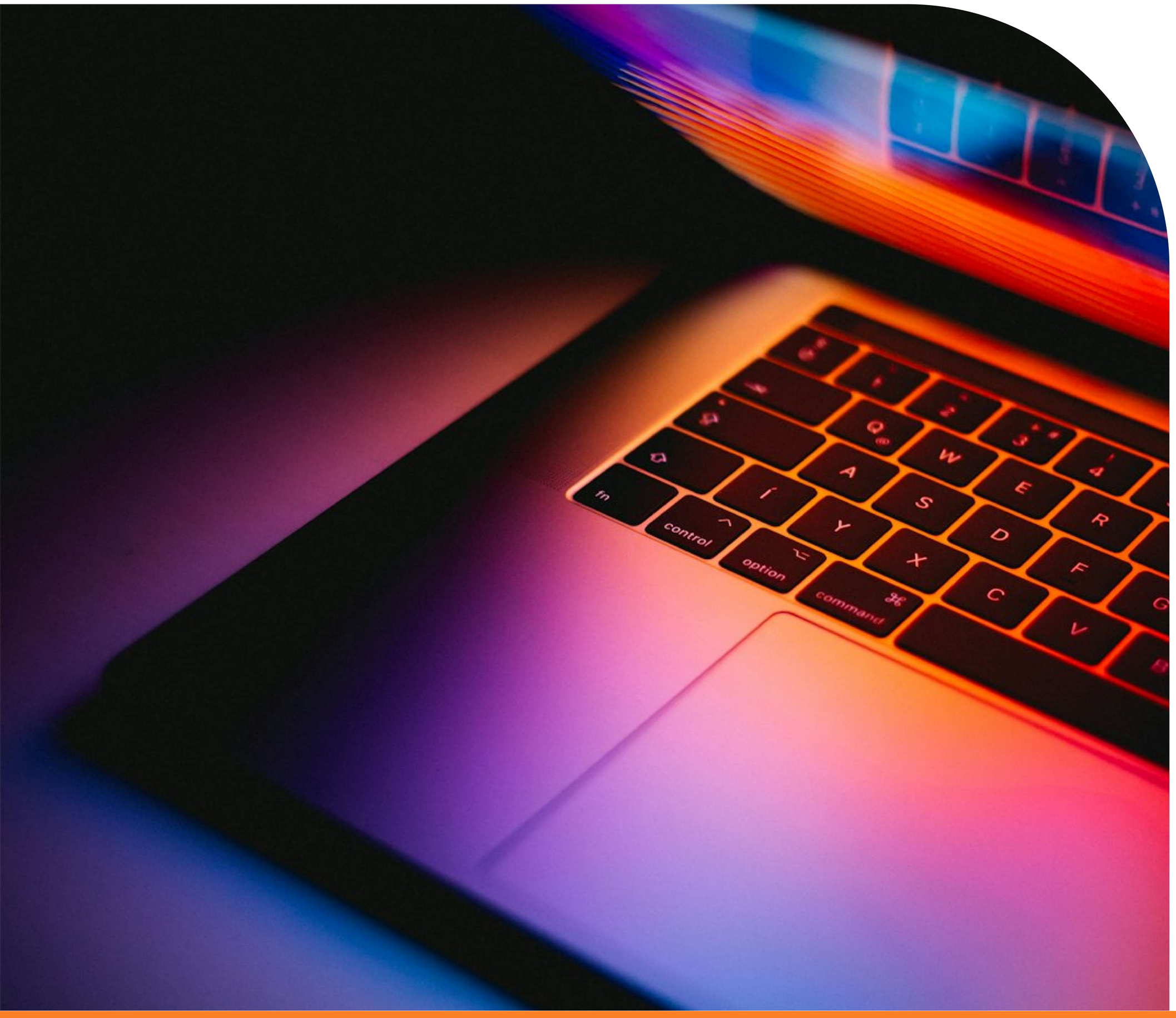
TECHNICAL BRIEF

BizTalk to TIBCO

AI Assisted Modernization



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INTRODUCTION

Purpose

This technical brief presents Behaim IT Solutions' approach for migrating an organization's integration platform from Microsoft BizTalk Server to TIBCO BusinessWorks (BW) and TIBCO BusinessConnect Container Edition (BCCE). It outlines migration strategies, maps BizTalk components to their TIBCO equivalents, and provides effort estimates and recommendations for a phased transition.

