S/4 HANA
Introduction & Roadmap

Dr. Bjoern Ganzhorn
Enterprise Architect - SAP Americas Inc.
SAP S/4 HANA Introduction & Roadmap
  - Why S/4 HANA? Business and IT Challenge
  - What is S/4 HANA? Solution Overview and Roadmap
  - How can Hershey deploy HANA? Deployment

Data in Hub, IoT and Hadoop
  - “Think’aways”
Please do not step on top of the toilet seat.

Please do not sit in a reclining position.

Please do not stand on the toilet seat.
Every company can develop a digital strategy across these 5 pillars:

1. Outcome based customer experience
2. Re-platform core business processes and bring together business process and analytics in real-time to be smarter, faster and simpler
3. Smarter and engaged workforce across all employees and contractors
4. Supplier collaboration to accelerate growth and innovation
5. Harness internet of things and big data to drive real-time insights and new business models
What does HERSHEY’s picture look like?
Our “Time Capsule” Slide

Nobody will leave the room, without having ....

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Recommendation for Target Architecture: Move to a Modern, Integrated Platform

Today

- Mature and knowledgeable team able to hold the system together
- Systems in use have possibly outlived their use in terms of supporting any new business model changes
- Inherent data latency, inconsistency and blind spots
- Complex architecture and process creating cost and inefficiencies

Target State

Simplify Business and Application Landscape by modernization and decommissioning

Enable Reporting by real-time data availability

Enable Growth Initiative by supporting M&A and Globalization

Enable New Innovation by providing real-time platform

- Single Unified, Harmonized Core
- Modern User Experience
- Fact-based decision support - Analytics
- Drastically simplified enterprise architecture
- Global “SAP Lite” Template approach for geographic expansion
- Accelerate growth through innovation and M&A

Hadoop – HSY’s target architecture to store all data and make it available to users across the enterprise

HCP – HANA Cloud Platform is an open platform-as-a-service providing unique in-memory database and business application services
Software Evolution

- Mainframe
  - R/2
  - ~20 years

- Client Server
  - R/3
  - ~20 years

- SAP S/4 HANA
  - Application
  - Platform
  - Business Network

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SAP S/4HANA
3 Key Enablers to Run Digital Transformation

- SAP HANA as the underlying platform
  - OLAP & OLTP merge
  - In-memory compression
  - Increase in speed

- SAP Fiori as the user experience (UX) paradigm;
  - Cross-application user experience
    - Web-based, all devices
    - Role-based
    - Decisive

- Simplification of applications and underlying data model
  - No aggregates & no indices
  - Higher flexibility & throughput
  - Data footprint reduction
SAP Business Suite

Classic customer and partner development

User Interface
Application
Database

Extensions
Modifications

Key user extensibility
Managed extensibility

SAP S/4HANA

Cloud edition

User interface
Application
Database (SAP HANA)

Side-by-side extensibility on SAP HANA Cloud Platform

Key user extensibility
Managed extensibility
Classic extensibility

In-App Extensibility

Public APIs

SAP
Customer, Partner
## Hardware Evolution

### 19... (1970s)
- **MEMORY**: 1GB
- **CPU**: 4 x 50 MHz
- **DISC**: 12,000,000 NS
- **COST**: 1 TB RAM $109M, 1 TB Disc $9M

### TODAY
- **MEMORY**: 6,000GB to 48,000GB
- **CPU**: 120 x 3,000 MHz
- **DISC**: DRAM 200 NS / L3 1.5 NS
- **COST**: 1 TB RAM $2K
Re-think Everything with in-memory computing
Need to eliminate redundant data copies, materialization and models

“14 years after R/3, what would an ERP system look like if we start from scratch?”

Hasso Plattner

Separated Transactions + Analysis + Acceleration processes
- 3 copies of data in different data models
- Inherent data latency
- Poor innovation leading to wastage

VS

One in-memory atomic copy of data for Transactions + Analysis
- Eliminate unnecessary complexity and latency
- Less hardware to manage
- Accelerate through innovation and simplification

SAP HANA (DRAM)
Simplification

SAP Finance & Logistics with aggregates and indices

from 15 to 4

from 28 to 2

SAP S/4HANA Finance & Logistics

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Industry 3.0 > Industry 4.0
Enabling Hershey in the “Digital Age”

- Structured and Unstructured Data
- OLAP/OLTP Together
- Massively Parallel
- All Data In-memory
- Zero Latency
- On-the-fly
- Real-time
- Columnar

- Responsive
- Instantaneous
- Simulations
- Intuitive
- Predictive
- Contextual Navigation and Search
- Insight to Action
- Data-based Decisions
- All Data
- IT

- Business
**Business Models**
With SAP HANA, the Internet of Things and Big Data are accessible to any business. Connect people, devices, and business networks in real time to create new business models and deliver more value to customers.

