CELESTIAL SYSTEMS

SUPPLY CHAIN OPTIMIZATION WITH AI & IoT (8-Week Implementation)

Enhance Supply Chain Visibility And Efficiency With Azure AI And IoT Solutions

Pricing : $45,000 | Categories : IoT, AI & Machine Learning, Supply Chain, Analytics

AZURE SERVICES USED : Azure IoT Hub, Azure Digital Twins, Azure Machine Learning, Azure Stream Analytics, Azure Synapse Analytics, Azure Maps, Power BI, Azure Functions, Azure Monitor, Azure Data Lake

The Challenge

Organizations face supply chain challenges:

- ✓ Lack of real-time visibility into inventory and shipments
- ✓ Inefficient demand forecasting leading to stock-outs or overstock
- ✓ Poor asset utilization and tracking
- ✓ Inability to predict and prevent disruptions
- ✓ Manual processes for route optimization
- ✓ High operational costs and waste

Our Solution

Celestial delivers an intelligent supply chain platform using Azure IoT, Machine Learning, and Digital Twins. Our 8-week implementation provides real-time visibility, predictive analytics for demand forecasting, asset tracking, and automated optimization that reduces costs by 25% while improving service levels.
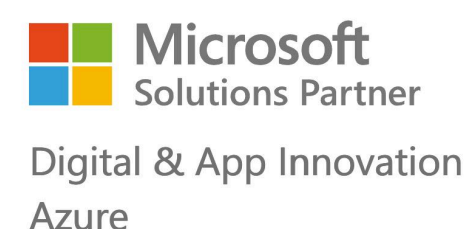
What Makes This Different

- ✓ End-to-End Visibility: From supplier to customer
- ✓ Predictive Intelligence: AI-powered forecasting and optimization
- ✓ Real-Time Monitoring: IoT integration for live tracking
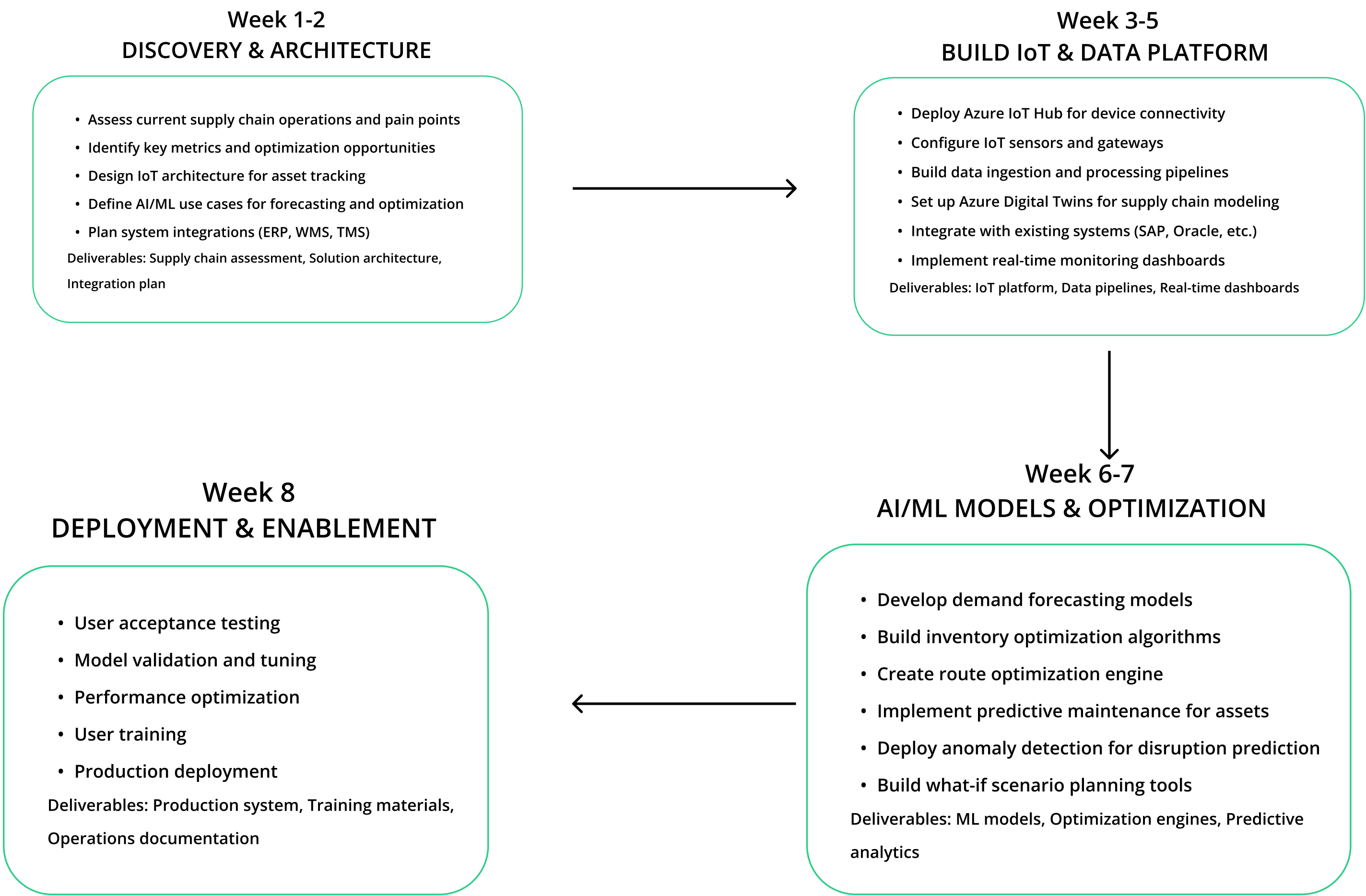- ✓ Digital Twin: Virtual representation of your supply chain