Scope

The scope of this document covers the migration of the organization's existing BizTalk Server integration infrastructure, including orchestrations, messaging pipelines, adapters, schemas, maps, business rules, and B2B trading partner configurations. The migration targets are:

- TIBCO BusinessWorks (BW) — core integration engine for internal system integration, data transformation, and process orchestration
- TIBCO BusinessConnect Container Edition (BCCE) — B2B gateway for trading partner communication, EDI document exchange (X12, EDIFACT), and protocol handling (AS2, SFTP)
- TIBCO Enterprise Message Service (EMS) — messaging infrastructure supporting both BW and BCCE

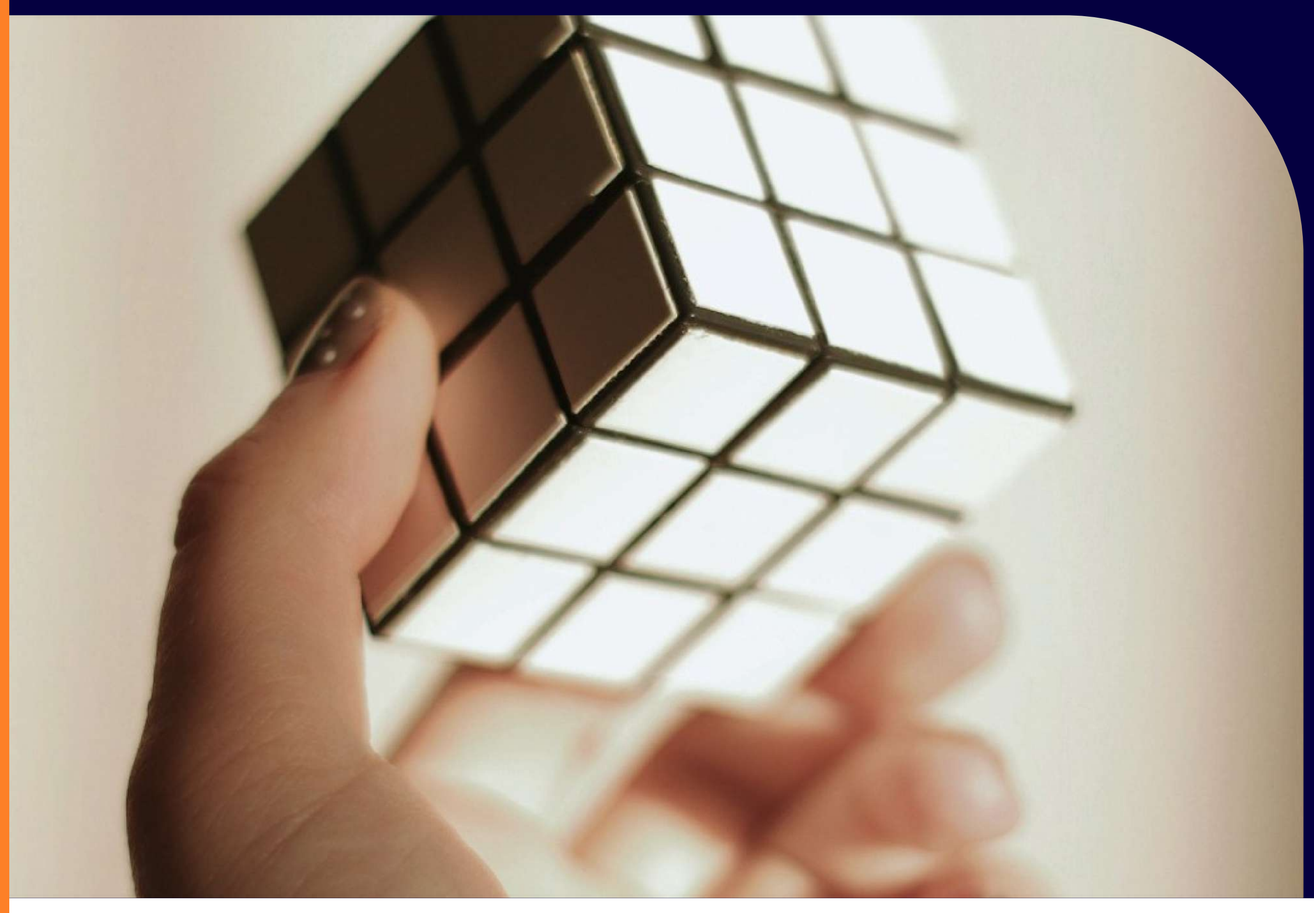
Out of scope for this document are application-level changes to upstream and downstream systems that interface with the integration layer, unless those changes are a direct consequence of the platform migration.

