

THE SMART OEM

Connected Platform Blueprint

How industrial OEMs are becoming software-led businesses without rebuilding 25 disconnected systems.

A practical blueprint for OEM leaders to unify data, systems and workflows—so they can launch connected products faster, deliver intelligent services, and create recurring revenue at scale.



83M+

assets managed globally



60-70%

faster rollout of digital programs



10x

faster application development



25+

cloud services replaced

Industrial OEMs are becoming software companies

The industrial landscape is shifting. Customers no longer buy equipment alone—they buy outcomes, uptime, performance, and continuous value.

Successful OEMs are evolving from product manufacturers to software-driven service providers.

TRADITIONAL OEM MODEL



Equipment Sales

One-time transactions with limited customer visibility



Spare Parts

Break-fix support with reactive fulfillment



Maintenance Contracts

Scheduled or time-based service agreements



Reactive Service

Issues resolved after failure occurs



Disconnected Systems

Siloed data across devices, IT, and business systems



SOFTWARE-ENABLED OEM MODEL



Digital Products & Experiences

Continuous value through connected solutions



Subscription & Usage Models

Recurring revenue tied to outcomes and usage



Predictive & Proactive Services

AI/ML driven insights to prevent issues before they occur



Customer Success & Engagement

Data-driven experiences across the entire customer lifecycle



Unified Data & Systems

One platform connecting assets, systems, teams, and partners



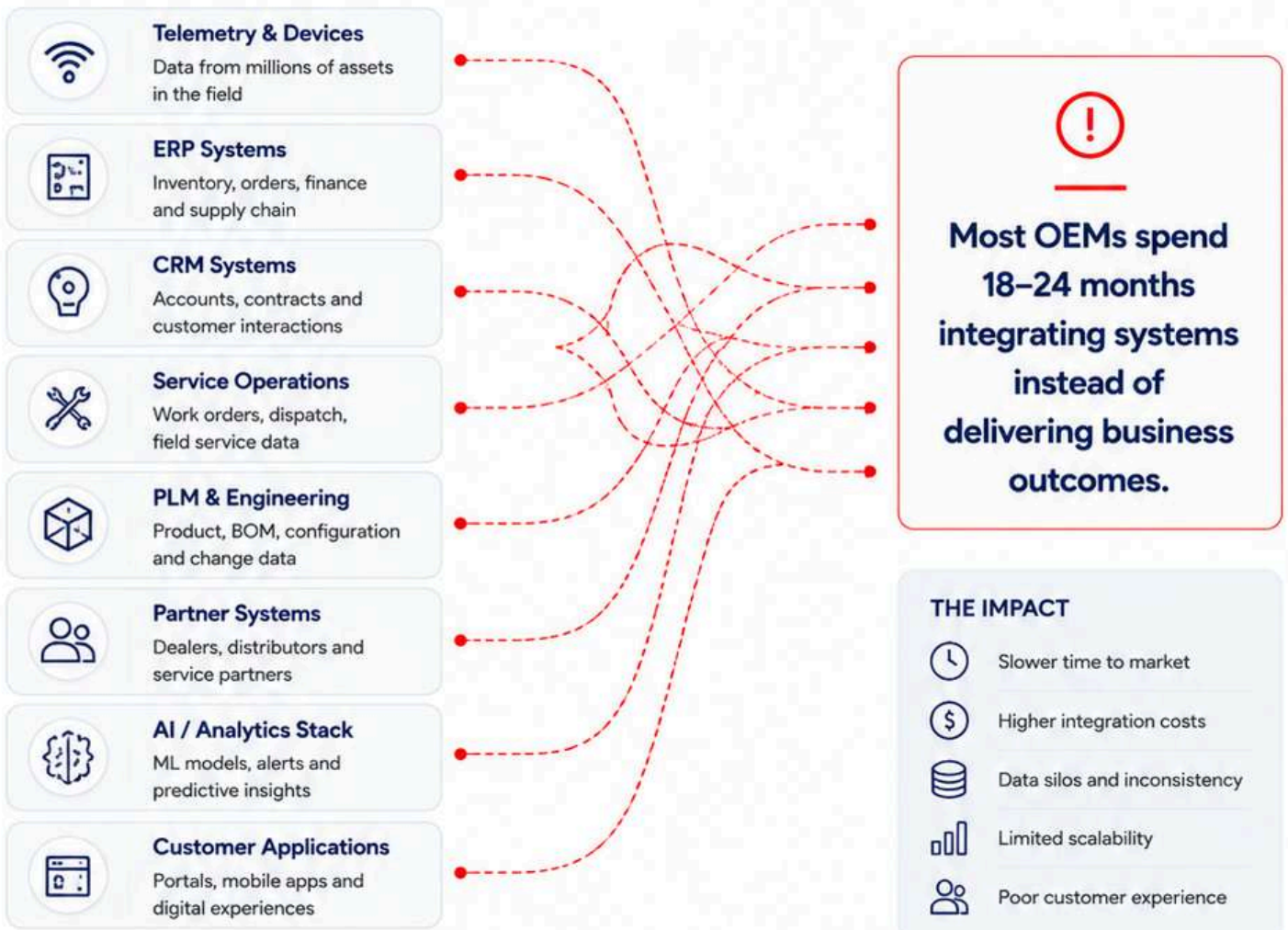
**Software is no longer a feature.
It is the foundation of competitive advantage.**

