Best Practices for migrating to a Hybrid Integration Platform

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Agenda

• Hybrid Integration Platform – How to?
• T-Mobile Case Study
• Demo – migration of T-Mobile BW5.x project
• Takeaways
Hybrid Integration Platform – How to?
Before we begin..  

5.0x IS STILL SUPPORTED!

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TIBCO ActiveMatrix BusinessWorks 5.13 has no end-of-support date. Adapters and Plug-ins that are compatible with BW 5.13 End of Support may be announced for older Adapter and Plug-in versions via individual end-of-support notices. If there are any additional questions or queries, please reach out to the Integration Product Management Team at integration-pme@tibco.com.
What is Hybrid Integration Platform?

Core Integration On-Premise

Focus: ESB/ SOA + connectivity to legacy systems, messaging & applications

Containers & PaaS
Your choice of Cloud

Focus: Microservices (granular, event-driven, domain-driven) + cloud integration patterns

Web-Native Integration iPaaS & Cloud Services

Focus: API-focused, SaaS connectivity, self-service, UX-driven + cloud integration

API Gateway & Management

Focus: API Portal, Security & Traffic Policies, API Distribution, Analytics
What is Hybrid Integration Platform?

TIBCO BusinessWorks™
Container Edition

TIBCO ActiveMatrix
BusinessWorks™ 5 & 6

TIBCO Cloud
Integration

BusinessWorks Capabilities

TIBCO Mashery® (including TIBCO Mashery® Local)
How-To

• **5.x application footprint:**
  - Recommended to upgrade to TIBCO ActiveMatrix BusinessWorks™ 5.13
  - No end of support date → continue to run as-is
  - Leverage APIs & services in a newer app landscape*

• **New applications:**
  - Build for the targeted deployment environment
    - On-premises – ActiveMatrix BusinessWorks™ 6
    - Your choice of Cloud (private or public) – TIBCO BusinessWorks™ Container Edition
    - iPaaS (hosted by TIBCO) – TIBCO Cloud™ Integration
  - Migrate when the scenario demands

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**Co-existence**

• All migration is incremental and gradual – not a big bang
• Thereby, all migration involves at least 2 version/edition footprint at any given time
• We’re building tooling to help improve co-existence*
• **Myth:** 5.x → 6.x required intermediate step for Cloud
Case Study – T-Mobile (US)
About T-Mobile

- As America's Un-carrier, T-Mobile US, Inc. is redefining the way consumers and businesses buy wireless services through leading product and service innovation.
- NASDAQ traded public company – TMUS
- Operating two flagship brands: T-Mobile and MetroPCS
- Based in Bellevue, Washington

Q3 2017 Highlights:
- 1.3 million net adds – 18th consecutive quarter of over 1 million
- 70.7 million total customers
- 316 million Americans covered by T-Mobile's network today and targeting 321 million by the end of 2017
- 15 quarters in a row with the fastest download and upload speeds
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Pillars of Digital Company

Digital Marketing

Email, SMS, Social

Digital Business

Simplified Products & Services, Channels, Processes

Digital Experience

Mobile-First, Paperless, 3-Click Purchase, Content

Digital IT

API/Data on the EDGE, Microservices, DevOps, Continuous Delivery, Bi-Modal IT

Digital Operations

Operational Intelligence, Digital Service Management
“Digital” Design Goals

- **Think SMAC - Social, Mobile, Analytics & Cloud**
- **Experience Driven APIs - Always Top down**
- **Faster than light Data for Experience - Structure (Virtualize) data for API Consumption**
- **Events driven Everything – Events as the Carrier and Connector**
- **Analytics driven Experience – Real-time Analytics determine experience**
- **Break down the Monoliths – Distribute & Isolate by Bounded Context (MicroServices)**
- **Build Elastic – Detach / Isolate Constraints e.g., SAP**
- **Always On – Operations with Monitoring and Fault Decisions switch over on Service degradations resulting in Continuity**
Digital Vision - T-Mobile-as-a-Service
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Migration Story
Proof of Concept

• 3 Projects and 1 DTL
• 1,191 activities in 256 processes
• 87.6% of activities migrate to Container Edition via Migration Tool
  • 95.72% of non-migratable activities were Rendezvous®
• Commonly seen errors which require manual resolution
• No logic needs to be rewritten. **All logic migrates.**

**BENEFITS OF MOVE TO Container Edition**

• Shorten CI/CD cycles from 6 weeks to x Days
• Leverage DevOps & Automation Tooling
• Microservice Agility & Versioning
• Scaling & Elasticity
• Multi-cloud / container ready applications
• Management Consolidation:
  39 Domains (Silos) > 1 PaaS
• Migration/Refactoring of SOA > APIs
• Ability to leverage existing investments/assets
## Migration Process from BW* 5.11 to BWCE* 2.3.1

### Project Analysis
- Review App Architecture
- Review supported/unsupported activities
- Go/No Go for Migration

### Pre-Migration Work
- Clean Global Variables
- Refactor Activities (AE to JMS, TIBCO Rendezvous® to FTL®)
- Clean folder structure
- Collect dependent assets (JARs, DTLs, etc)

