



autonomOS

The Operating System for the Intelligent Enterprise

Leading the paradigm shift from rigid legacy software to unified, natural language experiences that enable truly autonomous operations at enterprise scale.

The Crisis: Digital Chaos in the Modern Enterprise



Disconnected Systems

Large enterprises operate 275-370 applications on average, and over 1,000 including Shadow IT.

This is massive operational fragmentation.



Slow Adaptation

Legacy software cannot support the agentic AI revolution.

Organizations remain "jailed" by decades-old systems that were never designed for intelligent automation.



Manual Orchestration

Teams waste countless hours on "swivel chair" work—manually moving data between systems, reconciling information, and executing repetitive processes.

The result? Organizations are data-rich but action-poor, creating a massive "Insight-to-Action Gap" that paralyzes decision-making and execution.

The Scale of the Problem

1,000+

Average Applications

Large enterprises manage between 275-370 applications, with some studies reporting up to 976 when including Shadow IT

\$2.6T

Annual Legacy Spend

Enterprises spend \$2.6 trillion annually just keeping legacy systems running—the cost of inaction

16 mos

Modernization Time

Average application modernization takes 16 months and costs **\$1.5M** per project



The True Cost of Software



Initial purchase is just the beginning

The software license or development cost represents only a fraction of total lifetime expense. Industry data reveals a stark reality:

- **On-premise software:** Annual maintenance fees of 16-25% of license cost
- **Total IT budget:** 55-80% spent on maintenance and operations
- **TCO over lifespan:** Maintenance accounts for 50-80% of total cost

Rule of thumb: For every \$1 spent acquiring software, budget \$3-4 to maintain it over its lifespan.

The Foundation of Complexity: Application Sprawl and Shadow IT

Application Sprawl by Size:

- **Small Business:** Estimates range from an average of 42 SaaS applications (Backlinko, 2025) to 253 (DemandSage, 2025).
- **Medium Enterprise:** Estimates range from 103 (Backlinko, 2025) to 335 (DemandSage, 2025).
- **Large Enterprise:** Estimates range from 158 (Backlinko, 2025) to 473 (DemandSage, 2025). In very large organizations, the total application count (including custom and on-prem) often exceeds 1,000.

The Shadow IT Factor:

- **Decentralized Control:** IT departments now manage only **26%** of SaaS spending, with business units controlling the majority (70%). (Source: Zylo, 2025)
- **Lack of Oversight:** An estimated **85-90%** of SaaS applications operate outside of IT oversight and control. (Source: Grip Security, 2024)
- **Future Trend:** By 2027, it is predicted that **75%** of employees will acquire, modify, or create technology outside of IT's visibility. (Source: Gartner, cited by Xensam, 2025)

The Legacy System Burden



Global annual spend

To maintain legacy systems



Average modernization

Cost per application project



Technical debt

Per 100,000 lines of code

Modernizing legacy applications requires substantial investment in both money and time, with average projects taking 16 months to complete. The cost of *not* modernizing—technical debt and operational inefficiency—is even higher.



The New Challenge: Agent Chaos

Simple Agents ≠ Autonomous Action

The barrier to creating AI agents has collapsed. Every vendor now offers agent-building tools. But this has created a **new layer of chaos**: unmanaged "Agent Sprawl."

- **Uncoordinated Execution**

Agents operating in silos without shared context

- **Governance Risks**

No centralized control or audit trails

- **Increased Brittleness**

More agents on the same failing infrastructure

The Market Need

Enterprises need an **Operating System** to orchestrate agent proliferation, provide unified context, and ensure reliable autonomy.

This Unsustainable Paradigm is Leading to the Fundamental Market Shift: From Software to Intelligence

The Legacy Model: Software Navigation (Obsolete)

- Users must navigate rigid, disconnected applications (ERP, CRM, etc.).
- Operations require manual orchestration and specialized technical expertise.
- Siloed systems create complexity and limit operational visibility.
- Value is trapped within the applications.

The New Reality: Autonomous Orchestration (Emerging)

- Users engage directly with data through natural language (Intent-driven).
- Operations are managed autonomously by multi-agent AI systems.
- A unified interface abstracts away underlying technical complexity.
- The stack is commoditized; value shifts to the intelligence layer.

The enterprise is transitioning from a software-centric model to an intelligence-centric model. This shift demands a new operating system.