Background

Microsoft BizTalk Server has served as a reliable enterprise integration platform for many organizations over the past two decades. However, Microsoft has signaled the end-of-life trajectory for BizTalk Server, with mainstream support for BizTalk Server 2020 ending in 2028 and extended support concluding in 2030. Organizations relying on BizTalk face a strategic decision: migrate to a modern integration platform or risk operating on unsupported infrastructure.

Many organizations run BizTalk on Virtual Machines, on-premises or in a cloud environment such as Microsoft Azure, a familiar yet traditional deployment model. The migration to TIBCO targets a modern containerized architecture in a Kubernetes-based environment (Azure Kubernetes Service, Amazon EKS, Google GKE, or equivalent), providing improved scalability, resilience, and operational efficiency. TIBCO BusinessWorks is a mature integration platform with broad protocol support and flexible deployment options spanning on-premises, cloud, and containerized environments. TIBCO BusinessConnect Container Edition provides purpose-built B2B capabilities for trading partner relationships, EDI document translation, and secure document exchange over industry-standard protocols. Together, they cover the full scope of BizTalk's integration and B2B functionality while offering modern containerized deployment and continued vendor support.

SOLUTION OVERVIEW



The target architecture centers on TIBCO's containerized product suite deployed in a Kubernetes-based environment, replacing the VM-based BizTalk Server with a scalable, resilient platform that cleanly separates internal integration workflows from B2B trading partner communications.

TIBCO BusinessWorks Container Edition

serves as the core integration engine, orchestrating data flows between internal systems. BWCE processes replace BizTalk orchestrations and pipelines, handling message routing, transformation, enrichment, and business logic. Applications run as containerized microservices, enabling independent scaling and deployment of integration flows.

TIBCO BusinessConnect Container Edition (BCCE)

provides specialized B2B capabilities for managing external trading partner relationships. BCCE handles EDI document translation (X12, EDIFACT), secure transport protocols (AS2, SFTP), partner configuration, agreement management, and compliance tracking. This replaces BizTalk's party management, EDI pipelines, and AS2 adapter functionality.

TIBCO Enterprise Message Service (EMS)

functions as the messaging backbone, providing reliable asynchronous communication between BWCE and BCCE. EMS delivers JMS-compliant messaging with guaranteed delivery, message persistence, and pub-sub capabilities supporting both request-reply and fire-and-forget patterns while enabling decoupled communication between components.

The architecture diagram below shows the flow from external trading partners through BCCE and EMS to the organization's core business systems.

