Enterprise Data, App, & AI Architecture

Current State Assessment Framework

Assessment Framework

Assessment Outputs

- Current State Inventory
  - Completed Checklists
- Capability Maturity Scoring
  - 1-5 Maturity Scale
    - Initial
    - Developing
    - Managed
    - Optimized
    - Advanced
- Key Success Factors
  - Hands-on Testing
  - Prioritize by Business Impact
  - Document Limitations
  - Honest Capability Assessment
  - Focus on Functional Systems

Data Sources Assessment

- Data Sources Assessment
  - Source Systems Mapping
    - ERP Systems
  - Access Methods
    - CRM Systems / Aux. Systems
  - Real-time vs Batch Capabilities
    - IoT Devices
  - Authentication & Security
    - External
  - Data Volume/ Velocity/ Variety

Data Storage Platforms

- Data Storage Platform Evaluation
  - Relational Databases
    - Query Performance
  - Document Stores
    - Schema Flexibility
  - Key-Value Stores
    - Caching Performance
  - Columnar Databases
    - Analytical Workloads
  - Graph Databases
    - Relationship Modeling

Data Integration

- Data Integration Readiness
  - Batch Processing
    - ETL/ELT Pipelines
    - Error Handling
  - Real-time Streaming
    - Kafka / Event Hubs
    - Stream Processing
  - Change Data Capture
    - CDC Mechanisms

Data Quality

- Data Quality Assessment
  - Data Profiling
    - Completeness
  - Quality Scorecards
    - Accuracy
  - Master Data Management
    - Consistency
    - Timeliness
    - Uniqueness

Data Modeling

- Data Modeling Evaluation
  - Transactional Systems
    - 3rd Normal Form
    - BCNF
    - 5th Normal Form
  - Analytical Systems
    - Operational Data Store
    - Star Schema
    - Snowflake Schema
    - Data Vault
    - Medallion Architecture

ML/AI Platform

- ML/AI Platform Readiness
  - Development Environment
    - Development Tools
    - Experiment Tracking
    - A/B Testing
  - Model Deployment
    - Model Versioning
    - Deployment Options
  - Monitoring & Operations
    - Model Monitoring
    - Drift Detection
    - Automated Retraining

Generative AI Platform

- Generative AI Platform Assessment
  - Platform Integration
    - Azure OpenAI Integration
    - API Rate Usage vs Limits
    - Prompt Engineering
  - AI Search & RAG
    - Vector Databases
    - Semantic Search
  - Content Safety
    - Content Moderation
    - Bias Detection

Cross-Cutting Areas

- Cross-Cutting Assessment Areas
  - Security & Compliance
    - Encryption
    - Access Controls
    - Audit Trails
    - GDPR/CCPA Compliance
  - Monitoring & Operations
    - System Monitoring
    - Performance Metrics
    - Incident Response
  - Disaster Recovery
    - Backup & Recovery
    - Business Continuity
    - RTO/RPO Objectives