OEMs that build a unified platform today will lead the market tomorrow.

Why connected product initiatives slow down after launch

Most programs begin with device telemetry. But scale exposes a broader challenge: **Operational value depends on integrating telemetry with the rest of the business.**

THE FRAGMENTED REALITY



Most OEMs don't struggle because they lack data. They struggle because their data remains fragmented across business systems.

A unified platform is the only way to turn data into operational and commercial advantage.

Engineering the foundation for a unified platform

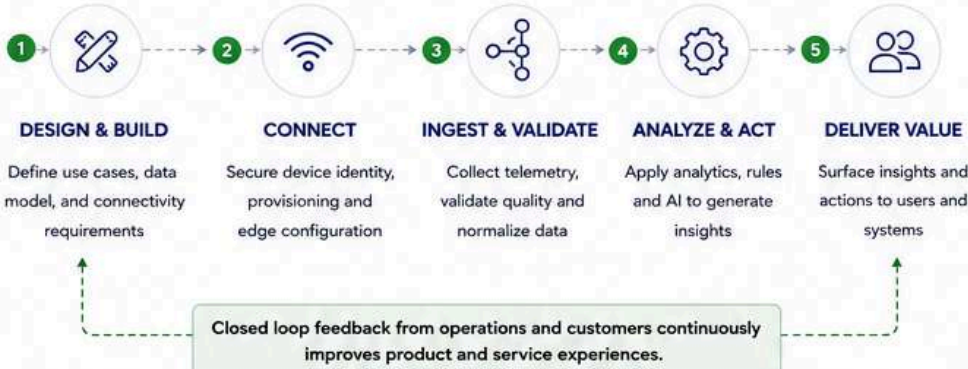
A modern, API-first and event-driven architecture is built to handle scale, complexity and continuous evolution.



Product engineering for connected solutions

From device to cloud to customer, engineering best practices ensure reliable data, resilient connectivity and seamless updates across the product lifecycle.