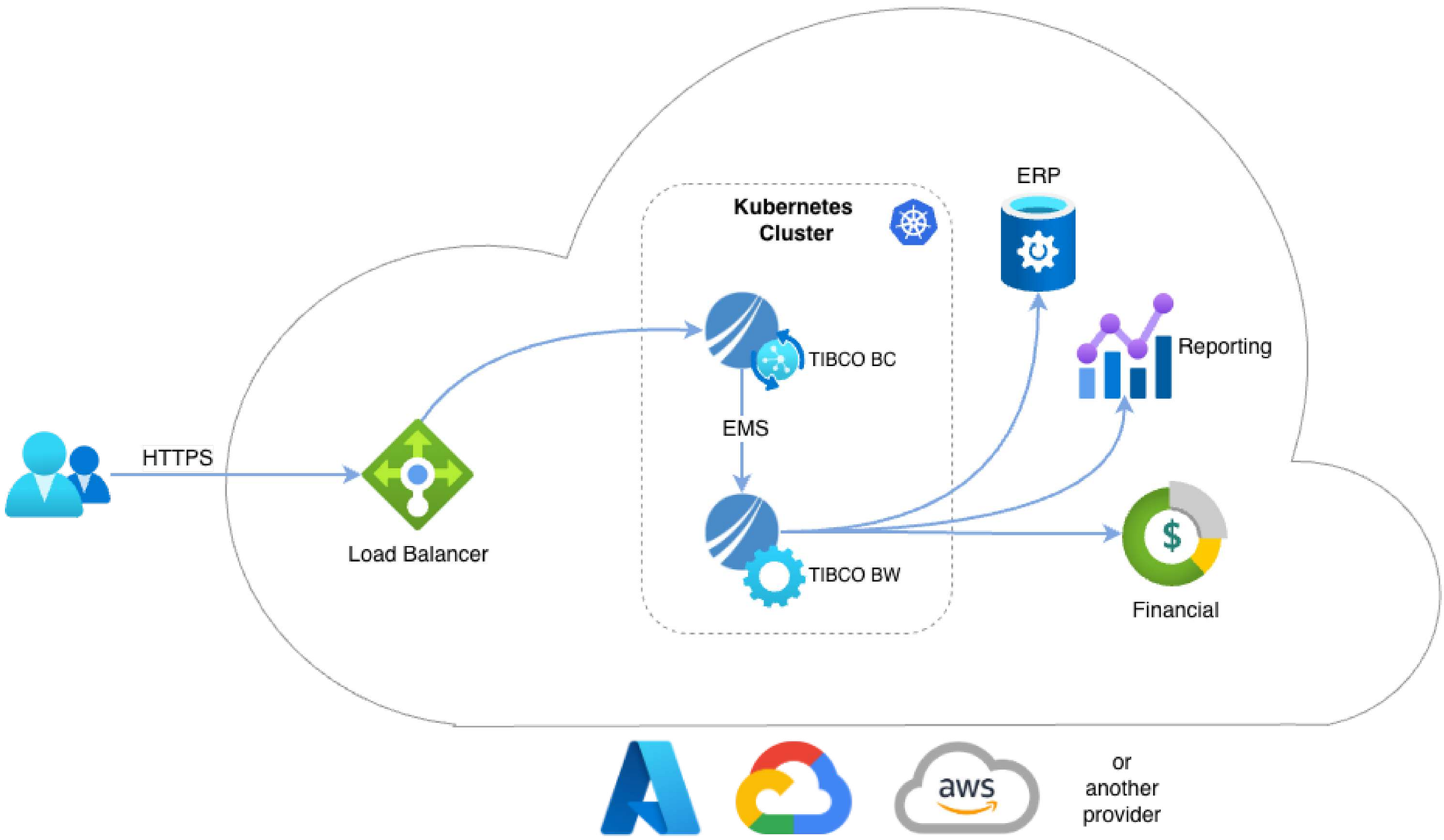
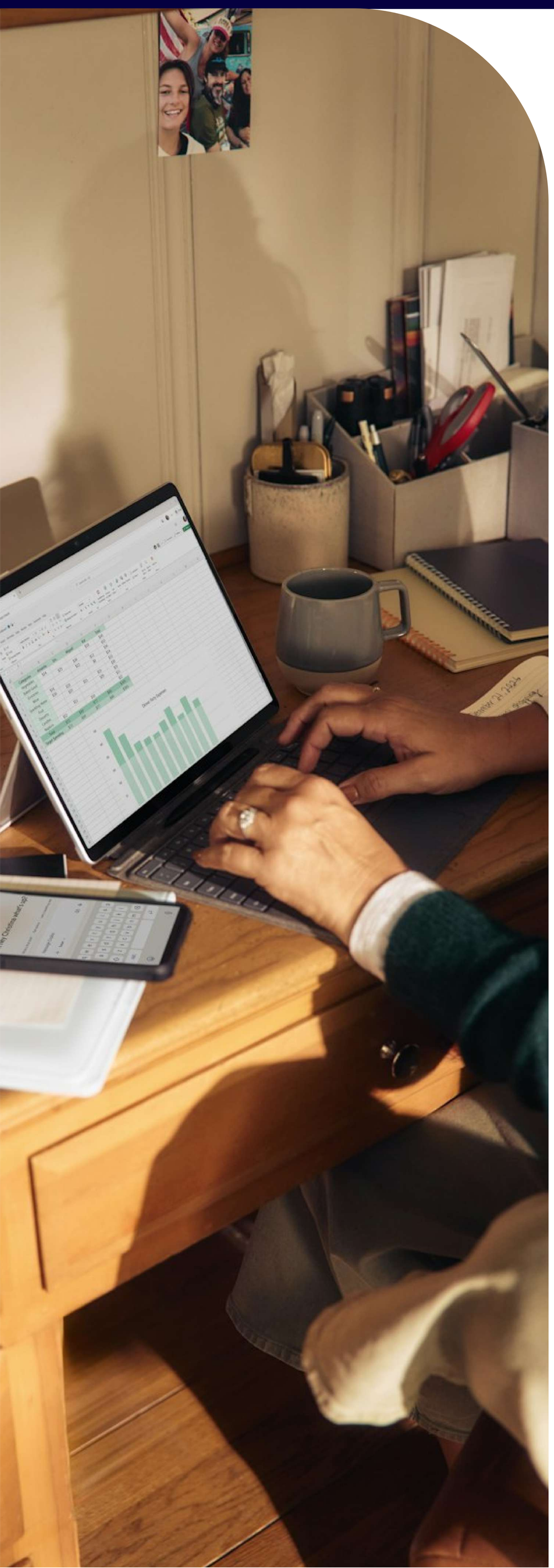


