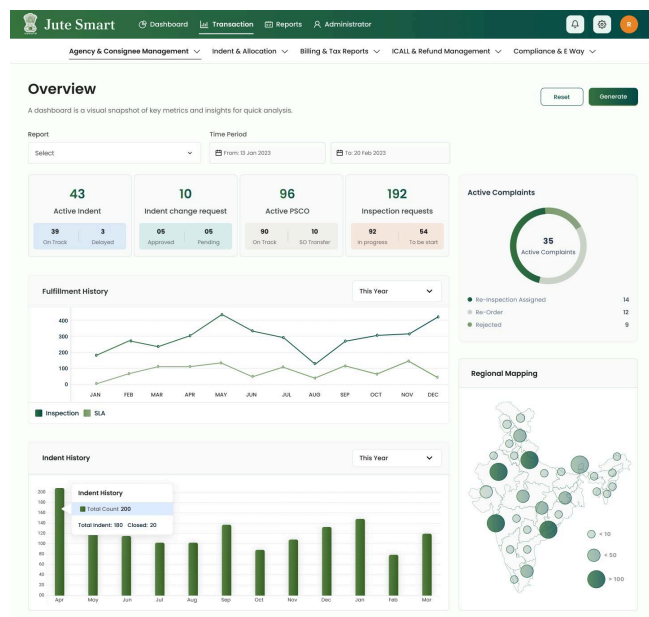
- Implementing robust security protocols like MFA, RBAC, and digital signatures.

### • Regulatory Technology (RegTech)

- Building automated audit trails for full compliance with government regulations.

### • Data Strategy

- Enabling real-time, actionable insights through unified dashboards and reporting.



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