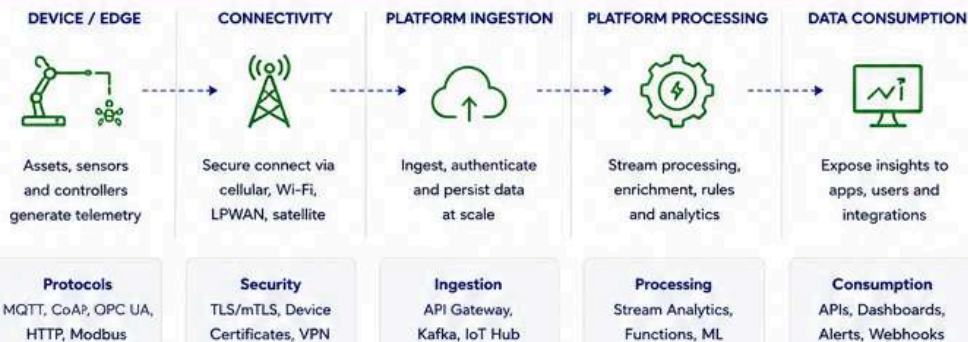
CONNECTED PRODUCT ENGINEERING LIFECYCLE



ENGINEERING CAPABILITIES



END-TO-END DATA FLOW



CROSS-CUTTING CAPABILITIES



ENGINEERING PRINCIPLES

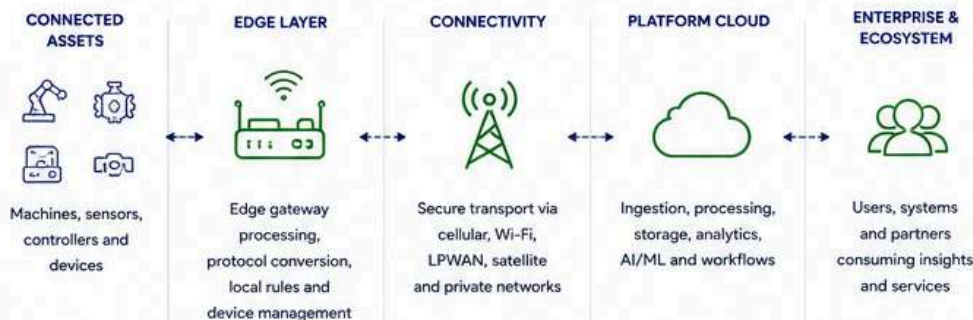


Engineering excellence in devices, connectivity and data pipelines ensures trust, reliability and continuous innovation.

Engineering for scale, reliability and operational excellence

A resilient, secure and observable platform architecture built for industrial scale and continuous evolution.

EDGE-TO-CLOUD REFERENCE TOPOLOGY



Secure by design across edge, network and cloud with zero-trust and end-to-end encryption.

PLATFORM QUALITY ATTRIBUTES



Scalability

- Horizontal scale across components
- Elastic compute and storage



Reliability

- High availability architecture
- Fault tolerance and auto-recovery



Performance

- Low latency data pipelines
- Optimized for high-throughput telemetry



Resilience

- Self-healing services
- Graceful degradation



Data Integrity

- ACID compliance for transactions
- Data validation and quality



Maintainability

- Modular services
- Automated operations

PLATFORM OPERATIONS



CI / CD Pipeline

Automated build, test, security scan and deploy



Infrastructure as Code

Versioned, repeatable and auditable infrastructure



Monitoring & Alerting

Real-time alerts, dashboards and incident response



Backup & DR

Backup, replication and tested disaster recovery



Cost & Capacity Management

Optimize cost, utilization and future capacity

ARCHITECTURAL PILLARS



Cloud & Infrastructure Agnostic

Deploy anywhere – public clouds, private cloud or on-prem.



Multi-Tenant by Design

Secure isolation, tenant configurability and elastic scale.



Event-Driven Architecture

Real-time ingestion and stream processing for operational intelligence.



API & Workflow Extensibility

Open APIs, low-code workflows and plug-in extensibility.



Agentic AI Layer

Autonomous agents for anomaly detection, automation and guidance.



Security & Compliance

Zero trust, least privilege, encryption and continuous compliance.



Observability by Design

Built-in telemetry, tracing, logging and SLO monitoring across all layers.

DATA FOUNDATION (OEM-OWNED)



Unified Data Foundation

Operational, contextual, transactional and document intelligence unified in one governed layer – purpose-built for industrial OEM use cases.



Operational Data



Contextual Data



Transactional Data



Document Intelligence



Built for industrial scale. Engineered for reliability. Designed for your customers' success.

Multi-tenant architecture built for OEM scale

A secure, flexible and scalable foundation to onboard customers, manage tenants and deliver differentiated experiences at scale.

MULTI-TENANT ARCHITECTURE OVERVIEW



Isolated yet unified – deliver scale without compromising security, performance or customer experience.

TENANT ISOLATION MODEL



Data Isolation

Logical separation of tenant data using database schemas, row-level security and encryption.



Identity & Access Isolation

Tenant-scoped users, roles and permissions with centralized IAM and least-privilege access.



Configuration Isolation

Tenant-level configurations, rules, workflows, dashboards and customizations.



Compute Isolation

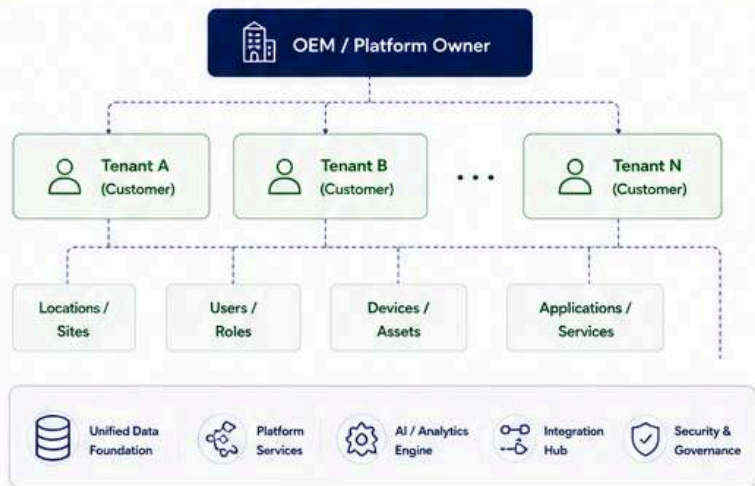
Secure multi-tenant compute with resource quotas, rate limits and workload isolation.



