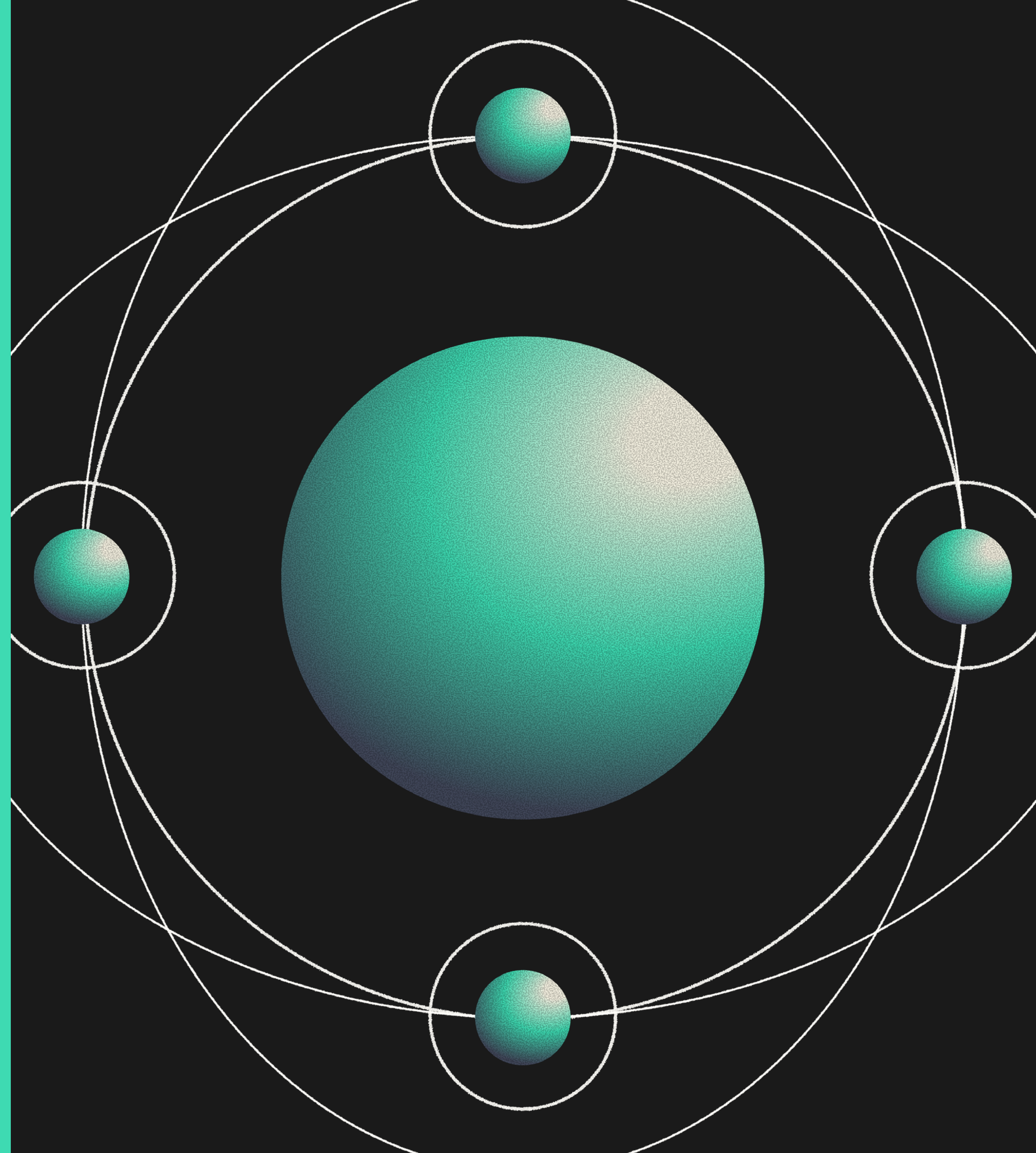




The ultimate guide to *AI agent* use cases

Choosing impactful AI agent use cases
for your business

DATAIKU GUIDE



Beyond the Buzz: AI Agents That Drive Real ROI

SELECTING THE MOST IMPACTFUL AGENT USE CASES

The key to unlocking value with AI agents? Selecting the right use cases. But, with hundreds of inefficient processes, repetitive tasks, and opportunities for agents within the average business, how do you know where to allocate your resources?