Key Features

1. REAL-TIME VISIBILITY
- IoT-enabled asset and shipment tracking
- Live inventory levels across locations
- Real-time alerts and notifications
- Geofencing and location-based triggers

2. DEMAND FORECASTING
- Azure ML for accurate demand prediction
- Multi-factor analysis (seasonality, trends, events)
- Continuous model retraining
- Forecast accuracy improvements of 40%+

3. INVENTORY OPTIMIZATION
- AI-powered stock level recommendations
- Safety stock calculations
- Automated reorder point optimization
- Multi-echelon inventory management

4. LOGISTICS OPTIMIZATION
- Route optimization for deliveries
- Load planning and consolidation
- Carrier selection optimization
- Cost and service level balancing

5. PREDICTIVE MAINTENANCE
- IoT sensor data analysis
- Equipment failure prediction
- Maintenance scheduling optimization
- Downtime reduction

6. SUPPLY CHAIN DIGITAL TWIN
- Virtual model of entire supply chain
- What-if scenario simulation
- Impact analysis for changes
- Continuous optimization

Business Outcome

- ✓ 25% reduction in supply chain costs
- ✓ 40% improvement in forecast accuracy
- ✓ 30% reduction in inventory carrying costs
- ✓ 50% faster response to disruptions
- ✓ 20% improvement in on-time delivery
- ✓ 15% increase in asset utilization
- ✓ Real-time end-to-end visibility

Microsoft Solutions Partner
Data & AI
Azure

Microsoft Solutions Partner
Infrastructure
Azure

Microsoft Solutions Partner
Digital & App Innovation
Azure

8-Week Consulting Engagement

Week 1-2
DISCOVERY & ARCHITECTURE

- Assess current supply chain operations and pain points
- Identify key metrics and optimization opportunities
- Design IoT architecture for asset tracking
- Define AI/ML use cases for forecasting and optimization
- Plan system integrations (ERP, WMS, TMS)

Deliverables: Supply chain assessment, Solution architecture, Integration plan

Week 3-5
BUILD IoT & DATA PLATFORM

- Deploy Azure IoT Hub for device connectivity
- Configure IoT sensors and gateways
- Build data ingestion and processing pipelines
- Set up Azure Digital Twins for supply chain modeling
- Integrate with existing systems (SAP, Oracle, etc.)
- Implement real-time monitoring dashboards

Deliverables: IoT platform, Data pipelines, Real-time dashboards

Week 8
DEPLOYMENT & ENABLEMENT

- User acceptance testing
- Model validation and tuning
- Performance optimization
- User training
- Production deployment

Deliverables: Production system, Training materials, Operations documentation

Week 6-7
AI/ML MODELS & OPTIMIZATION

- Develop demand forecasting models
- Build inventory optimization algorithms
- Create route optimization engine
- Implement predictive maintenance for assets
- Deploy anomaly detection for disruption prediction
- Build what-if scenario planning tools

Deliverables: ML models, Optimization engines, Predictive analytics

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Celestial: Empowering Enterprises Since 2001

Based in Vancouver, Canada with worldwide offices and a fully in-house engineering team, we combine a heritage of industry leadership in application engineering with deep expertise in data and AI solutions.

At Celestial, we're passionate about empowering enterprises to leverage the power of AI to unlock new opportunities, minimize risk, and sharpen their competitive edge.

375+	250+	20+	1500+
employees worldwide	clients	multi year engagements	mission critical applications

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