Network Isolation

Virtual private networking, tenant segmentation and secure connectivity.

TENANT HIERARCHY



KEY CAPABILITIES



Self-Service Onboarding
Rapid tenant onboarding via portal or APIs.



Role-Based Access
Granular access control with RBAC/ABAC.



Customizable Experiences
Tailor UI, workflows, dashboards and alerts.



Usage & Entitlements
Track usage, enforce limits and quotas.



Flexible Monetization
Support subscription, consumption and outcome-based models.



Audit & Compliance
Complete audit logs, data residency and regulatory compliance.

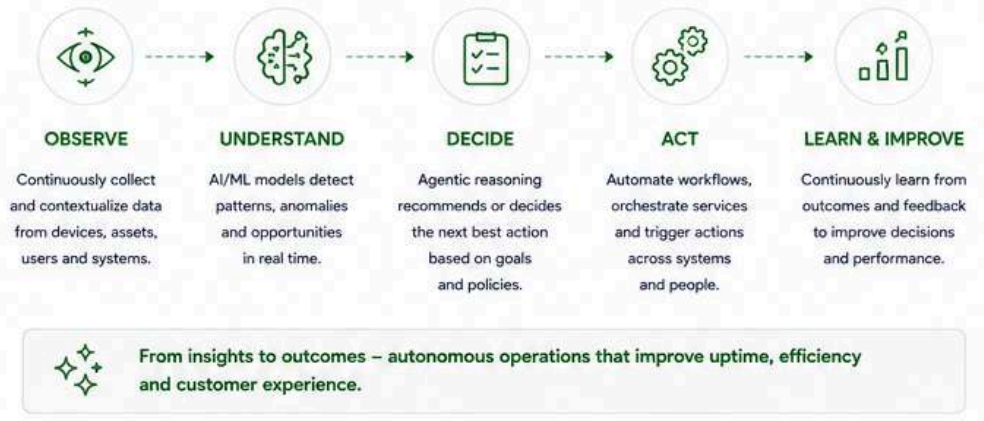


A multi-tenant foundation that lets OEMs grow confidently, deliver personalized experiences and maximize lifetime value.

Agentic AI layer for autonomous operations and intelligence

Embed intelligence everywhere – from the edge to the enterprise – to predict, prescribe and autonomously act across the product lifecycle.

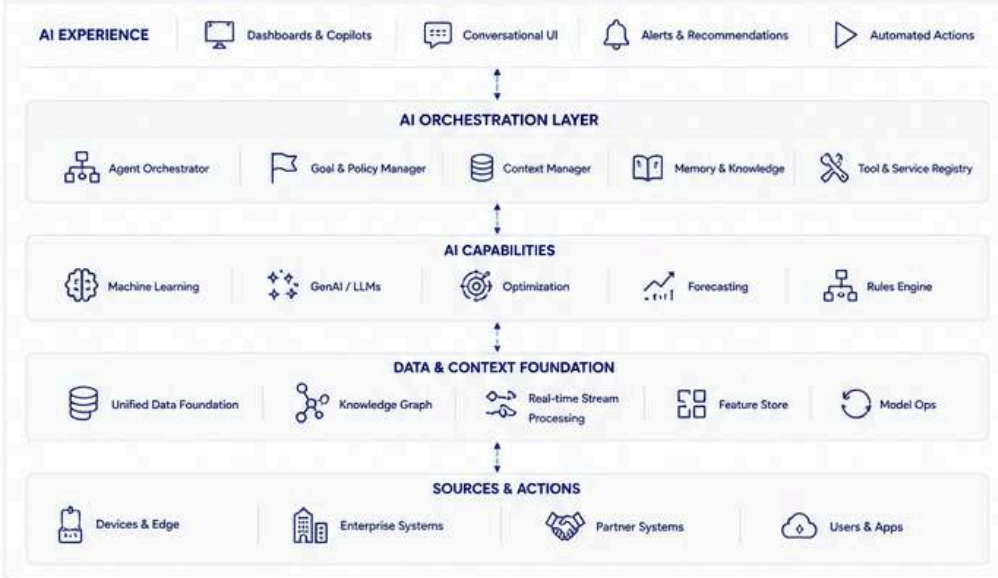
AGENTIC AI CAPABILITIES ACROSS THE PLATFORM