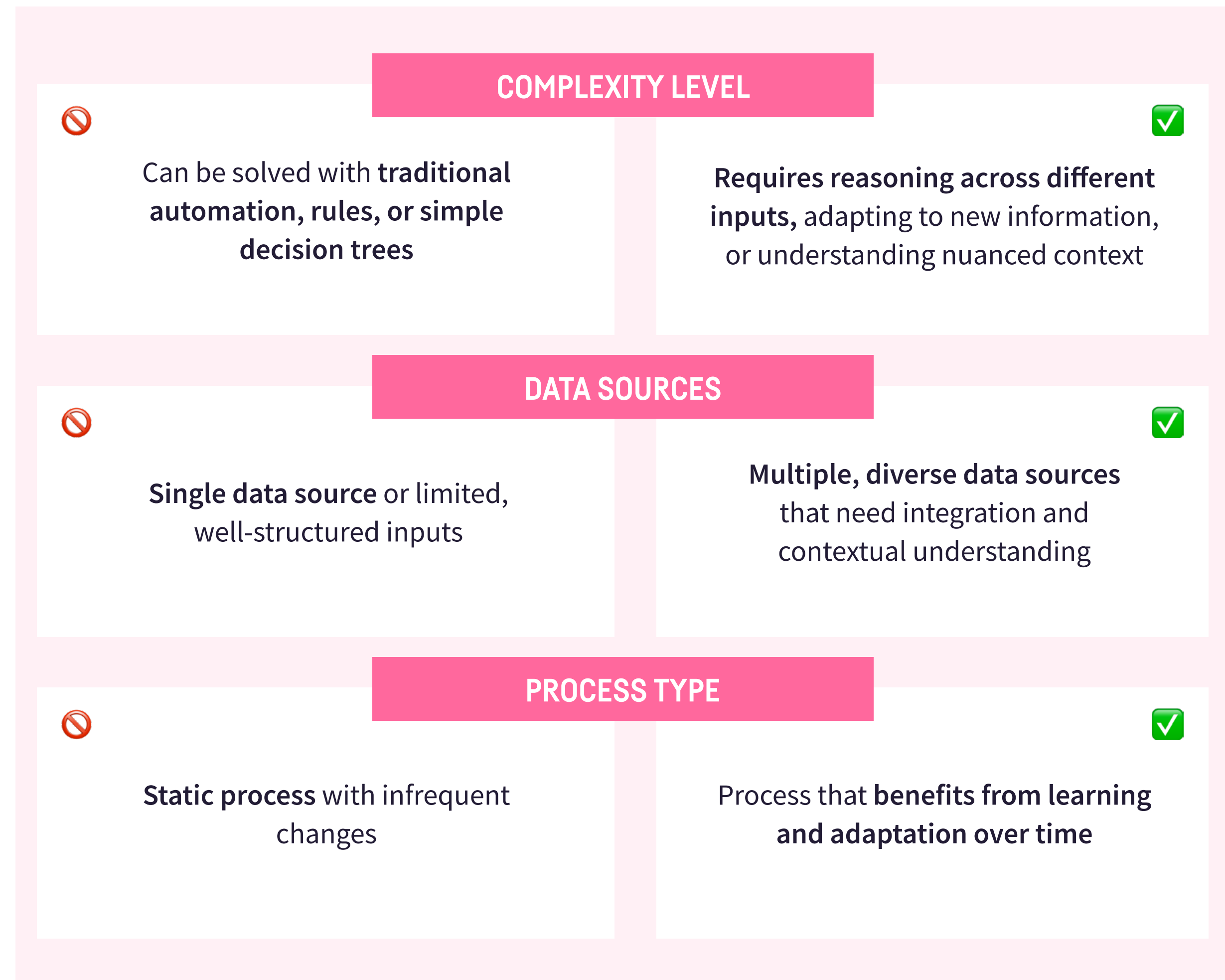
This guide dives deep into the framework you need to select impactful AI agent use cases and provides a library of Dataiku use cases to inspire your agentic journey.