Figure 1 TIBCO BC-BW High-Level Architecture (illustrative cloud deployment)

This containerized architecture delivers key advantages over the legacy VM-based BizTalk deployment: horizontal autoscaling, zero-downtime rolling deployments, and environment consistency via Infrastructure-as-Code. Also, the separation of BWCE (internal) and BCCE (B2B external) creates clear architectural boundaries that simplify troubleshooting and capacity planning. Trading partner onboarding becomes a configuration activity in BCCE rather than a development task, accelerating new partner integration timelines.

MIGRATION APPROACH



The migration from BizTalk Server to TIBCO follows a structured, risk-mitigated approach that prioritizes business continuity and incremental validation. Rather than a “big bang” cutover, the methodology uses staged migration by trading partner batches, parallel production operation, and comprehensive rollback procedures.

Migration Methodology

The core migration methodology transforms BizTalk integration assets into their TIBCO equivalents through an AI-leveraged, documentation-driven approach. Instead of manual analysis of BizTalk artifacts, the approach uses artificial intelligence services and custom Behaim AI tooling to extract, analyze, and document BizTalk configurations: parsing XLANG orchestrations, pipeline definitions, schema XSDs, and trading partner configurations to generate comprehensive As-Is documentation automatically. This reduces the documentation phase timeline by 40–60% while capturing dependencies that might otherwise be missed.

Each BizTalk orchestration, pipeline, and trading partner configuration undergoes a two-step transformation:

1. As-Is Documentation

AI-powered extraction tools capture the current behavior, logic, and dependencies of the BizTalk component in technology-agnostic terms. This produces “Technical As-Is Documentation” that describes what the integration does without reference to BizTalk-specific constructs. Human experts validate and refine the AI-generated documentation for accuracy and completeness.

2. Detail Design

Transform the As-Is documentation into “Detail Design Documents” that specify how the integration will be implemented in TIBCO BusinessWorks and BusinessConnect. These design documents include BWCE process flow diagrams, activity configurations, BCCE trading partner profiles, and EMS queue/topic definitions.