KEY AI USE CASES

- Predictive Maintenance**
Predict failures and recommend maintenance to prevent downtime.
- Anomaly Detection**
Detect abnormal behavior across assets, systems and processes.
- Intelligent Alerts**
Reduce noise with AI-powered alerts and root cause contextualization.
- Prescriptive Actions**
Recommend or automatically initiate actions to resolve issues faster.
- Resource Optimization**
Optimize inventory, routes, technician allocation and energy usage.
- Conversational Insights**
Natural language interfaces for data exploration and operational Q&A.
- Autonomous Workflows**
AI agents orchestrate multi-step workflows across systems.
- Customer Experience AI**
Personalize experiences and proactively address customer needs.

AGENTIC AI ARCHITECTURE



LLM & MODEL STRATEGY

- Model Agnostic**
Use best-of-breed models without lock-in.
- Private & Secure**
Run models in your environment or trusted partners.
- Bring Your Own Model**
Flexibility to integrate custom or domain-specific models.
- Responsible AI**
Bias detection, explainability and guardrails built-in to every layer.

GUARDRAILS & GOVERNANCE

- AI Safety & Guardrails**
Policies, content filters and action boundaries.
- Human-in-the-Loop**
Escalation, approvals and overrides where needed.
- Audit & Traceability**
Full trace of decisions, actions and model outputs.

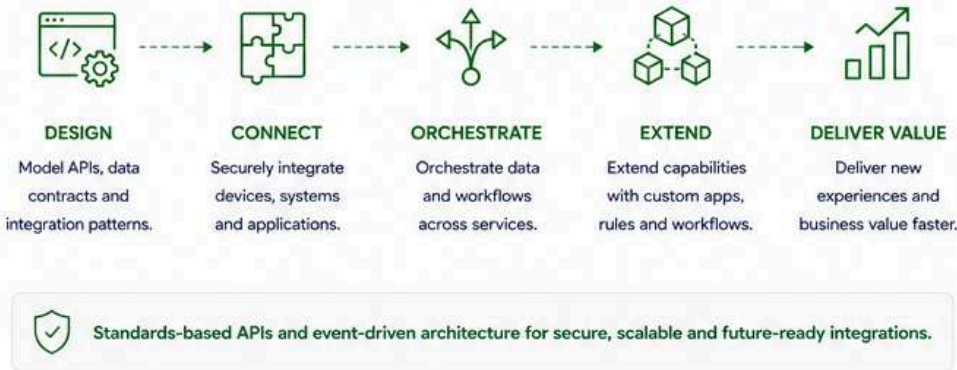
- Audit & Traceability**
Full trace of decisions, actions and model outputs.
- Privacy & Security**
Data minimization, encryption and access controls.

Agentic AI turns data into decisions, actions and outcomes – continuously improving operations and customer value.

API, integration and extensibility built for ecosystem scale

Open, flexible and developer-friendly by design – enabling seamless integration and accelerating innovation across the ecosystem.

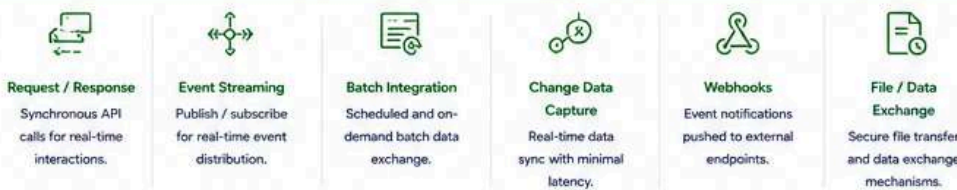
INTEGRATION & EXTENSIBILITY OVERVIEW



API & INTEGRATION ARCHITECTURE



SUPPORTED INTEGRATION PATTERNS



Flexible integration. Infinite possibilities.
Extend, integrate and innovate – on your terms.

EXTENSIBILITY HIGHLIGHTS

API-First Platform
RESTful APIs, GraphQL and event APIs for all platform capabilities.