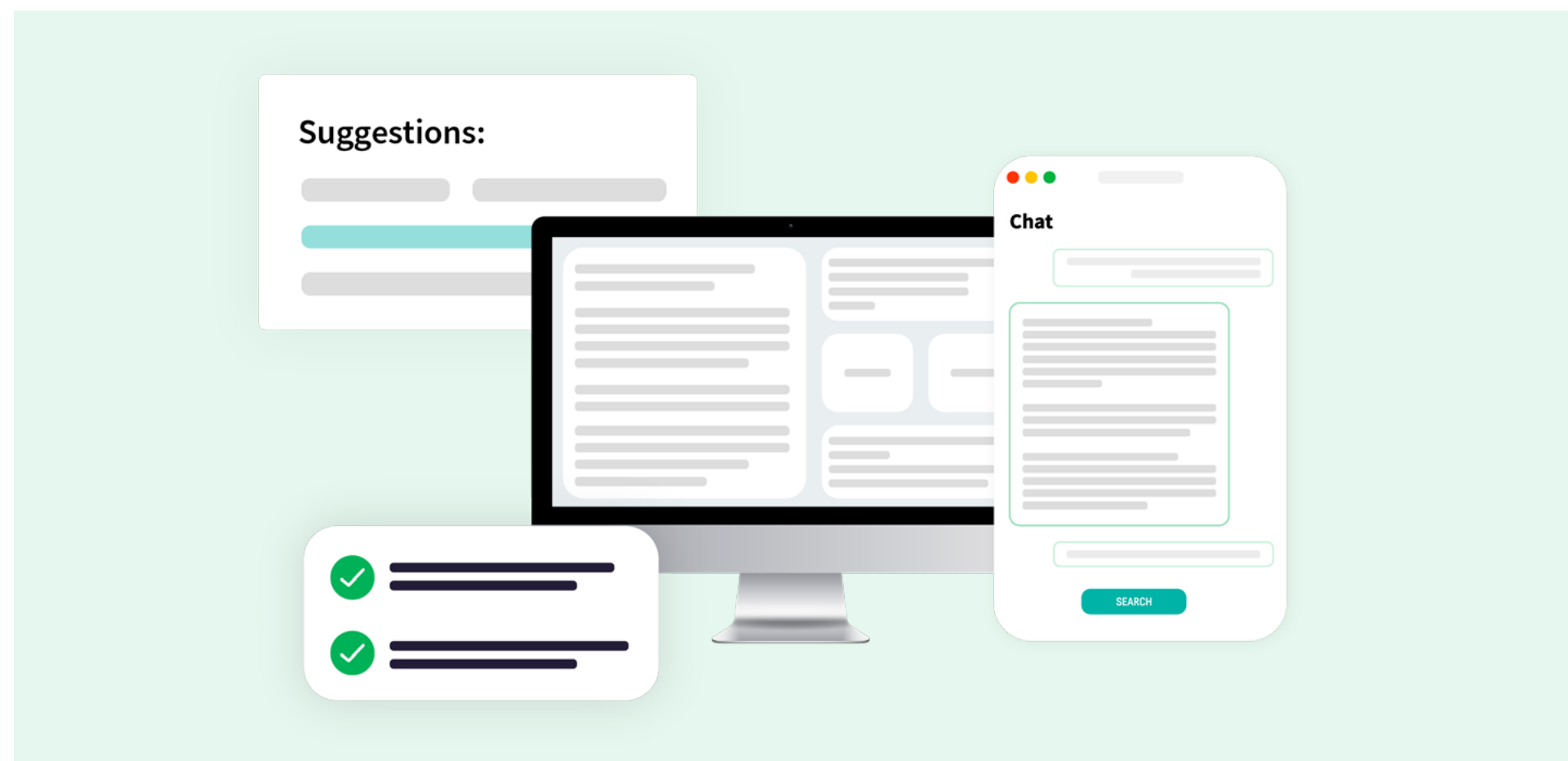
Dataiku — The Universal AI Platform™ — empowers your organization to build AI agents using minimal code so that you can focus on what matters most: delivering tangible business outcomes.



So, Do I Need An Agent?

Not every business problem requires an AI agent. Before investing resources, determine if an agent is the right solution with these clear criteria.





REAL-WORLD EXAMPLES

Agents excel when facing judgment calls, variable conditions, and information synthesis — tasks that traditionally required human intelligence to execute effectively.

