Walgreens S/4HANA Transition to Hybrid Cloud Technical Architecture Journey
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About the Speakers

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• Led several successful large scale, complex global SAP implementations

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• SAP SE
• IT-Planning Architect supporting SAP customers in their cloud transition processes and provides strategic guidance
Key Outcomes/Objectives

1. Importance of architecting HANA landscape to meet business objectives
2. Challenges of evolving technology
3. SAP best practices and methodology in this area
Agenda

• Walgreens Company Overview
• Walgreen’s Retail & Finance Transformation Project
• Architecture Definition Methodology
• Walgreens Technical Architecture
• Experiences and Learnings
Three Success Stories Coming Together

The first global pharmacy-led, health and wellbeing enterprise

Walgreens

Boots

Alliance Healthcare

Two iconic retail pharmacy brands and a leading international pharmaceutical wholesaler
About WBA

- Presence in more than 25* countries
- More than 385,000* people employed
- One of the world’s largest purchasers of prescription drugs and many other health and wellbeing products
- The largest retail pharmacy, health and daily living destination in the U.S. and Europe
- A global leader in pharmacy-led, health and wellbeing retail with approximately 14,500** stores in 11* countries
- One of the largest global pharmaceutical wholesale and distribution networks with more than 390* distribution centres in 20* countries

*Figures as of 31 August 2017, including equity method investments, using publicly available information for AmerisourceBergen.
**As of 28 June 2018.
Walgreen’s Retail & Finance Transformation Project
SAP Solution Stack at Walgreens

Walgreens Application Scope

SAP BW ENTERPRISE OPERATIONAL REPORTING AND SAP ANALYTICS

SAP BOLT-ON
- Vistex Pricing and Trade Funds
- OpenText Invoice Management and Archiving
- Tax Module
SAP Functional Usage at Walgreens

Transform Legacy Retail & Finance Business Process to SAP

• Manage Finance
• Retail :
  • Procure to Pay
  • Plan to Purchase
  • Channel Execution
  • Master Data
• CAR – Customer Activity Repository
• BW - Report to Enterprise
• Roll-Out SAP to all the stores & distribution centers
• Enhance the POS Solution with Centralized Functions
Architecture Definition Methodology
Objective
• Develop a technical architecture and IT Infrastructure concept for SAP solutions based on SAP HANA considering customer’ boundary conditions
• Focus on private cloud, IAAS, SAAS and PAAS

Approach
• Introduction of typical architecture and landscape options
• Discussion of design aspects and definition of technical architecture building blocks
• Major focus on standardization, scalability and flexibility
Define Required Capacity

Sizing, Scalability, Performance

• HANA DB layer & SAP Application Server sizing

Result

• Required capacity for new or existing PRD and non-PRD HANA landscape

• Prediction of future growth extrapolated from the past and aligned with tiering and aging plans
Deployment & Technical Landscape

Technical platform options and architecture

• HANA and SAP AS topology definition
• Define standardized templates where all systems in focus are covered

Result

• Definition of server, storage and network layout
• Architecture outline enabling to install landscape
Integrate Cloud with On-Premise

Technical architecture for hybrid cloud

- Analyze technical integration scenarios, access and data flows
- Failure case analysis
- Software change management & testing
- Security

Result

- Definition of a technical architecture for all layers from on premise up to the entry point into one or more cloud solutions (IAAS, PAAS, SAAS)
Walgreens Technical Architecture
Current Technical Architecture

• Landscape includes the target Retail & Finance Solution on S/4 HANA 1709 (10,000+ stores) plus SAP CAR and SAP BW
• Capacity planning along the projected system growth
• Hybrid Cloud Approach with all Production Systems in Walgreens Data Center & Non-Production systems in Microsoft Azure
• Hardware provider - HPE
• HANA on physical servers and SAP AS on virtual machines
• High Availability and Disaster Recovery setup across two data centers
• SAP HANA implementation based on SAP HANA Tailored Datacenter Integration (TDI) & HANA Appliance approach
Capacity Planning – Projected Growth
System Landscape Architecture

System grouping defines infrastructure templates

- Central S/4HANA system based on 1709
- Fiori usage requires Frontend server
- SAP Landscape Manager manages system landscape
- PO used for integration

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<tr>
<th>Systems</th>
<th>Topology</th>
<th>ABAP/JAVA</th>
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<tr>
<td>S/4HANA (Retail)</td>
<td>Scale up (may scale out afterwards)</td>
<td>ABAP</td>
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<tr>
<td>CAR</td>
<td>Scale out</td>
<td>ABAP</td>
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<td>BW</td>
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<td>MDG</td>
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<td>SolMan</td>
<td>Scale up (MCOS)</td>
<td>ABAP+JAVA</td>
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Data Center Setup

Hybrid data center setup

- Production and Pre-Production Environments are hosted in the On-Premise data center
- Primary data center built with availability zone (AZ) concept
- Secondary data center ~20 miles distance to primary (latency requires asynchronous replication)
- Development, Quality, Training systems hosted on Microsoft Azure
Infrastructure Template Definition

Technical Architecture Definition

• Template below defines the S/4HANA Architecture
Non Production Systems on MS Azure

Production and Non-Production System Landscape
• Transport Landscape between IAAS Cloud & On-Premise Environment
Experiences and Learnings
What we will do again!

• Continue using HSR over Storage Replication
• Clustering Solution for ERS & ASCS
• Scale-Up – Have an HA node in the same DC
• Dedicated NAS Mount Points
• Engage SAP Max Attention Team for Platform Design
What did we learn..

• Do not deviate from the use of native OS Clustering Solution for the ERS & ASCS
• Evaluate Complexity before Re-Purposing the Pre-Prod or Perf system for DR
• Backup/Recovery Solution (Dedicated Storage) required to deal with large data volumes
• SAP HANA TDI concept provided more flexibility over SAP HANA Appliances
Walgreens Future SAP Strategy

• Migrate S/4 Scale-Up to Scale-Out Environment (End State ~40 TB size)
• Migrate the entire existing On-Premise Environments to Microsoft Azure
• Complete replacement of the In-Store legacy systems and Roll-Out SAP to 10,000+ Stores & Distribution Centers
• Expand BW Environment to ~100+ TB Scale-Out system
• Integrate Rx (Pharmacy Operations) with S/4
Where did we get help?

• Engagement with SAP
• HPE
• Accenture
• Microsoft
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Q&A

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