Redefine Business by Building Unique Applications on SAP HANA with Red Hat

Jordan Cao
Director, SAP Global Product Marketing
June, 2016
Organizations seek to provide innovative technology and capabilities where it helps them compete and impact the business, while accepting more standardized packaged solutions in areas that do not necessarily require differentiating capabilities.

Accenture Vision, 2014

IT-developed applications have become the primary driver for growth and differentiation for enterprises. The building of these custom agile applications is becoming a hallmark of the new digital enterprise.

Forrester Research: Don’t Just Maintain Business Applications, Raise Business Responsiveness, 2014

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Business Software Spending*

- Packaged Applications: 26%
- Custom Applications: 25%
- App Maintenance: 49%
Typical reasons for tailored applications

BUSINESS LANGUAGE FOR UNIQUENESS

Gain deeper insights with own intellectual property
Increase business efficiency and reduce costs
Get faster response and better user experience

Innovative Business Approaches
Streamline Business Process
Agile Business Operation

“40% of executives worry that their organizations will not keep pace with technology change and lose their competitive edge.

– McKinsey study, 2013
Build new applications to gain more
GET MORE COMPETITIVE ADVANTAGES

Unique Business Data

Unique Business Process

Unique Business Opportunity

UK UNIVERSITY OF KENTUCKY

Airi

KAESER KOMPRESSOREN
## The challenge

### AVOID BUSINESS PROCESSES FRAGMENTATION

### Core Enterprise Applications

<table>
<thead>
<tr>
<th></th>
<th>ERP</th>
<th>CRM</th>
<th>SRM</th>
<th>EDW</th>
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<tbody>
<tr>
<td>Finance</td>
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<td>Customer</td>
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<td>Vendor Data</td>
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<td>HR Copy</td>
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<td>Finance Copy</td>
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### Custom Built Applications

<table>
<thead>
<tr>
<th>Planning &amp; Optimization Applications</th>
<th>Ad-hoc Reporting Applications</th>
<th>Predictive Applications</th>
<th>Big Data Analytics Applications</th>
<th>Internet of Things Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance Data Copy</td>
<td>Sale Data Copy</td>
<td>Economy Data</td>
<td>Social Media Data</td>
<td>RFID Data</td>
</tr>
<tr>
<td>Social Media Data</td>
<td>HR Copy</td>
<td>Machine Data</td>
<td>Location Data</td>
<td>Location Data</td>
</tr>
<tr>
<td>Inventory Data Copy</td>
<td>Finance Data Copy</td>
<td>Location Data</td>
<td>Text Data</td>
<td>Machine Data</td>
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<tr>
<td>Finance Data Copy</td>
<td></td>
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</tbody>
</table>

Many platforms; Multiple data copies; Segregated workloads

Complex to maintain; No single source of truth; Limited ability to innovate
Develop applications on SAP HANA platform
AN UNIFIED APPLICATION PLATFORM

Core Enterprise Applications

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With SAP HANA, you have:

- **ONE PLATFORM**: support data analysis and operations.
- **ONE DATA COPY**: remove unnecessary data move or copy data between applications;
- **ANY WORKLOADS**: support any workloads to provide architecture agility
Advanced data processing in SAP HANA
THE PLATFORM FOR ALL APPLICATIONS

SAP HANA PLATFORM
ON-PREMISE | CLOUD | HYBRID

Application Services
- Web Server
- JavaScript
- Fiori UX
- Graphic Modeler
- Application Lifecycle Management

Processing Services
- Spatial
- Graph
- Predictive
- Search
- Text Analytics
- Streaming Analytics
- Series Data
- Business Functions

Integration & Quality Services
- Data Virtualization
- ELT & Replication
- Data Quality
- Hadoop & Spark Integration
- Remote Data Sync

Database Services
- Columnar OLTP+OLAP
- Multi-Core & Parallelization
- Advanced Compression
- Multi-tenancy
- Multi-Tier Storage
- Data Modeling
- Openness
- Admin & Security
- High Availability & Disaster Recovery

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SAP HANA platform
IN-MEMORY PLATFORM FOR ALL APPLICATIONS