No agent needed:

- Automated report generation with fixed templates and data sources
- Rule-based customer segmentation for marketing campaigns
- Simple data transformations with established logic

Agent needed:

- Customer support that requires ticket prioritization and questions vary widely, requiring searching multiple knowledge bases
- Research synthesis that requires analyzing documents, extracting relevant insights, and taking action to log important insights
- Decision-making processes that require balancing multiple competing factors



Ace Your Use Case

DATAIKU'S FRAMEWORK FOR SELECTING IMPACTFUL AI AGENT USE CASES

Success with AI agents hinges on your understanding of business challenges and knowing when an AI agent use case makes sense. The following framework, crafted from extensive enterprise implementation experience, guides you through identifying, evaluating, and prioritizing use cases where agents will deliver the utmost business impact:



STEP 1:

START WITH BUSINESS CHALLENGES

Identify departmental
pain points:

- Where are processes cumbersome or time-consuming?
- Which teams face information overload or access barriers?
- What critical decisions are delayed by manual information gathering?

Look for knowledge
worker constraints:

- Which specialized employees spend significant time on repetitive tasks?
- Where are high-value employees spending their energy on low-value work?
- What tasks require access to multiple systems that slow people down?

Spot decision support gaps:

- Where do employees lack comprehensive information needed for decisions?
- Which areas pose the highest risk due to incomplete or delayed information?
- What processes suffer from information silos?



Action item: Run a workshop with team leads to map these challenges. Use a simple table format to capture pain points, affected teams, and estimated impact.



STEP 2:

MAP CHALLENGES TO AGENT CATEGORIES

Once you've identified key challenges, determine which type of agent solution would best address them:

1. Process Automation Agents:

Automate multi-step processes that traditionally require human intervention across multiple systems, ideal when:

- Processes span multiple applications or data sources
- Steps require some judgment but follow recognizable patterns
- Analysts need low-/no-code options to build solutions

2. Worker Augmentation Agents:

*AI assistants that accelerate specific tasks
under human supervision, ideal when:*

- Knowledge workers need to perform time-consuming analysis
- Tasks require connecting to various systems while keeping humans in control
- Activities are high-value but consume disproportionate time

3. Enterprise Intelligence Agents:

*Connected knowledge infrastructure
beyond traditional retrieval systems, ideal
when:*

- You need to create comprehensive access to enterprise knowledge
- Traditional search fails to deliver contextual understanding
- Users need information synthesis across documents and databases



Action item: For each business challenge identified in Step 1, determine which category fits best. Focus on areas where pain is highest and potential ROI is clear.



STEP 3: EVALUATE TECHNICAL READINESS

Before proceeding, assess your organization's technical foundation:

Data accessibility checklist:

- Is the relevant data digitized and accessible?
- Does your team have permission to access necessary systems?
- Can data be integrated without major structural changes?

Process documentation status:

- Are current processes well-documented and understood?
- Is there clarity about desired outcomes and performance metrics?
- Have you identified subject matter experts to guide implementation?

Governance requirements:

- What compliance considerations apply to this use case?
- Are there security or privacy restrictions to address?
- How will you monitor and evaluate performance?



Action item: Score each potential use case on technical readiness (High/Medium/Low). Eliminate or defer any use cases with critical technical barriers.



STEP 4: PRIORITIZE IMPACT

Final selection should balance potential value against implementation complexity:

Evaluation Criteria	Questions to Ask
ROI Potential	• How much time will this save? • What revenue or cost impact might result? • Will this reduce risk or improve quality?
Implementation Complexity	• Are all required data sources accessible? • How much customization is needed? • What integration challenges might arise?
User Readiness	• Are end users comfortable with AI solutions? • How much change management will be required? • Are executives supportive?



Action item: Create a simple 2x2 matrix plotting "Value Potential" against "Implementation Ease" to identify quick wins (high value, easy implementation) versus strategic investments (high value, more complex).



STEP 5:

CHOOSE ONE AND SCALE FAST

Rather than attempting multiple agent projects simultaneously:

Select *one* high-impact, technically feasible use case.

Establish clear success metrics before beginning.

Implement with a small, cross-functional team.

Measure results and document lessons learned.

Scale gradually to similar use cases once proven.



Action item: Create an implementation roadmap for your selected use case with specific milestones, responsible parties, and a timeline for delivery and evaluation.





Inspirational Use Case Library

IT'S TIME TO TAKE YOUR FIRST STEP INTO THE WORLD OF AI AGENTS

With countless potential AI agent applications, it's easy to get overwhelmed when deciding where to start. Dataiku makes implementation straightforward, allowing you to build sophisticated agents directly within a unified, governed environment. The following examples span different departments but share a common thread: They tackle knowledge-intensive processes, augment human expertise with data-driven insights, and integrate seamlessly with existing workflows.