Introducing autonomOS

The Operating System for the Intelligent Enterprise

autonomOS abstracts complexity from disparate enterprise systems to enable **intent-driven operations**. We are the category-defining Operating System that orchestrates operations through natural language, closing the gap from insight to autonomous execution.

Built on Top of Your Existing IT – Not Instead of It

autonomOS overlays your current systems, abstracts the complexity, and delivers unified intelligence—without replatforming, rewiring, or rip-and-replace.



Two Perspectives, One Platform

For Business Users



For Technology Leaders



- **Intent-Driven Operations:** Describe what you want; we execute the how
- **Insight-to-Action:** Analytics that prescribe and execute optimal actions
- **Autonomous Processes:** Continuous optimization of business functions

- **Light, Fast Connectivity:** Connect any data source without complex ETL
- **Freedom from Legacy Jail:** Agnostic orchestration across all systems
- **Security by Design:** No data storage—we process metadata only

autonomOS Platform (AOS) Components



Natural Language Query (NLQ)

Transform business intelligence into natural conversation. NLQ is a breakthrough conversational interface that eliminates the complexity of data analysis, empowering users to ask business questions in plain English and receive immediate, intelligent insights. It interprets user intent, presenting not only a direct answer, but also ancillary information in an easy-to-digest format.



Discover (AOD)

AOD autonomously fingerprints and catalogs your entire technology environment—spanning 100s of apps, DBs, and tools. It rapidly infers relationships and establishes connections without manual configuration (minimal HITL). This engine creates a complete, secure architectural view using metadata only, forming the foundation for autonomous orchestration.



Adaptive API Mesh (AAM)

Self-healing integration layer that monitors API health, detects schema changes, and autonomously adapts—eliminating the primary cause of automation failure.



Data Connectivity Layer (DCL)

Unified enterprise ontology mapping disparate sources into a coherent knowledge graph. Provides the contextual "brain" for intelligent decision-making.



Agentic Orchestration Architecture (AOA)

Governance engine managing agent proliferation at scale. Coordinates workflows with audit trails, HITL mechanisms, and observability for trusted autonomy.



NLQ - Natural Language Query Engine

Transform business intelligence into natural conversation. NLQ is a breakthrough conversational interface that eliminates the complexity of data analysis, empowering users to ask business questions in plain English and receive immediate, intelligent insights.

Instead of wrestling with SQL queries or navigating labyrinthine dashboards, simply type questions like "what's the margin?" or "how's pipeline looking?" and get instant answers. NLQ bridges the gap between human curiosity and data-driven decision making.

Powerful Capabilities That Make Data Accessible

Natural Language Understanding

NLQ's intelligent engine interprets casual business questions with remarkable accuracy. Whether you ask "churn?", "are we profitable", or "show me Q3 performance", the system understands context and intent without requiring precise technical terminology.

The platform supports questions across multiple business domains including Finance, Sales, Operations, and HR, making it a universal tool for enterprise-wide insights.

Dual Visualization Modes



Galaxy View

Interactive node-based visualization showing primary answers with semantically related metrics. Color-coded confidence indicators (green, yellow, red) reveal data reliability at a glance.



Text View

Structured responses with values, units, time periods, and confidence scores. Includes parsed intent for complete transparency into how your question was interpreted.



AOS Discover (AOD)

Autonomous Asset Fingerprinting

Agentless, multi-protocol scanning across the entire enterprise landscape (cloud, hybrid, and on-premise). Rapidly identifies and fingerprints applications, databases, APIs, and infrastructure components, eliminating shadow IT without manual configuration.

Dynamic Inventory & Catalog

Builds a centralized, continuously updated source-of-truth catalog for all digital assets. Automatically deduplicates entries, infers ownership, and enriches asset profiles with comprehensive infrastructure and network metadata.

Intelligent Dependency Mapping

Analyzes relationships and metadata to automatically map interdependencies and data flows between disparate systems. Creates a "digital twin" of the architecture and prioritizes integration opportunities with minimal human intervention (HITL).

Zero-Trust Discovery Model

Security by design. AOD operates strictly on configuration and network metadata; sensitive business data is never read or stored. Adheres to least-privilege access, ensuring comprehensive discovery with zero data exposure.

How AutonomOS Connects

AutonomOS does **not** connect to every application.