SAP Fiori, SAP Lumira, SAP BusinessObjects

SQL, MDX, XML/A, JSON, Open Connectivity

Consumer-grade experience
Open Interface
In-Memory
Embedded Libraries
OLTP and OLAP
Collapsed stack
All Data – one copy

Application Services | Processing Services | Integration & Quality Services

Database Services

Structured Data
Geospatial Data
Machine Data
Social Network Data
Text Data

For Cloud and On-premises
Run all applications on SAP HANA platform

- SAP applications run better on and are architected for SAP HANA
- Custom applications are easier to build and run more rapidly on SAP HANA
- Third-party applications run faster and unchanged on SAP HANA
All SAP applications run better on SAP HANA

SAP HANA IS CENTRAL TO SAP STRATEGY

- Every product from SAP already runs in/will soon be optimized for SAP HANA
- SAP HANA powers both on-premise and cloud applications
- SAP HANA enables managed private cloud (HEC) and SAP Platform-as-a-Service (HCP)
- SAP HANA is available in third-party public clouds (Amazon AWS, Microsoft Azure)

### SAP HANA PLATFORM

<table>
<thead>
<tr>
<th>Core Business Processes</th>
<th>Data Warehouse and Data Marts</th>
<th>Operational Reporting, BI</th>
<th>Advanced Analytics</th>
<th>Cloud Solutions</th>
<th>Business Network</th>
<th>Big Data</th>
<th>IoT</th>
</tr>
</thead>
<tbody>
<tr>
<td>S/4HANA</td>
<td>BW on HANA</td>
<td>HANA Live, Lumira</td>
<td>BPC, S&amp;OP, CO-PA</td>
<td>Successfactors, Sales, Service and Marketing</td>
<td>Ariba</td>
<td>Customer Engagement Intelligence</td>
<td>Predictive Maintenance</td>
</tr>
</tbody>
</table>

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• ABAP developers use CDS and Open SQL to leverage SAP HANA without coding SAP HANA objects
• Custom application developers choose any application server and any database interface
• SAP HANA native application developers use SAP HANA application services inside the platform
### Why to build applications on SAP HANA?

**BUILD BETTER APPLICATIONS**

<table>
<thead>
<tr>
<th>SAP HANA Platform</th>
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<tbody>
<tr>
<td>Application Services</td>
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<tr>
<td>Database Services</td>
</tr>
</tbody>
</table>

### Accelerate

- Faster and personalized responses
- Shorter development times – prebuilt functions, transparent support for all devices
- Cloud-ready for faster development and deployment

### Simplify

- Simplified architecture – one platform for application, database, integration services
- No data duplication – one copy of data for all workloads
- Open standard interfaces and convenient tools

### Innovate

- Analytics and transactions combined in the same application
- Big Data and IoT-ready – process geospatial, graphs, and text data together
- All queries run on fresh data
## Breaking Through Innovation Of SAP HANA
### COMPARING TRADITIONAL PLATFORM WITH SAP HANA PLATFORM

<table>
<thead>
<tr>
<th>Traditional</th>
<th>SAP HANA In-Memory</th>
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</thead>
<tbody>
<tr>
<td>Disk IO slows down application performance</td>
<td>No disk IO – fully leverage parallel processing</td>
</tr>
<tr>
<td>Materialization and indices required</td>
<td>On-the-fly data aggregation with no indices</td>
</tr>
<tr>
<td>Multiple data copies to accelerate performance</td>
<td>Single copy of data</td>
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<tr>
<td>Segregated multi-layered technology</td>
<td>Collapsed technology stack</td>
</tr>
<tr>
<td>Silos transaction and analytic workload</td>
<td>Combine OLTP + OLAP</td>
</tr>
<tr>
<td>Slow to process different data types together</td>
<td>Combine multiple data types</td>
</tr>
</tbody>
</table>
What does SAP HANA offer?