Dataiku provides everything you need from visual and code-based agent building tools to built-in governance controls to the Dataiku LLM Mesh for genAI cost control, quality control, and security. What agents will you build with Dataiku?



IT Support Ticket Manager Agent

INDUSTRY AGNOSTIC

PROCESS AUTOMATION

IMPLEMENTATION COMPLEXITY:

LOW

PERFECT FOR: IT departments, customer service centers, internal help desks

BUSINESS CHALLENGE: IT support teams process dozens of tickets daily with varying complexity. Many tickets are similar to previously resolved issues, but the current workflow doesn't leverage this institutional knowledge efficiently.

TECHNICAL REQUIREMENTS: Ticketing system API access, historical ticket database



HOW IT WORKS:

- Parses incoming tickets from multiple channels (email, Slack, support portal)
- Compares against knowledge base of resolved tickets using semantic search
- For resolvable tickets, drafts responses for IT approval before sending
- For complex tickets, routes to appropriate specialists with relevant context



ARCHITECTURE:

CORE COMPONENTS:

Vector database of resolved tickets, LLM for similarity matching and response generation

INTEGRATION POINTS:

Ticketing system (e.g., Freshdesk, ServiceNow), knowledge base/documentation

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **AI Agent Builder** to create IT support agent(s) using visual interface and/or code
- **Knowledge Bank Search Tool** to search for relevant documents in a knowledge bank of resolved tickets and documentation
- **Safe Guard** for Publicly Identifiable Information (PII) detection
- **Jira** or **ServiceNow Issue Tools** to create tickets directly in your existing IT system
- **Visual Trace Explorer** to audit and debug agent actions



Invoicing/Billing Processor Agent

INDUSTRY AGNOSTIC

PROCESS AUTOMATION

IMPLEMENTATION COMPLEXITY:

MEDIUM

PERFECT FOR: Finance departments, accounts receivable teams, collection agencies

BUSINESS CHALLENGE: Invoice managers struggling to prioritize thousands of unpaid invoices with limited visibility into which ones deserve immediate attention.

TECHNICAL REQUIREMENTS: Digital invoice storage, payment system access, banking transaction data, customer payment history



HOW IT WORKS:

- Agent analyzes unpaid invoices and prioritizes based on amount, payment terms, and vendor relationship
- Automatically classifies invoices and extracts key data points
- Recommends payment strategies based on historical patterns
- Updates CRM with latest status and prepares communication with vendors



ARCHITECTURE:

CORE COMPONENTS:

Invoice classification model, payment history database, priority scoring algorithm

INTEGRATION POINTS:

Accounting system, CRM, banking platform

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **AI Agent Builder** to create invoicing/billing agent(s) using visual interface and/or code
- **Dataset Lookup Tool** to search for records within payment history, client data, and invoice datasets
- **Dataset Append Tool** to automatically update CRM systems and invoice status tracking with latest actions and comments
- **Lookup Salesforce Account Tool** to look up Salesforce account information by name to get client relationship data and payment history
- **LLM Mesh Query** to generate customized follow-up emails and communications based on client payment patterns and priority levels
- **Visual Trace Explorer** to audit invoice processing workflows



Maintenance Scheduling Assistant Agent

MANUFACTURING

WORKER AUGMENTATION

IMPLEMENTATION COMPLEXITY:

MEDIUM/HIGH

PERFECT FOR: Manufacturing facilities, utility companies, property management firms

BUSINESS CHALLENGE: Maintenance managers juggling equipment reliability, technician availability, production schedules, and unexpected breakdowns — often with competing priorities.

TECHNICAL REQUIREMENTS: Equipment monitoring data, maintenance history, production scheduling system, technician availability data



HOW IT WORKS:

- Monitors equipment status using predictive maintenance models
- Dynamically adjusts maintenance schedules based on production priorities
- Suggests optimal maintenance windows that minimize downtime
- Coordinates technician assignments based on skills and availability



ARCHITECTURE:

CORE COMPONENTS:

Predictive maintenance models, optimization engine for scheduling

INTEGRATION POINTS:

Equipment sensor data, maintenance history database, production scheduling system

POTENTIAL AGENTIC FEATURES IN DATAKU:

- **AI Agent Builder** to create maintenance scheduling agent(s) using visual interface and/or code
- **Dataset Lookup Tool** to search maintenance history, equipment data, and technician availability records and inform scheduling decisions
- **Dataset Append Tool** to update maintenance schedules and work orders with new assignments and status changes
- **Model Predict Tool** to leverage predictive maintenance models and RUL estimation
- **Agent Connect** to act as a single conversational entry point for all agentic components to collaborate



Personalized Sales Assistant Agent

RETAIL & CONSUMER PACKAGED GOODS

WORKER AUGMENTATION

IMPLEMENTATION COMPLEXITY:

MEDIUM

PERFECT FOR: Retail chains, regional sales teams, e-commerce operations

BUSINESS CHALLENGE: Regional sales managers struggling to optimize pricing, inventory, and promotions across dozens of stores, each with unique customer demographics and buying patterns.

TECHNICAL REQUIREMENTS: Store-level sales data, inventory tracking, customer database



HOW IT WORKS:

- Agent analyzes unpaid invoices and prioritizes based on amount, payment terms, and vendor relationship
- Automatically classifies invoices and extracts key data points
- Recommends payment strategies based on historical patterns
- Updates CRM with latest status and prepares communication with vendors



ARCHITECTURE:

CORE COMPONENTS:

Customer segmentation models, demand forecasting, price optimization

INTEGRATION POINTS:

Point-of-sale systems, inventory database, customer profiles, alert system

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **AI Agent Builder** to create sales assistant agent(s) using visual interface and/or code
- **Model Predict Tool** to leverage existing Demand Forecast, Product Recommendation, and Markdown models for pricing and inventory optimization
- **Agent Connect** for a single conversational interface for managers to interact with agents and analytics
- **Dataset Lookup Tool** to search across centralized store data, inventory levels, and customer segmentation information
- **Dataset Append Tool** to update inventory systems and trigger logistics commands based on agent recommendations
- **SQL Question Answering Tool** to translate natural language into SQL
- **LLM Mesh Query** to generate personalized marketing emails and communications based on customer preferences and behavior



Clinical Trial Intelligence Agent

HEALTHCARE/LIFE SCIENCES/PHARMA

ENTERPRISE INTELLIGENCE

IMPLEMENTATION COMPLEXITY:

HIGH

PERFECT FOR: Pharmaceutical companies, contract research organizations, biotech firms

BUSINESS CHALLENGE: Clinical Operations teams spending months manually screening and selecting clinical sites and investigators for trials, often with incomplete information and little visibility into past performance.

TECHNICAL REQUIREMENTS: Access to public trial databases, historical trial performance metrics, scientific publication databases



HOW IT WORKS:

- Searches across clinical trial databases, research publications, and internal records
- Identifies potential trial sites based on historical performance, patient demographics, and site capabilities
- Evaluates principal investigators by research history, patient recruitment rates, and quality metrics
- Generates comprehensive site selection reports with supporting evidence



ARCHITECTURE:

CORE COMPONENTS:

Clinical site intelligence database, social determinants of health analytics

INTEGRATION POINTS:

OpenPayment API Call, ClinicalTrial.gov API Call, internal trial performance records

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **AI Agent Builder** to create clinical intelligence agent(s) using visual interface and/or code
- **Knowledge Bank Search Tool** to search for relevant documents across clinical trial databases and research publications using semantic search
- **SQL Question Answering Tool** to enable dynamic SQL queries against Clinical Site Intelligence and Social Determinants of Health datasets
- **Pre-built tools** for retrieval-augmented generation (RAG) to enable semantic search and document retrieval across clinical publications and trial databases
- **Agent Connect** for a single conversational entry point for the clinical study analytics agent to orchestrate multiple specialized agents
- **LLM Mesh Query** to generate customized summary report emails for stakeholders



Regulatory Compliance Navigator Agent

INDUSTRY AGNOSTIC

ENTERPRISE INTELLIGENCE

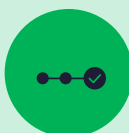
IMPLEMENTATION COMPLEXITY:

MEDIUM/HIGH

PERFECT FOR: Legal departments, compliance teams, regulated industries (finance, healthcare, energy)

BUSINESS CHALLENGE: Organizations struggle to stay current with evolving regulations across multiple jurisdictions, creating risk of non-compliance and missed opportunities.