**User Experience**
SAP HANA is natively designed with SAP Fiori, the most modern, role-based user experience to give users a personalized, responsive, and simple UX across all tasks and devices.

**Business Processes**
Simplify your business processes to gain new efficiencies across your organization. Using SAP HANA, you can focus on the most essential tasks in real time and adapt business processes as needed.

**Data Models and System Landscape (IT)**
Shrink your data footprint – and your IT costs – with a simplified data model. Say goodbye to indices, aggregates, and data redundancies once and for all.

**System Deployment (IT)**
Simplify your deployment by aligning it to business needs. SAP HANA gives the choice to deploy in the cloud, on premise, or hybrid for faster time to value and easy adoption via guided configuration.
HANA Adoption Framework by Business Impact

**NEW BUSINESS MODELS**
- Business Innovation
- New customers
- New markets

**New/Better PRODUCTS**
- Optimize products
- Offer new products or services

**New/Better PROCESSES**
- Improve single processes
- Replace single processes
- Change end to end processes

**New/Better DECISIONS**
- Transparency
- Decision support
- Decision automation

**Better SPEED**
- DB Exchange – “Lift and Shift”

**New BUSINESS MODELS**
- Personalized Medicine
- Pay by Use (Compressed Air)

**Better PRODUCTS**
- Quality Improvement
- Predictive Maintenance
- Customer Service

**Better PROCESSES**
- Expert Finder
- Simple Financials

**Better DECISIONS**
- Customer 360° view (incl. external data!)
- POS Data Access
- Global Batch Traceability

**Better SPEED**
- Planning runs within a batch window
- Higher fill-rate from multiple runs of product allocation and backorder processing
- Inventory Visibility
“SAP Lite” Approach for M&A

M&A Enablers

Differentiating (Go to Market)

Shared Synergies

Financial Regulatory

Data

Process

Start

Time

Unique / Local Process (Global Template Lite “Extensions”)
- Provide Complementation through pre-integrated SAP SaaS offerings, such as S&OP, Trade Management and Sales/Service, etc.
- Provide Extensibility through PaaS offering (HANA Cloud Platform)

Global Strategic and Commodity Processes (Global Template Lite)
- Accomplished with configuration variations, such as Transaction Variants, Incompletion Logs, Personas/Fiori, Rules, etc.
- Managed by GSS
- Value-based global template extensions

Regulatory and Foundational Data (Global Data Template)
- Central Finance
- Data Services / Master Data Governance / Information Steward
- Global Reporting

Cloud
S/4HANA Integration Strategy

Cloud

- SAP delivered
- SAP S/4HANA
- Released APIs
- Customer
- HCI
- Non SAP Cloud

On-Premise

- SAP delivered
- SAP S/4HANA On-Premise
- Released APIs
- Customer
- HCI, PI, SLT
- HCI, PI, SLT and Others

Business Suite

- SAP delivered
- SAP S/4HANA
- Released APIs
- Customer
- HCI, PI, SLT and Others
- HCI, PI, SLT and Others

Non SAP Applications
**Decision Matrix**

- **New business (for example, industry)**
  - Add specific terminology, extend existing or add new business objects and application logic on the same database
  - Add search or selection parameters, variants
  - Fill gaps in the business process, rearrange steps, or create new process steps
  - Enable business-to-business (B2B) protocol and new APIs with focus on pre- and postprocess variants and integration
  - Add a new business process
  - Add calculation and process engines
  - Integrate with full stand-alone partner applications with own database

- **Analytics**
  - Perform in-app analytics (data)
  - Write back a small amount of results (insights) to trigger follow-up actions
  - Read (replicate) a massive amount of master and flow data from multiple sources
  - Conduct specific data collection and aggregation on BI software and SAP HANA
  - Perform complex analytics, reporting, simulation, forecasting (for example, for integrated business planning, fraud detection, governance, risk, and compliance)

- **Globalization and localization**
  - Country-specific aggregation, validation, and calculation, forms and reports
  - Language-specific content, UI flow adaptations, new fields

- **Content**
  - Complex business content (customizing, business data)

- **User productivity**
  - Dedicated and strong single-user focus with no to low training
  - Encapsulation of standard functionality to hide complexity

- **External facing and collaboration**
  - Same as user productivity but with a dedicated and strong multiuser focus
  - Specific functionality for external users and systems such as vendors (B2B) and customers' customers (business to consumer)
  - Integration of social networks such as SAP® Jam™ and LinkedIn

- **Business integration**
  - Business-specific subscriptions and event filtering
  - Bulk and batch processing

- **Complements**
  - Some SAP software products (for example, financial services and SAP Hybris® solutions) provide only templates that have to be complemented by partner products of individually by customers. Examples include production planning in the SAP ERP and SAP Policy Management applications, SAP Bank Analyzer set of applications, and SAP Insurance Analyzer analytic applications

- **Technological integration**
  - Deep technological integration on the foundation or framework level (archiving, document services, and so on)
  - Shared objects (for example, documents) integrated in many apps: adaptation through configuration