- Provide integrated services within one platform
- Run analytics and transactions together on one data copy
- Expedite applications development and deployment with SAP HANA Cloud Platform
- Improve productivity with convenient development tools and open interfaces
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Accelerate
Simplify
Innovate

Next generation Applications for Modern IT
**SAP HANA PLATFORM**

<table>
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<tr>
<th>APPLICATION SERVICES</th>
<th>PROCESSING SERVICES</th>
<th>INTEGRATION &amp; QUALITY SERVICES</th>
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<tbody>
<tr>
<td>Columnar OLTP+OLAP</td>
<td>Multi-tenancy</td>
<td>Openness</td>
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<tr>
<td>Multi-Core &amp; Parallelization</td>
<td>Multi-Tier Storage</td>
<td>Admin &amp; Security</td>
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<tr>
<td>Advanced Compression</td>
<td>Data Modeling</td>
<td>High Availability &amp; Disaster Recovery</td>
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- Turns data into real-time information
- No database tuning required for complex and ad hoc queries
- Run Transactions and Analytics together on one system and one copy of data
- Ready for Cloud, Hybrid, or On-premise deployment
- Not limited by the size of memory
Processing services
COMPREHENSIVE ADVANCED DATA PROCESSING AND ANALYTICS

<table>
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<tbody>
<tr>
<td>Spatial</td>
<td>Graph*</td>
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<tr>
<td>Predictive</td>
<td>Search</td>
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<td>Text Analytics</td>
<td>Streaming Analytics</td>
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<td>Series Data</td>
<td>Business Functions</td>
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</table>

**DATABASE SERVICES**

- Run applications with dramatically different data type characteristics in the same system
- Optimize graph, planning, and rules applications on the same data
- Empower your business via built-in predictive analytics, business functions, and data quality

* Graph is in controlled availability
## Integration services

DATA FROM ANY SOURCE FOR A COMPLETE VIEW OF THE BUSINESS

### SAP HANA PLATFORM

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<td>Remote Data Sync</td>
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### DATABASE SERVICES

- Access information stored in data silos while keeping the data in place
- Replicate and move any type of data in real-time to the cloud and on-premise when necessary
- Capture and analysis live data streams and route to appropriate storage or dashboard
- Synchronize data between HANA and thousands of remote databases (SQL Anywhere, UltraLite)
- Multiple access points from HANA to Hadoop data: thru Spark, Hive, HDFS and MapReduce
**Application services**

**ONE SYSTEM TO REDUCE DATA MOVEMENTS**

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<td>Web Server</td>
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<td><strong>PROCESSING SERVICES</strong></td>
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<td><strong>INTEGRATION &amp; QUALITY SERVICES</strong></td>
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</tbody>
</table>

### DATABASE SERVICES

- Deliver consumer-grade User Experiences for any device, automatically
- Support standards and languages that developers already know how to use
  - Java, JavaScript, C++, Node.JS, SQL, JSON, ADO.NET, JDBC, ODBC, OData, HTML5, MDX, XML/A
- Built-in tools to develop, version-control, bundle, transport, and install applications
What does SAP HANA offer?

- Provide integrated services within one platform
- Run analytics and transactions together on one data copy
- Expedite applications development and deployment with SAP HANA Cloud Platform
- Improve productivity with convenient development tools and open interfaces

Next generation Applications for Modern IT

- Accelerate
- Simplify
- Innovate
Delta Merge
FOR TRANSACTION AND ANALYTIC WORKLOADS

Before the merge operation,
• all write operations go to Delta 1 storage and all read operations read from Main 1 and Delta 1 storages.

After the merge operation:
• Main1 and Delta1 storages are cleaned.
• The compression of the new main storage (Main 2) is reevaluated and optimized.