TECHNICAL REQUIREMENTS: Access to regulatory databases, structured internal policy documentation



HOW IT WORKS:

- Continually monitors regulatory changes across selected jurisdictions
- Analyzes company policies against new requirements to identify compliance gaps
- Evaluates business impact of regulatory changes and prioritizes action items
- Generates customized compliance roadmaps with implementation timelines



ARCHITECTURE:

CORE COMPONENTS:

Regulatory document database, policy matching algorithm, impact assessment framework

INTEGRATION POINTS:

Regulatory databases, internal policy repository, compliance tracking systems

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **AI Agent Builder** to create compliance monitoring agent(s) using visual interface and/or code
- **Google Search Tool** to continually monitor regulatory changes across selected jurisdictions by searching the web for new regulations and updates
- **Knowledge Bank Search Tool** to search internal policy repository and regulatory document database to identify compliance gaps
- **Pre-built tools** for retrieval-augmented generation (RAG) to analyze company policies against new requirements using document processing and semantic search
- **Model Predict Tool** to leverage ML models for impact assessment framework to evaluate business impact and prioritize regulatory changes



Supply Chain Resilience Agent

MANUFACTURING

WORKER AUGMENTATION

IMPLEMENTATION COMPLEXITY:

HIGH

PERFECT FOR: Manufacturing operations, logistics companies, retailers

BUSINESS CHALLENGE: Supply chain disruptions have become increasingly common and costly, yet many organizations lack the ability to quickly assess vulnerabilities and develop mitigation strategies.

TECHNICAL REQUIREMENTS: Supply chain data from ERP systems, supplier performance metrics, logistics tracking data



HOW IT WORKS:

- Continuously monitors global events, supplier health, and logistics data
- Identifies potential disruption risks and maps impact to specific products and operations
- Recommends mitigation strategies based on alternative suppliers, inventory buffers, or production adjustments
- Simulates disruption scenarios to help planners prepare contingency plans



ARCHITECTURE:

CORE COMPONENTS:

Risk monitoring system, supply chain mapping, scenario simulation engine

INTEGRATION POINTS:

ERP systems, supplier databases, logistics tracking platforms, news and event monitoring services

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **Visual Agent Builder** or **Code Agent Builder** to create supply chain monitoring agent(s) depending on implementation complexity
- **Google Search Tool** to continuously monitor global events and news for potential supply chain disruptions
- **Dataset Lookup Tool** to search across ERP systems, supplier databases, and logistics tracking data to assess vulnerabilities
- **Model Predict Tool** to leverage ML models for risk assessment and scenario simulation to predict disruption impacts
- **Dataset Append Tool** to update supply chain tracking systems with risk assessments and mitigation recommendations



Client Relationship Intelligence Agent

FINANCIAL SERVICES

WORKER AUGMENTATION

IMPLEMENTATION COMPLEXITY:

MEDIUM/HIGH

PERFECT FOR: Financial services, wealth management firms, investment banks, insurance companies

BUSINESS CHALLENGE: Relationship managers struggle with scattered client data across multiple systems, making it difficult to identify engagement opportunities, prioritize outreach, and provide personalized service at scale.

TECHNICAL REQUIREMENTS: CRM system integration, trading platform data access, market data feeds, client communication archives



HOW IT WORKS:

- Integrates data from trading platforms, CRM systems, market feeds, and client communications
- Identifies significant shifts in client behavior and investment patterns requiring attention
- Prioritizes client engagement opportunities based on urgency and potential value
- Provides relationship managers with contextual talking points and recommended next action



ARCHITECTURE:

CORE COMPONENTS:

Client behavior analytics, market signal monitoring, engagement recommendation engine

INTEGRATION POINTS:

CRM systems, trading platforms, market data providers, communication systems, compliance monitoring tools

POTENTIAL AGENTIC FEATURES IN DATAIKU:

- **Visual Agent Builder** or **Code Agent Builder** to create client intelligence agent(s) depending on technical requirements and customization needs
- **Dataset Lookup Tool** to search across trading platforms, CRM systems, and client communication archives to identify behavioral shifts
- **Dataset Append Tool** to update CRM systems with engagement actions, talking points, and interaction outcomes for continuous learning
- **Lookup Salesforce Account Tool** to integrate with CRM systems to access client relationship data and interaction history
- **Agent Connect** for a single conversational interface for relationship managers to access comprehensive client insights and recommendations
- **LLM Mesh Query** to generate customized customer summaries and recommended conversation topics
- **Create Google Calendar Event Tool** to seamlessly schedule follow-up meetings with high-priority clients based on engagement recommendations



The Cost of Waiting

WHY EARLY ADOPTION CREATES LASTING COMPETITIVE ADVANTAGE



The business landscape is dividing into two categories: those leveraging AI agents to transform operations and those falling behind. While selecting the right use case requires careful consideration, the biggest risk isn't making the wrong choice — it's making no choice at all.