Instead:

01

Connect once to the integration fabric

It connects once to the **integration fabric** (e.g., MuleSoft)

02

Discover existing resources

It discovers what APIs, flows, topics, and sinks already exist

03

Consume existing outputs

It consumes **existing outputs**:

- Mulesoft, Workato etc. System APIs
- API Gateways (Kong, etc)
- Kafka / Event Hub topics
- Snowflake tables / streams

04

Unify and govern

It unifies and governs this data in DCL

 **MuleSoft keeps the keys. AutonomOS consumes the results.**

AAM Connectivity Modalities

01

Control-Plane Attachment

Read-only visibility into APIs, integrations, ownership, environments

03

Passive Subscription to Existing Sinks

Kafka topics, Event Hub, Snowflake tables/streams

02

Declared Interface Consumption

Mulesoft System APIs or enterprise-approved APIs

04

Minimal Tee (Explicit Enablement)

One additional sink added to an existing integration flow

- ❑ No other modalities scale in enterprises.

DCL Engine: Unified Data Intelligence

DCL answers one question: 'What does this field mean to the business?' It's a semantic translator that takes cryptic field names (KUNNR, acct_id, cust_rev_ytd), maps them to business concepts (Account, Revenue), and shows who in the business uses each concept.



Cryptic Fields

Raw data fields from source systems.

Business Concepts

Mapped to meaningful business terms.



Persona Views

Relevant insights for specific roles.

Auto-Discovery

Finds schemas across source systems automatically.

AI-Powered Mapping

Near-perfect accuracy matching fields to business concepts.

Real-Time Visualization

Interactive Sankey diagram shows data flow instantly.

Persona Views

CFO, CRO, COO, CTO see what matters to them.

Intelligent Learning

DCL learns from every mapping decision:

- Low confidence? AI validates
- GL_ACCOUNT → "general_ledger"
- MRR → "revenue" ✓

Continuous learning improves accuracy over time

Zero-Trust Security

DCL never stores your data. Ever.

Stores: Schema metadata, mapping decisions, pointers

Never stores: Row data, customer records, actual payloads

Prebuilt Domain Agents



RevOps Agent

Optimizes revenue operations by analyzing pipeline health, identifying conversion opportunities, and automating deal routing. Syncs sales, marketing, and customer success data for unified visibility.



FinOps Agent

Monitors spending, forecasts budgets, and recommends cost optimizations. Automates invoice processing, expense approvals, and financial reporting workflows across systems.



HR Ops Agent

Streamlines recruiting, onboarding, and performance management. Analyzes employee data to predict retention risks and suggest engagement improvements.



CXOps Agent

Enhances customer experience through sentiment analysis, support ticket prioritization, and proactive issue resolution. Coordinates responses across support channels.



Custom Agents

Build specialized agents tailored to your unique business processes. Leverage our agent framework to codify domain expertise and automate complex workflows.

From Insights to Automated Actions



Live Dashboards

Real-time visualization of key metrics across all connected systems. Customizable views for different roles and teams.



AI Recommendations

Contextual suggestions based on pattern recognition and predictive analytics. Learn from outcomes to improve over time.



Workflow Execution

Trigger actions automatically based on conditions and business rules. No-code workflow builder for business users.

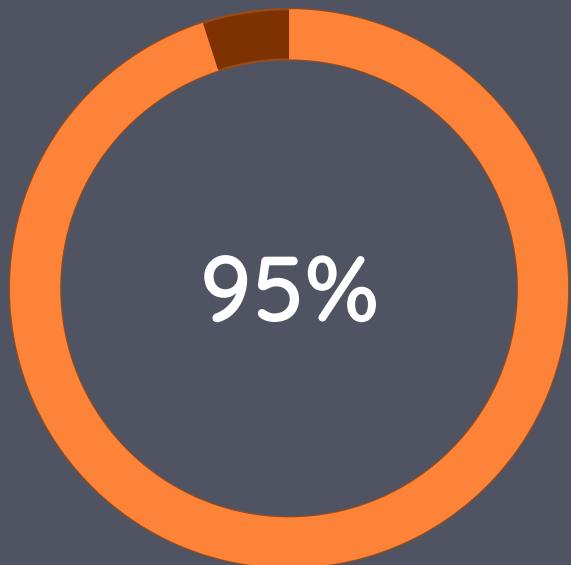


Decisions Deployed

Changes propagate instantly across all connected systems. Complete audit trail of what changed, why, and when.