During the merge operation:
• All write operations go to the second delta storage, Delta 2.
• Read operations read from the original main storage, Main 1, and from both delta storages, Delta 1 and Delta 2.
• Uncommitted changes in Delta1 are copied to Delta2.
• The content of Main 1 and the committed entries in Delta 1 are merged into the new main storage, Main 2.
Run analytic and transaction workloads

ONE DATA COPY

- Real-time operational reporting on fresh data with 2,000+ views (SAP HANA Live)
- Query views do not duplicate SAP Business Suite data
- User can extend/revise query views to support new applications
SAP HANA text analytic
DISCOVER UNKNOWN INFORMATION

- Native full-text and fuzzy search
  - Exploit full-text search capabilities for exact, freestyle, linguistic, fuzzy, and synonym-based search and ranking
- File Filtering
  - Unlock text from binary documents
  - Ability to extract and process unstructured text data from various file formats (txt, html, xml, pdf, doc, ppt, xls, rtf, msg)
  - Load binary, flat, and other documents directly into HANA for native text search and analysis
- Native Text Analysis
  - Give structure to unstructured textual content
  - Expose linguistic markup for text mining uses
  - Classify entities (people, companies, things, etc.)
  - Identify domain facts (sentiments, topics, requests, etc.)
  - Supports up to 31 languages for linguistic mark-up and extraction dictionary and 11 languages for predefined core extractions
SAP HANA predictive analytics
KNOW SOMETHING IN ADVANCES

Innovate next generation application (e.g., IoT) with machine learning and real-time prediction

**New Features and Capabilities**

- Integrate machine learning algorithms with SDS, Spatial, and Series data
- Improve operational intelligence by combining core business processes and machine data
- Real-time prediction with over 70 built-in predictive algorithms

**Benefits**

- Expanded SAP HANA capacity with lower TCO
- Re-imagine digital intelligence
- Connect your enterprise to the digital economy

**Predictive Analysis Libraries (PAL)**

Accelerate predictive analysis and scoring with native in-database algorithms delivered out-of-the-box.

**Graphical Modeling**

Pre-built commonly utilized business and predictive algorithms to facilitate a faster and easier development.

**R Integration**

Execute R scripts via parallelized connection. Embed R scripts as part of overall query plan.

70+
Predictive Algorithms
SAP HANA in-memory predictive analytics

PREDICTIVE ANALYSIS LIBRARY (PAL) - ALGORITHMS SUPPORTED

Association Analysis
- Apriori
- Apriori Lite
- FP-Growth
- KORD - Top K Rule Discovery

Classification Analysis
- CART
- C4.5 Decision Tree Analysis
- CHAID Decision Tree Analysis
- K Nearest Neighbour
- Logistic Regression
- Back-Propagation (Neural Network)
- Naive Bayes
- Support Vector Machine
- Confusion Matrix
- Parameter Selection & Model Evaluation

Regression
- Multiple Linear Regression
- Polynomial Regression
- Exponential Regression
- Bi-Variate Geometric Regression
- Bi-Variate Logarithmic Regression

Cluster Analysis
- ABC Classification
- DBSCAN
- K-Means
- K-Medoid Clustering
- K-Medians
- Kohonen Self Organized Maps
- Agglomerate Hierarchical
- Affinity Propagation
- Gaussian Mixture Model
- Latent Dirichlet Allocation (LDA)

Time Series Analysis
- Single Exponential Smoothing
- Double Exponential Smoothing
- Triple Exponential Smoothing
- Forecast Smoothing
- ARIMA/Seasonal Arima
- Brown Exponential Smoothing
- Croston Method
- Forecast Accuracy Measure
- Linear Regression with Damped Trend and Seasonal Adjust
- Test for White Noise, Trend, Seasonality

Probability Distribution
- Distribution Fit
- Cumulative Distribution Function
- Quantile Function

Outlier Detection
- Inter-Quartile Range Test (Tukey’s Test)
- Variance Test
- Anomaly Detection
- Grubbs Outlier Test

Link Prediction
- Common Neighbors
- Jaccard’s Coefficient
- Adamic/Adar
- Katzβ

Data Preparation
- Sampling
  - Random Distribution Sampling
- Binning
- Scaling
- Partitioning
- Principal Component Analysis (PCA)

Statistic Functions (Univariate)
- Mean, Median, Variance, Standard Deviation
- Kurtosis
- Skewness

Statistic Functions (Multivariate)
- Covariance Matrix
- Pearson Correlations Matrix
- Chi-squared Tests:
  - Test of Quality of Fit
  - Test of Independence
- F-test (variance equal test)