A critical element is the staged trading partner cutover strategy. Trading partners are grouped into batches by message volume, criticality, and complexity. Each batch undergoes independent testing, parallel validation, and cutover before proceeding to the next, limiting risk and allowing procedures to be refined from earlier batches.

The diagram below illustrates the AI-leveraged migration workflow. The AI services layer operates through Model Context Protocol (MCP) servers, the custom Behaim AI MCP servers provide specialized extractors for BizTalk-specific constructs (XLANG orchestrations, EDI pipeline components, trading partner agreements), while general-purpose AI services perform natural language analysis, dependency mapping, and documentation generation:

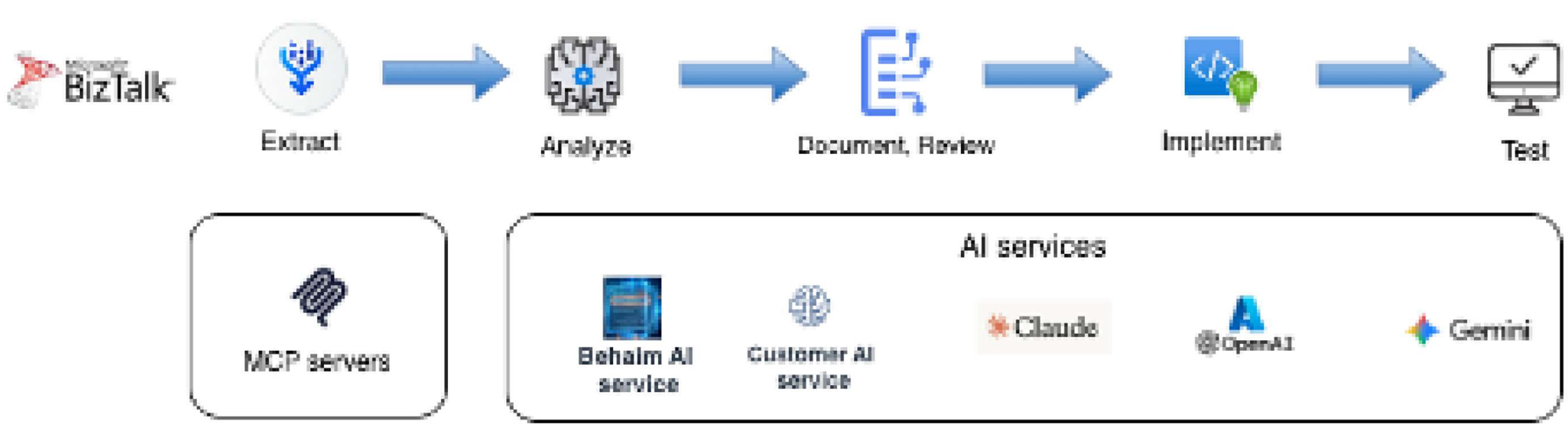


Figure 2 AI-Leveraged Migration Workflow

Discovery and AS-IS Documentation

This phase uses AI-powered extraction tools to inventory the current BizTalk environment and generate technology-agnostic documentation for each integration flow.

KEY ACTIVITIES

- Inventory all BizTalk orchestrations, pipelines, schemas, maps, adapters, and trading partner configurations
- Execute AI-powered extraction of BizTalk orchestration logic, message flow patterns, and transformation rules
- Identify dependencies between integration flows and upstream/downstream systems
- Document external system interfaces (databases, web services, file shares, API endpoints) and analyze message volumes, processing patterns, and peak load characteristics
- Generate “Technical As-Is Documentation” for each orchestration and B2B flow using AI-assisted extraction, then validate and refine through human review
- Identify pilot candidates for proof-of-concept implementation

Detail Design

This phase transforms As-Is documentation into detailed technical designs for the target TIBCO platform, specifying BWCE processes, BCCE configurations, and EMS messaging topology. Human architects and TIBCO experts drive design decisions, with AI-generated documentation as the foundation.