Open Integration Hub
Pre-built connectors and adapters for enterprise, industrial and cloud systems.

Low-Code / No-Code Extensibility
Build custom apps, rules and workflows with visual tools.

Event-Driven by Default
Real-time events, streams and webhooks across all domains.

Developer Experience
Developer portal, SDKs, API documentation, sandbox and tools.

Security & Governance
OAuth2, API keys, scopes, rate limiting and audit logging.

Ecosystem Enablement
Partner, supplier and customer ecosystem ready.

Hybrid Connectivity
Integrate across cloud, edge, on-prem and legacy systems.

Deployment agnostic and hybrid-ready by design

Deploy anywhere, operate everywhere. Flex83 is architected to run across cloud, edge and on-prem environments – with no vendor lock-in.

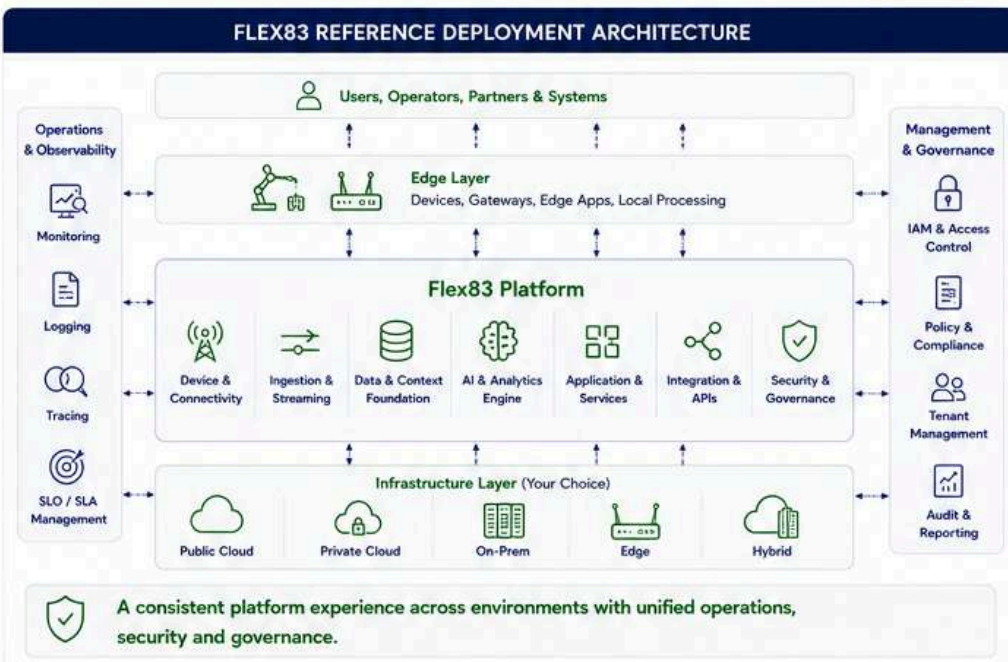
DEPLOY ANYWHERE

<p>Public Cloud Deploy on AWS, Azure, GCP or any other cloud of your choice.</p>	<p>Private Cloud Run in your private cloud with full control and isolation.</p>	<p>On-Prem Operate within your data center for maximum control and compliance.</p>	<p>Edge Run at the edge for low-latency operations and local autonomy.</p>	<p>Hybrid Seamlessly run hybrid workloads across any combination.</p>
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One platform. Any environment. No lock-in. Your choice, your control.

WHY IT MATTERS

- Freedom of Choice**
Deploy where it makes the most sense for your business and customers.
- No Vendor Lock-In**
Avoid proprietary dependencies and protect your flexibility.
- Resilience by Design**
Distribute workloads across environments for business continuity.
- Edge to Cloud Continuity**
Consistent platform capabilities from edge devices to cloud.
- Compliance & Sovereignty**
Meet data residency and regulatory requirements with ease.
- Cost Optimization**
Optimize workload placement for performance and total cost of ownership.
- Workload Portability**
Move workloads across environments without re-architecture.
- Operational Consistency**
Unified operations, monitoring and governance across all environments.