### Migrate to Container Edition
- Migrate application
- Clean workspace after migration

### Post Migration Work
- Resolve XSLT Out of Sync and other validation issues
- Resolve/refactor invalid input/output bindings & error handling
- Resolve ‘Variable Not Found’ error
- Resolve XSLT issues
- Tokenize Module Properties for SCC

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* TIBCO BusinessWorks™ 5 is referred as BW and TIBCO BusinessWorks™ Container Edition is referred as BWCE

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Migration Team Structure

Digital Services Group

Architect
- 1 T-Mobile Architect
- 3 HCL Architect

Development
- 4 Dev Leads
- 16 Developers

Testing Team
- 1 Test Lead
- 6 Testers

DevOps Team
- 4 ASM Team members
- 4 CM Team members

Scrum Master
- 2 Scrum Masters
Migration phase

Sprint 0 (Feb 13th - Mar 24th)

Sprint 1 (Mar 27th - Apr 30th)
- 31 Operations (2% of overall TIBCO operations) Migrated to CE, taking 9% traffic out of overall TIBCO traffic

Sprint 2 (May 1st - Jun 2nd)
- 24 Operations (2% of overall TIBCO Operations) Migrated to CE, taking 18% traffic out of overall TIBCO traffic

Sprint 3 (Jun 5th - Jul 7th)
- 130 Hops are migrated. 25 Target Libraries Migrated, 4 out 5 High volume taking operations are taking 7% of total PROD traffic

Sprint 4 (Jul 10th - Aug 4th)
- 77 Operations are released for PROD, 54 are taking live traffic. All HOPs migration completed. 29 Target Libraries are migrated.

Sprint 5 (Aug 7th - Sep 8th)
- Migrated: 95, in PROD 50, rest 42 ready for PROD

Sprint 6 (Sep 11th - Oct 6th)

Sprint 7 (Oct 9th - Nov 3rd)
- Planned Target: 120 Operations, 116 Dev In Progress (including 44 Hackathon operations)

Sprint 8 (Nov 6th - Dec 1st)
- 120 Operations

Sprint 9 (Dec 4th - Dec 31st)
- 76 Operations

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Container platform choice – Pivotal Cloud Foundry
Volume and Traffic – Apple iPhone 8 / 8Plus launch
Volume and Traffic

Tibco CE PCF Dashboard

Transaction Count by Org-Nrme

Average Response Time by Service

Average Response Time by Operation

KPI: Service Errors

Service Transaction Count

KPI: Operation Errors
Core capabilities achieved by moving to BWCE

- **Modeled/Built around Experience/Capability Domains** – Top down approach to build Business Services
- **Runs in Isolation** – Runs independently (from other Digital apps)
- **Stateless** – Uses context data (from Context App) - but does not maintain state
- **Owns its data** – Manages and structures the data for the Experience/Capability domain that it serves
- **Versionable** – Each unit is identifiable based on a set of identifiers and enables co-existence of multiple versions.
- **Event Driven** – Consumes, Acts and/or trigger Events asynchronously
- **Self-contained** – Each running in its own process
- **Lightweight Transport** – Communicates with other apps/services using lightweight mechanisms (typically HTTP resource API)
- **Dynamic Discovery** – Supports Dynamic discovery using tools like Eureka
- **Bounded Context** – Scope & boundary limited to the capability/experience domain
- **Calls other Micro Services / External APIs/Services** – Using lightweight mechanisms (typically HTTP resource API)
- **Log / Monitor** – Logs to Splunk (or like); provides /feeds lowest granular info for Monitoring, Scaling & Failover
- **Elastic Infrastructure** – Auto scaling, Scales independent (of other Digital apps),
- **Deployment Process** – Pipeline based automated deployment
- **Hybrid Deployment** – Independent (of other Digital apps), Containers, Cloud Native Platforms
- **Categorized** – Documented and listed/registered in a central catalog/portal
Migration challenges

• Build process automation
• Monitoring capabilities
• XSLT 1.0 versus XSLT 2.0 errors
• Tuxedo migration from Adapter to plugin is manual
• Selective and DTL migration – now available in the product
• Studio performance and stability – now addressed in the product
• Enhanced logging – specific scenarios now addressed in the product
Takeaways – T-Mobile feedback

• Leverage existing code and skills from BW5
  • Avoid rewriting functional/business logic
  • Reuse the tooling available with BW5 for BWCE

• Faster Performance than BW5

• Co-existing BW5 and BWCE footprints
Demo – migration of T-Mobile BW5.x project to BWCE
Takeaways – TIBCO feedback
Takeaways

• Proven & successful BW5.x to BWCE migration
• Leverage BusinessWorks 5 assets
  • Co-exist with Hybrid Integration Platform
  • Migrate as necessary to eventual target env
• Product + PSG/Partners are here to help
• BusinessWorks 5 - no EoS date for v.5.13!
  • No urgency to migrate projects off BW5
KEEP CALM
AND MAKE THE
MIGRATION TO BWCE POSSIBLE