Every day without action means:

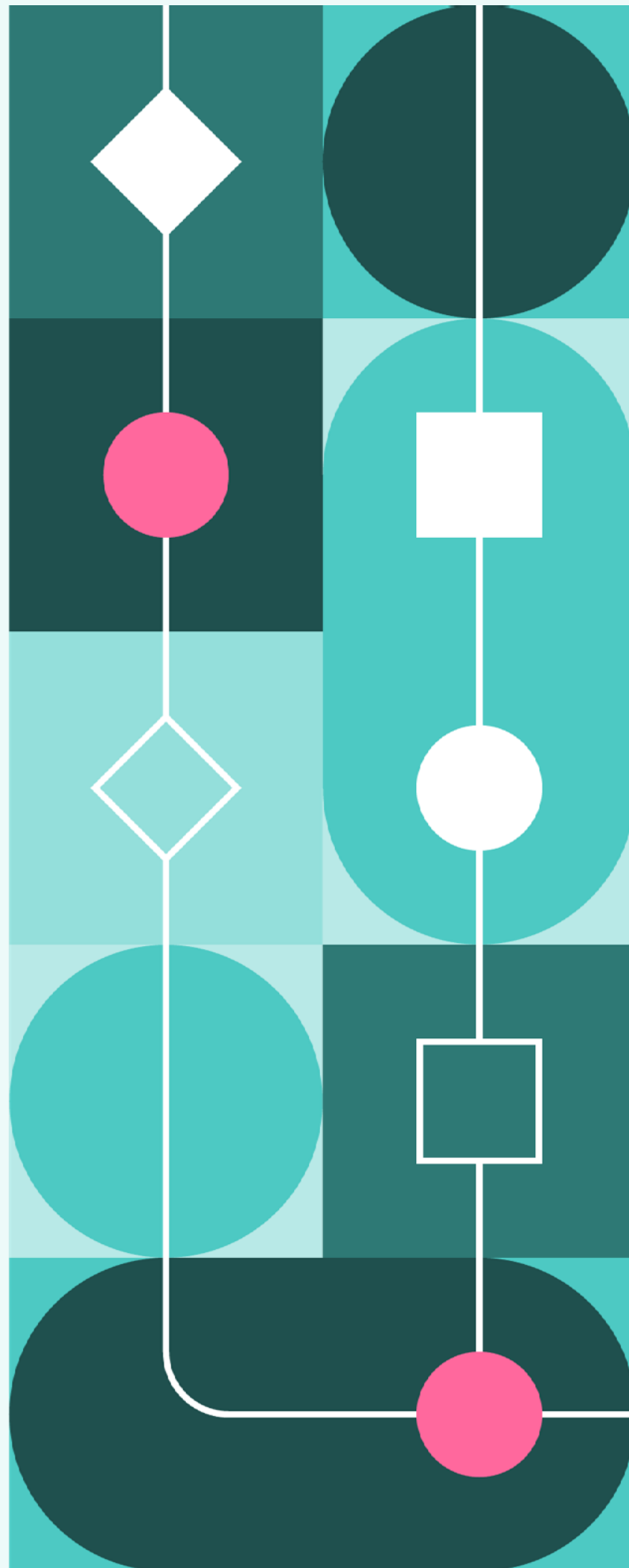
- Continued inefficiency in processes that could be streamlined
- Knowledge workers spending valuable time on tasks an agent could handle
- Competitors outpacing you in operational efficiency

These AI agents don't replace your workforce; they amplify human capabilities by eliminating repetitive tasks. They free your IT team to solve complex problems instead of resetting passwords. They give your sales managers instant insights instead of waiting for monthly reports. They help your clinical researchers make data-driven decisions in minutes instead of weeks.

The AI agent revolution isn't on the horizon — it's already here. The question isn't whether agents will transform your business, but whether you'll be leading that transformation or catching up.

Your business isn't generic. Your AI agents shouldn't be either.





Let's Build

Ready to explore how Dataiku can help you implement your first AI agent? Learn more about our platform capabilities, implementation strategies, and success stories to accelerate your AI agent journey.

DISCOVER AI AGENTS WITH DATAIKU