FLEX83 DEPLOYMENT MODELS

<p>Single-Tenant Dedicated Isolated environment for maximum control and customization.</p>	<p>Single-Tenant Shared Secure tenant isolation on shared infrastructure for efficiency.</p>	<p>Multi-Tenant (Partitioned) Logical isolation with configurable boundaries per tenant.</p>	<p>Edge-First Deployment Compute at the edge with optional cloud augmentation.</p>	<p>Cloud-First Deployment Leverage cloud for elastic scale with optional edge extensions.</p>
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Choose the model that fits your business, customers and operational needs.

KEY PLATFORM CAPABILITIES THAT ENABLE ANYWHERE DEPLOYMENT

- Containerized & Microservices Architecture
- Kubernetes Native
- Infrastructure as Code (IaC)
- Automated CI / CD Pipelines
- Centralized Management
- Zero Touch Provisioning
- Backup & DR Across Regions

Deploy with confidence. Operate with freedom.
Built for the environments you choose – today and tomorrow.

Unified data foundation for intelligent, trusted operations

Flex83 unifies operational, contextual, transactional and document intelligence in one governed data foundation – built for industrial scale and AI readiness.

THE FLEX83 UNIFIED DATA FOUNDATION

One Foundation.
All Your Data. Infinite Value.

Break down data silos. Unify every type of data in one governed layer to power analytics, AI and autonomous operations.



Unified

All data types connected in a single foundation.



Trusted

Governed, secure and compliant by design.



Contextual

Enriched with context to deliver meaningful intelligence.



AI-Ready

High quality, structured and accessible for advanced AI.



Scalable

Built to handle industrial scale and velocity.

DATA FOUNDATION BENEFITS



AI-Ready Insights

High quality, contextual data that powers analytics and autonomous operations.



Single Source of Truth

Eliminate silos and ensure consistency across the organization.



Trusted & Compliant

Built-in governance, security and compliance for peace of mind.



Faster Decision Making

Real-time, contextual data enables better decisions at every level.



Operational Efficiency

Streamlined data access reduces complexity and improves productivity.



Future Proof

Scales with your business and adapts to emerging technologies.



Lower TCO

Reduce data sprawl and optimize infrastructure and operational costs.

UNIFIED DATA LAYER – DATA THAT POWERS EVERYTHING



Operational Data (Real-time)

High-velocity data from assets, devices, systems and processes.

- Telemetry & sensor data
- Events & alarms
- Logs & metrics
- Machine states
- Edge data streams



Contextual Data (Master & Reference)

Business and engineering context that gives data meaning.

- Asset hierarchy
- Product & part master
- Location & site data
- Customer & partner data
- Configuration & models



Transactional Data (Business)

Critical business transactions and operational records.

- Orders & fulfillment
- Inventory & logistics
- Work orders & service
- Billing & contracts
- Entitlements & warranties



Document Intelligence (Unstructured)

Documents and content that drive knowledge.

- Manuals & guides
- Drawings & schematics
- Service reports
- Emails & communications
- Contracts & policies



Governance & Data Management

Data quality, metadata, lineage, access control, privacy, retention and compliance – built in by design.

DATA FLOW & INTELLIGENCE CONTINUUM



Ingest

Collect data from all sources across edge, systems and applications.



Process & Enrich

Cleanse, normalize and enrich data with context and rules.



Unified Data Foundation

Store, govern and manage all data in a unified, trusted layer.



Analyze & Learn

Apply analytics and AI/ML to uncover insights and patterns.



Act & Automate

Trigger actions, automate workflows and drive outcomes.

BUILT-IN CAPABILITIES



Data Ingestion

Batch, streaming and real-time ingestion at scale.



Data Quality

Validation, cleansing, deduplication and standardization.



Metadata & Catalog

Discover, understand and trust your data assets.



Lineage & Impact

End-to-end lineage and impact analysis for changes.



Access & Security

Role-based access, encryption and data protection.



Retention & Lifecycle

Policy-driven retention, archival and data lifecycle management.



APIs & Data Services

Expose trusted data via APIs for apps and partners.



A unified data foundation turns raw data into trusted intelligence – powering smarter products, better operations and exceptional experiences.

SOURCES

- Edge Devices & Gateways
- Industrial Systems (MES, SCADA, PLC)
- Enterprise Systems (ERP, CRM, PLM, EAM)
- Cloud & Third-Party Applications
- Documents & Content Repositories
- Partner & External Data

Business outcomes that matter

Flex83 empowers OEMs to transform how they build, service and operate connected products—delivering measurable impact across every dimension.

