KANSOFT

CASE STUDY · 2026

— APPLICATION MODERNIZATION · IOT

# In-Plant *Logistics* System Modernisation for a Leading Cement Manufacturer

From a high-cost legacy platform to a scalable, real-time, IoT-enabled in-plant operations system — *delivered in three months, ahead of AMC renewal.*


| INDUSTRY | PRACTICE | ENGAGEMENT | TIMELINE |
|---|---|---|---|
| Cement Manufacturing | Application Modernization · IoT Integration | Legacy Replacement | 3 months · Two phases |

— THE CLIENT & THE CONTEXT

# A cement manufacturer racing the clock — replace a legacy plant platform before AMC renewal, without losing a shift.

The client is a leading cement manufacturing enterprise running large-scale production facilities with complex in-plant logistics, vehicle movement, and material handling operations.

The existing platform — an Autoplant deployment that had quietly accumulated technical debt — was carrying high recurring AMC costs, slow response times, and an architecture that made every enhancement a project of its own. To improve operational efficiency and cut infrastructure costs, the organization needed to replace it with a modern, scalable, automated logistics system.

The constraint that defined the engagement: the new platform had to be live before the existing AMC came up for renewal. That meant a modernization timeline measured in months, not quarters — and zero tolerance for a downed plant.

ENGAGEMENT SNAPSHOT

## What the client needed

| | |
|---|---|
| Industry | Cement Manufacturing |
| Use case | In-plant logistics |
| Architecture | .NET microservices |
| Cloud | Microsoft Azure |
| IoT scope | Plant-wide integration |
| Delivery | 2 phases · 3 months |

KEY CHALLENGES

# Five constraints that made the legacy platform unworkable.

01

### Legacy system limitations

The existing Autoplant system carried high AMC costs and slow response times — a recurring tax on operational efficiency without a corresponding upside.

02

### Limited flexibility

Enhancements were expensive and time-consuming. The legacy architecture restricted future scalability and locked the business out of new operational use cases.

03

### Manual operations

Heavy dependency on manual workflows across vehicle movement, weighment, and coordination — which translated into operational delays and human error in a process where neither is cheap.

04

### Lack of real-time visibility

No centralized operational dashboards. Decisions about plant flow happened on lagged information, when they happened at all.

05 · AMC DEADLINE

### And all of it sitting on a deadline the legacy vendor controlled.

The AMC renewal window forced the timeline. A new platform had to be production-grade and running plant operations before the existing contract lapsed — which meant compressing a typical 9–12 month modernization into a fraction of that, without sacrificing the architectural quality that made the project worth doing.

— OUR APPROACH

# A modernization-first strategy — scalable architecture, automation, and IoT, sequenced for speed.

Kansoft executed a modernization-first strategy by combining scalable architecture design, automation, and IoT integration. Each phase was scoped to land in production, not just demo well in a review.

**01**

DISCOVERY

### Workflow Assessment

Analyzed existing Autoplant workflows, bottlenecks, and operational dependencies — including the integrations the legacy platform held together implicitly.

**02**

ARCHITECTURE

### Platform Re-Architecture

Designed a microservices architecture for scalability, flexibility, and system responsiveness — sized for the plant's current scale and the next phase of operational use cases.

**03**

BUILD

### Custom Application Development

Built a modern in-plant logistics platform using .NET Core and Angular — chosen for the team's existing skill base and Azure-native deployment.

**04**

IOT · CLOUD

### IoT Enablement & Cloud Foundation

Integrated plant devices and operational systems for real-time data exchange; leveraged Azure services to ensure high availability, performance, and transaction reliability under plant load.

SOLUTION DELIVERED · PART 1 OF 2

# What we built — the platform, in six modules.

The first three modules establish the modern platform foundation: a replacement for Autoplant, IoT integration with plant devices, and automated vehicle sequencing.

## 01 Modern In-Plant Logistics Platform

- Complete replacement of the legacy Autoplant system
- Flexible, scalable architecture supporting future enhancements without re-platforming
- Built on .NET Core and Angular — production-ready, not migration-ready

## 02 IoT-Enabled Plant Operations

- Integration with weighment systems, loading slips, and announcement systems
- Real-time vehicle sequencing and operational coordination across stations
- Plant devices feed the platform — not a parallel data layer

## 03 Automated Vehicle Sequencing

- Intelligent sequencing that reduces manual intervention at the gate
- Improved turnaround time and queue throughput
- Sequencing decisions surface on the same dashboards as weighbridge and load data

SOLUTION DELIVERED · PART 2 OF 2

# From real-time visibility to a cloud foundation built to scale.

Modules four through six add the live operational dashboards, the cloud infrastructure backbone, and the integration surface that ties everything to plant operations.