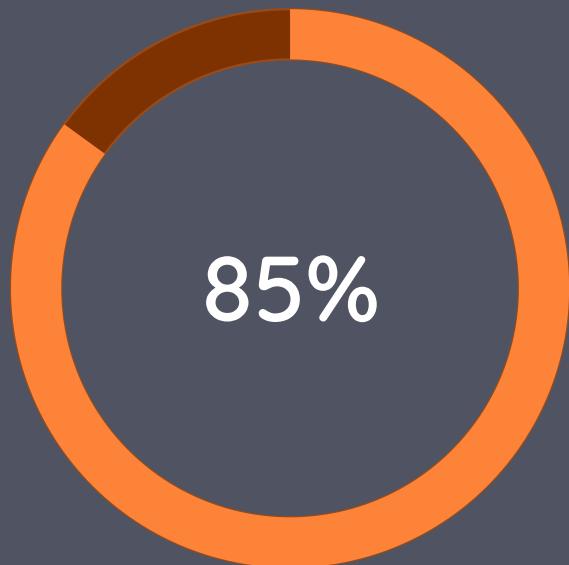


Why 95% of AI Projects Fail to Achieve ROI



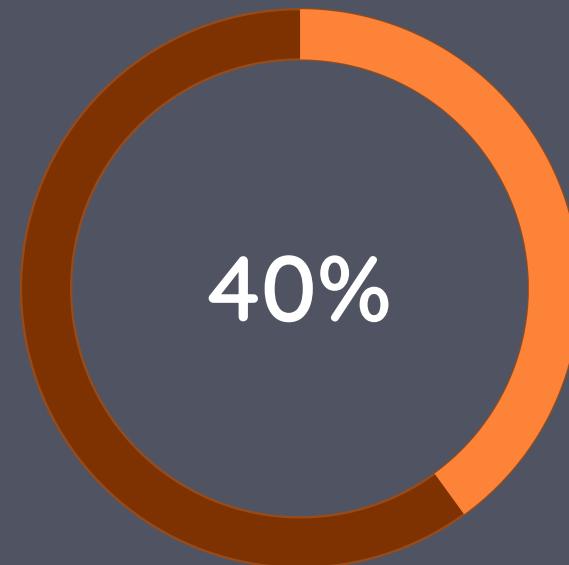
Technology-First Failure

Projects that ignore business processes and start with tech selection



Data Quality Issues

Derailed by poor or irrelevant data that teaches models the wrong lessons



Last-Mile Abandonment

Great technology fails when adoption and integration aren't owned

Our Approach: Operating in the 5%



Business-Process First

We map every solution to your operating reality and KPIs *before* touching a model. Strategy drives technology, not the reverse.



Domain Expertise

Our process experts validate, cleanse, and contextualize data so models learn the right lessons from day one—eliminating bias and brittleness.



Last-Mile Engineering

Field Deployment Engineers (FDEs) drive adoption through user training, workflow integration, and measurable change management.

This integrated approach—**Technology + Expertise**—ensures we deliver the “last mile” of implementation with measurable results.

What This Means for You

Clarity



Direct linkage from initiative to KPI to model behavior to measurable outcomes. No black boxes.

Confidence



Higher-fidelity data pipelines with guardrails that reduce bias and brittleness from the start.

Trust & Adoption



People actually use the solution because it fits how work gets done—not the other way around.

Don't Worry About Your Messy Data

We Connect. We
Contextualize. We Execute.

autonomOS is purpose-built to thrive in the reality of enterprise technology: legacy systems, data silos, and constant change. Our light, fast, secure connectivity—combined with unified intelligence and massive orchestration—enables outcome-based automation at scale.

Ready to close your **Insight-to-Action Gap**? Let's build the intelligent enterprise together.

[Schedule a Demo](#)

[Download White Paper](#)

autonomOS: From Insight to Action, Instantly

We connect your enterprise's brain to its hands, creating a system that doesn't just know, but does.

01

Connect to Anything:

Our universal Data Connectivity Layer (DCL) plugs into any of your systems in real-time. We don't care if it's a modern cloud app, a legacy ERP, or a 30-year-old mainframe.

02

Forget Legacy Headaches:

You do not need to rip-and-replace or spend millions refactoring old systems. Our platform acts as a universal translator, abstracting away the complexity so you can focus on the outcome.

03

Reason Intelligently:

Domain-specific AI agents analyze this live data, understand your business context, and recommend specific, high-value actions.

04

Act Autonomously:

With your approval (or fully autonomously), the system executes those actions across your applications, closing the loop from insight to outcome.