OUTCOMES ACROSS THE ENTERPRISE



Revenue Growth

20-40%

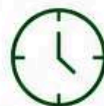
Increase in aftersales revenue with data-driven services & subscriptions.



Operational Efficiency

15-30%

Reduction in operational costs through automation and optimization.



Downtime Reduction

30-50%

Predict and prevent issues with real-time insights and AI-powered alerts.



Customer Satisfaction

25-35%

Improve NPS and retention with proactive service and personalized experiences.



Time to Market

2-5x

Accelerate innovation and bring connected products to market faster.



Sustainability Impact

10-20%

Optimize energy, reduce waste and drive measurable ESG outcomes.



Risk & Compliance Strengthened

Ensure data security, governance and regulatory compliance by design.



Total Cost of Ownership Lowered

Reduce infrastructure, integration and support costs at scale.



Real impact. Real results. Built with Flex83.

Empowering OEMs to lead in a connected, intelligent and sustainable world.

Proven across industries. Built for every OEM.

Flex83 adapts to your world—enabling intelligent connected products and operations across diverse industries and use cases.

INDUSTRIES WE EMPOWER



Industrial Equipment

- Predict failures and reduce unplanned downtime
- Optimize field service and technician productivity
- Enable outcome-based service models



Energy & Utilities

- Improve asset reliability and grid resilience
- Optimize maintenance and inspection cycles
- Enhance safety and regulatory compliance



Transportation & Mobility

- Optimize fleet utilization and routing
- Improve driver safety and performance
- Reduce total cost of operations



Building & Infrastructure

- Optimize building performance and energy
- Predict and prevent system failures
- Enhance occupant comfort and safety



Manufacturing

- Increase production efficiency and quality
- Reduce scrap, rework and downtime
- Enable connected supply chain visibility



Agriculture

- Optimize equipment usage and yields
- Monitor environmental conditions in real time
- Reduce waste and improve sustainability



One platform. Infinite possibilities.

Flex83 adapts to your industry, your use case, your way.

See how connected product initiatives can be accelerated

With Flex83, see how you can accelerate connected products innovation.

The Fragmented Reality



With this blueprint, achieve business outcomes in days.

The Connected Advantage with Flex83



Most OEMs do not struggle because they lack data. They struggle because their data remains fragmented across business systems.

The software backbone for modern OEM operations

Flex83 provides the common software layer between industrial assets and enterprise business systems.

It enables six foundational capabilities:

- 

CONNECT
Collect telemetry, enterprise events, documents, and service data from any source.
- 

UNIFY
Normalize operational and business context into one trusted data model.
- 

GOVERN
Apply role-based access, data lineage, privacy, quality, and observability.
- 

ORCHESTRATE
Automate workflows and business logic across people, systems, and machines.
- 

DELIVER
Power portals, applications, APIs, dashboards, and customer experiences.
- 

MONETIZE
Enable new service offerings, subscriptions, and digital revenue streams.



ACCELERATORS FOR FASTER OUTCOMES



Pre-Built Solutions

Industry solutions and use cases to get you started fast.



Implementation Toolkit

Proven frameworks, templates and best practices.



Expert Services

From strategy to deployment and continuous success.



Customer Success

Ongoing support and enablement for long-term value realization.



Partner Ecosystem

Strong network of technology and implementation partners.



Start fast. Scale with confidence.

Flex83 adapts to your needs—today and tomorrow.

Common deployment patterns across OEM segments



1 Connected HVAC Ecosystems

Unify building assets, service systems, energy data, and customer portals for smart buildings.



2 Industrial Equipment Platforms

Enable remote monitoring, predictive maintenance, and performance optimization for machinery.



3 Smart Sensing Products

Integrate sensor intelligence with enterprise systems and customer workflows.



4 Connected Energy Systems

Manage distributed assets, field operations, and predictive service for energy infrastructure.



A common platform reduces duplicated development, simplifies operations, and accelerates innovation.

Evaluate your current platform readiness

The move to software-led operations requires more than devices and dashboards. It requires a scalable architecture that can unify systems, teams, and business outcomes.

Schedule a Flex83 Architecture Strategy Review

A 45-minute session with our experts to assess your current architecture and define your modernization path.

[SCHEDULE NOW](#)



In this session, we review:

- ✓ Current architecture maturity
- ✓ Integration complexity
- ✓ Migration opportunities
- ✓ Total cost reduction
- ✓ Connected product scalability
- ✓ AI readiness roadmap



**Build the software foundation
before your competitors define the category.**