KEY ACTIVITIES

- Create Detail Design Documents for all integration flows (BWCE process specifications)
- Design BCCE trading partner profiles, document definitions, and transport configurations
- Define EMS queue and topic architecture (naming conventions, message selectors, persistence)
- Map BizTalk schemas (XSD) to TIBCO shared resources
- Design XSLT transformations, data mapping specifications, and exception handling / retry logic patterns
- Specify logging, monitoring, and alerting requirements for Kubernetes-deployed components
- Document rollback procedures for each cutover batch

Development and Testing

This phase builds TIBCO integration processes and B2B configurations from approved detail designs. Development runs in parallel with test case creation; each flow undergoes unit, integration, and system testing.

KEY ACTIVITIES

- Configure BCCE trading partner profiles, EDI document definitions, and transport protocols
- Implement BWCE processes for all integration flows
- Build XSLT transformations and data mapping components
- Develop test cases based on As-Is documentation (functional equivalence validation)
- Execute unit testing (individual BWCE processes) and integration testing (end-to-end flows with DEV/UAT system interfaces)
- Perform performance, capacity, and security testing (authentication, authorization, encryption, audit logging)
- Harden Kubernetes environment (network policies, pod security policies, resource quotas)
- Prepare production deployment artifacts (Helm charts, CI/CD pipelines)

Trading Partner UAT Testing

This phase validates TIBCO B2B integration with actual external trading partners in UAT before production deployment, verifying EDI exchange, protocol implementations, and end-to-end message flows.

KEY ACTIVITIES

- Coordinate UAT participation with selected trading partners (representative sample across document types and volumes)
- Configure UAT trading partner connections in BCCE (profiles, agreements, transport protocols)
- Execute end-to-end message exchange testing with actual trading partners
- Validate EDI document translation and mapping (X12, EDIFACT, custom formats) and test AS2 and other B2B protocol implementations with partner systems
- Conduct functional acceptance testing scenarios with trading partner representatives
- Validate error handling, exception scenarios, and retry logic
- Test acknowledgment processing (997, TA1, MDN)
- Conduct performance testing with realistic message volumes and document UAT issues, resolutions, and configuration adjustments

Parallel Run and Staged Migration

This phase executes the staged cutover of trading partners from BizTalk to TIBCO, with both platforms running in parallel production mode and partners migrating in planned batches, each completing a soak period before the next batch cuts over.

KEY ACTIVITIES

- Deploy TIBCO platform (BWCE, BCCE, EMS) to production Kubernetes environment
- Configure parallel operation mode (BizTalk and TIBCO both processing production messages)
- Execute Batch 1 cutover (low-risk, low-volume trading partners)
- Monitor Batch 1 for 2-4 weeks (validate message processing, error rates, performance)
- Execute Batch 2 cutover (medium-volume trading partners)
- Monitor Batch 2 for 2-4 weeks
- Execute Batch 3+ cutover (high-volume and critical trading partners)
- Conduct side-by-side validation (compare BizTalk vs TIBCO message outputs)
- Tune performance based on production traffic patterns and refine operational procedures based on real-world incidents

Cutover and Decommissioning

This final phase completes the migration, cuts over remaining trading partners, runs a 30-day parallel soak period, and decommissions the BizTalk Server infrastructure.