### 04 Real-Time Operational Dashboards

- Centralized visibility into plant logistics, vehicle flow, and workflow status
- Faster, data-driven decisions during a shift — not after it
- Drill-through from KPI to event-level detail

### 05 Cloud-Based Infrastructure Foundation

- Azure Blob Storage for scalable data management across plant data volumes
- Azure Service Bus for transaction orchestration across microservices
- Azure Cache for high-performance master data access at plant tempo

### 06 Plant Systems & Workflow Integrations

- Weighment systems, vehicle sequencing displays, plant announcement systems — all wired into the platform
- Internal logistics workflows extended end to end across modules
- Integration surface designed to add new devices and downstream systems without rework

— TECHNOLOGY STACK

# Built on a stack chosen for plant tempo and engineering reliability.

Every choice in the stack maps to a plant-floor constraint — sub-second response, transaction integrity under load, and the ability to keep adding integrations without breaking what's already running.

LAYER 01 · BACKEND

### .NET Core microservices

Service-per-capability architecture that lets each module scale and evolve independently. The microservices boundary maps to plant operational concerns, not arbitrary code splits.

Microservices

LAYER 02 · FRONTEND

### Angular web platform

Modern single-page application for plant operators, supervisors, and management. Dashboard-first UX, responsive across station displays.

Angular

LAYER 03 · CLOUD

### Microsoft Azure

Production deployment on Azure — chosen for the client's existing enterprise commitments and the maturity of the data and messaging services.

Azure

LAYER 04 · STORAGE

### Azure Blob Storage

Scalable object storage for operational data and document artifacts — sized for plant volumes without per-row friction.

Blob

LAYER 05 · MESSAGING

### Azure Service Bus & Cache

Service Bus orchestrates transactions across microservices; Azure Cache keeps master data access fast on the hot path.

Service Bus

LAYER 06 · INTEGRATIONS

### IoT & plant systems

Direct integration with IoT devices, weighment systems, vehicle sequencing displays, and announcement systems — wired into the platform, not bolted to it.

IoT

— MEASURED OUTCOMES

# Before and after — six things that changed.

| METRIC | BEFORE | AFTER |
|---|---|---|
| **System Performance** | Slow legacy platform | **Fast, responsive system** |
| **AMC Costs** | High recurring costs | **Optimized infrastructure model** |
| **Operational Processes** | Manual & fragmented | **Automated workflows** |
| **Vehicle Sequencing** | Manual coordination | **Automated sequencing** |
| **Data Visibility** | Limited operational tracking | **Real-time dashboards** |
| **Platform Scalability** | Rigid architecture | **Flexible microservices** |

— BUSINESS IMPACT

- ✓ Avoided high AMC renewal costs through timely legacy replacement
- ✓ Reduced manual effort across logistics workflows with automated vehicle sequencing
- ✓ Improved operational responsiveness and system performance under plant load
- ✓ Enabled real-time operational visibility across plant processes — for the first time
- ✓ Built a scalable microservices architecture supporting future modernization initiatives without re-platforming

— WHAT CHANGED FOR THE BUSINESS

# Beyond the platform — four ways the work compounded.

### Operational Efficiency

Automation across logistics workflows significantly reduced manual coordination and improved operational throughput across shifts.

### Cost Optimization

Replacing the legacy platform ahead of AMC renewal removed recurring vendor cost and reduced dependency on a single legacy supplier.

### Real-Time Decision Making

Live dashboards enabled faster monitoring and proactive management of plant operations — decisions during a shift, not after it.

### Future-Ready Infrastructure

The microservices architecture provides flexibility for rapid enhancements and the next phase of operational use cases without re-platforming.

— WHY KANSOFT

## The capability mix this engagement required.

**01** Strong expertise in industrial and manufacturing platforms — not generic enterprise patterns.

**02** Deep experience in legacy system modernisation, including phased cutover under live operational load.

**03** Capability in IoT and system integration across plant devices and operational systems.

**04** Cloud-first engineering approach with proven Azure delivery — and the discipline to ship under a hard deadline.

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CONTINUE THE CONVERSATION

READY TO BUILD SOMETHING LIKE THIS?

# If your *plant systems* are running on a vendor timeline you don't control, the next call is the one worth having.

We help manufacturing organizations modernize legacy plant platforms, integrate IoT and operational systems, and build the cloud-native foundation that supports the next decade of operational change. If that's where you're headed, let's talk.


SPEAK TO OUR TEAM

sales@kansoftware.com

VISIT

kansoftware.com