- **Partner cloud integration**
  - Integration with the partner cloud and its cloud services – for example, mailings, mobile, Internet of Things

**Legend:**
- **R** = Recommendation for migration having the options
- **I** = in-app
- **S** = side-by-side
S/4 Delivery Schedule

- SAP S/4HANA, on-premise edition
- SAP S/4HANA, cloud edition
- SAP S/4HANA, cloud edition (next update)
- SAP S/4HANA, on-premise edition and cloud edition (next update)

Available Today → Planned Innovations → Future Solution

Quarterly innovation cycle
Yearly innovation cycle
Continuous innovations

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Recommendation for Target Architecture: Move to a Modern, Integrated Platform

- Today
  - Ariba
  - SuccessFactors
  - Microsoft
  - salesforce

- Target State
  - HANA Platform
  - Ariba
  - Fiori Analytics
  - hybris
  - HCP

Success Factors

- Non-SAP Systems will be consolidated into SAP, and others will be upgraded/replaced/updated in parallel - outside of the scope of this effort.

Hadoop – NSY’s target architecture to store all data and make it available to users across the enterprise.
What are Hershey’s options?

S/4HANA Journey

SAP ERP
(Any DB/HW)

Netweaver/BW
(SAP HANA or Any DB)

S/4HANA with
Simple Finance

• Netweaver 7.4
• Simple Finance
  Add-on
  • ERP 6 (EhP7)
  SAP HANA

Platform Technical
Migagation

ERP 6 EhP 7 Migration to SAP HANA
SAP BW Migration to SAP HANA

Platform Technical
Upgrade

Netweaver/BW Upgrade
ERP 6 EhP 7 Upgrade

One Step Process – Upgrade & Migrate

SAP ERP 6 (EhP 7)
(Any DB/HW)

SAP HANA

HANA Ready
Platform

ERP on HANA
Enabled Platform

Readiness
Considerations

S4HANA Roadmap
ECC Technical Upgrade
Netweaver Upgrade
Process Optimization

Business Process Transformation / Change Management

Continued S/4HANA Development

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Activation Roadmap (DRAFT)
Business Architecture – Projection of Timeline and key outcomes

- Data Simplification
- Process Simplification
- System Simplification (SAP/Non-SAP)

Project Start

Q4 2015
Jun 2016
Oct 2016
Mar 2017
Sep 2017
Q4 2017

1a Analytics (FI)
2a Process (FI)
1b Analytics (..)
3a Consolidation
2b Process (..)
3b Consolidation (..)

Central Finance for ARP/PRD and M&A
Enable Operational Analytics for ARP/PRD and M&A
Simplify ARP*
(SAP/Non-SAP could be folded in at either ARP or PRD cutovers)

Simplify PRD*
(Dramatically Simplified IT Landscape)

2016
2017
2018

* Non-SAP could be folded in at either ARP or PRD cutovers

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Agenda

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- Data in Hub, IoT and Hadoop
Transition Roadmap (DiH Approach)
Process / Data

Modernize Business:
- Optimized Business Processes
- Operational Business Intelligence
- New User Interface

Modernize IT:
- Simplified AppDev
- Simplified App/Data Footprint

Data Analytics enablement
- Simplify Testing and Decoupling of major data activities (extraction/transformation/cleansing) from rollout phases
- Minimizes resource impacts on source system
- Harmonization and Cleansing of Data

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1. SAP LT / SLT enables real-time data provisioning into / within / out of the Data-In Hub
2. Dependent on scenario the staging can be added – or deduced
3. Data are ready for consumers
4. Historic and current data are at hand
5. Decide on data life cycle after consistent load to Data-In Hub:
   1. Keep data in staging area(s)
   2. Archive
   3. Move to SAP ILM
   4. Store in e.g. SAP IQ
6. Data-In Hub can be directly accessed by SDA / Smart Data Access
7. Data-In Hub can be run as Schema on EDW HANA – high speed data access
SAP Strategy for IoT

Industry solutions

Application enablement platform

Device management platform

Connectivity

Intelligent Assets

Adaptive Logistics
Moving Assets
Augmented Reality
Remote Service Management
Predictive Maintenance
Digital Object Memory
Energy Management
Predictive Quality
Output based monetization

R&D
Logistics
Manufacturing
Sales
Service
SAP Strategy for IoT

Data and process integration with SAP Business Suite, cloud solutions from SAP, and non-SAP systems

SAP HANA Cloud Platform Internet of Things Services

Industry solutions
Application enablement platform
Device management platform

Connectivity
Intelligent Assets

Telco
3rd party device cloud
Devices

Predictive Maintenance
Smart Product
Output based monetization
Adaptive Logistics

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SAP HANA Cloud Platform – a central element as your In-Memory ‘Platform as a Service’
Think’aways:

- Think “Best of all worlds”
- Think S/4 HANA
- Think 10x