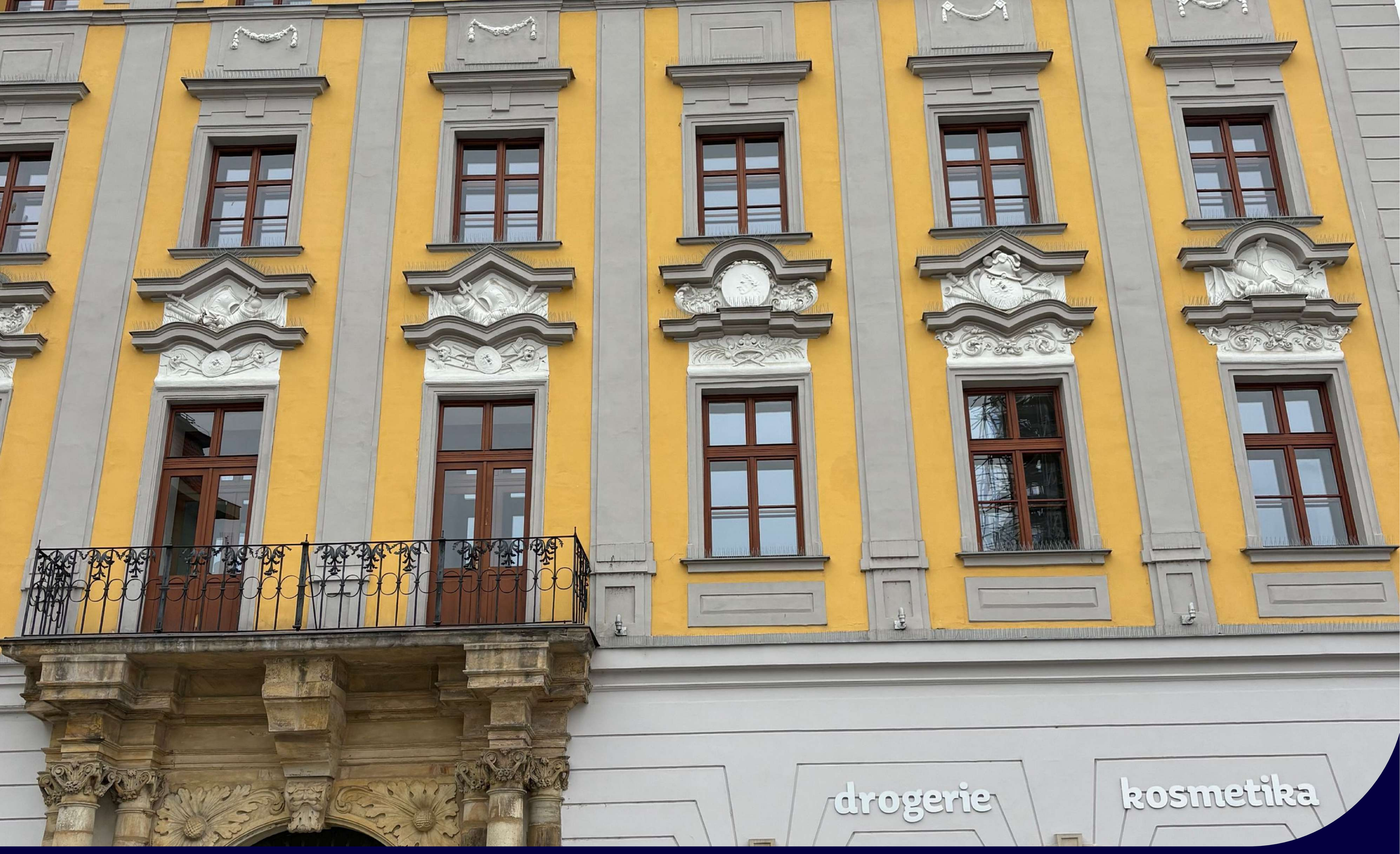
KEY ACTIVITIES

- Execute final trading partner batch cutover
- Run parallel operation for final 30-day soak period
- Conduct side-by-side validation for all trading partners
- Finalize performance tuning and capacity adjustments
- Hand off operational responsibility to the organization's operations teams
- Conduct knowledge transfer sessions (platform administration, troubleshooting, monitoring)
- Decommission BizTalk Server VMs and associated infrastructure
- Archive BizTalk configurations, orchestrations, and schemas for compliance/reference and prepare final migration report and lessons learned document

PROJECT PLAN

The migration project follows a six-phase approach. Each phase delivers key artifacts that serve as decision gates before proceeding. The plan emphasizes Infrastructure as Code (IaC) practices using tools such as Terraform or cloud-native templates for resource provisioning and Helm charts for containerized TIBCO deployment, ensuring environment consistency and repeatability across DEV, UAT, and production.

Figure 3 BizTalk to TIBCO Migration Project Phases



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