Other
- Weighted Scores Table
- Substitute Missing Values
- DenStream clustering
- Adaptive Hoeffding Tree
- Random forest
- Area Under Curve calculation
- Survival analysis (Kaplan-Meier estimate)
SAP HANA smart data streaming
EXTRACT INSIGHT IMMEDIATELY FROM DATA FLOW

Features and Capabilities

- Capture, filter, analyze, and act on millions of events per second in real time
- Capture high value data in HANA and direct other data into Hadoop
- Stream live information to operational dashboards
- Perform continuous queries using declarative (CCL) or model-driven approaches
- Incorporate current events into prediction algorithms immediately rather than periodic polling
- Valid and up-to-date prediction model is maintained at all times regardless of data drifts

Benefits

- Instantly and progressively adapt to changing conditions and behaviors
- Re-imagine business models, products, and services
What does SAP HANA offer?

- Provide integrated services within one platform
- Run analytics and transactions together on one data copy
- Expedite applications development and deployment with SAP HANA Cloud Platform
- Improve productivity with convenient development tools and open interfaces

Next generation Applications for Modern IT

- Accelerate
- Simplify
- Innovate
SAP HANA Cloud Platform (HCP)
CURRENT & PLANNED INNOVATIONS

- Cloud-ready platform with full enterprise support
- Lower capital expenditure with better system resource utilization and simplified management
- Manage multiple DB tenancies as a unit

NOTE: This is the current state of planning and may be changed by SAP at any time.

1*: planned innovations / future direction
WHAT DOES SAP HANA OFFER?

- Provide integrated services within one platform
- Run analytics and transactions together on one data copy
- Expedite applications development and deployment with SAP HANA Cloud Platform
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Simplify
Accelerate
Innovate

Next generation Applications for Modern IT
Development tools and open interfaces

**IMPROVE PRODUCTIVITY**

<table>
<thead>
<tr>
<th>HANA Studio</th>
<th>ABAP Studio</th>
<th>NetWeaver</th>
<th>Web IDE</th>
<th>ABAP IDE</th>
<th>Bring your Own Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible and Complete</td>
<td>Support ABAP Programming</td>
<td>SAP Java development environment</td>
<td>Simplicity</td>
<td>Simplicity</td>
<td>Openness. Access SAP HANA through standard JDBC/ODBC or OData RESTFUL Web Services</td>
</tr>
<tr>
<td>Fully support HANA features</td>
<td></td>
<td></td>
<td>Professional Developers</td>
<td>Professional Developers</td>
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</tr>
</tbody>
</table>

**Eclipse**

**Orion**

**REST / SQL Interface**

**SAP HANA Platform**

- Fiori Library
- PAL/BFL
- Lumira Library
- SAP UI5

- Open platform supports multiple languages with standard JDBC/ODBC and OData/RESTful Web Services calls
- Deeply integrate with ABAP programing environment
- Support Web IDE to allow programming with thin client
SAP Fiori UX/SAPUI5 libraries
BEAUTIFUL USER EXPERIENCE ACROSS DEVICES AND BROWSERS

- Model-View-Control (MVC) based JavaScript UI libraries to render client-side HTML5
- Based on OpenUI5 libraries
- 180+ UI controls and charts included
- Works with JSON, XML and OData models
- Role-based personalization
- Predefined layouts for typical use cases
- Localization (i18n) support
What can we build on SAP HANA?
Build customized IT applications for the best fit
LEVERAGE ENTERPRISE-WIDE DATA

Process both SAP and non-SAP Data

- Easily access and leverage SAP Business Suite data
- Fast process across different data types transparently in one system
- Combine OLAP and OLTP in the same application
- Automatically deliver a single source of truth and real-time insight

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<td>Forecasting</td>
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<td>Inventory</td>
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Personalized Customer Experiences

Recommendations
My Care Circles
New applications: connect assets
TO INCREASE BUSINESS AGILITY

Real-time Logistics/ Routing Optimization

Intelligent Vending Application

• Easily combine IoT and core business data
• Leverage built-in stream processing advanced analytics
• Take action in real-time on data of any type and volume

SAP HANA PLATFORM

DATABASE SERVICES

Forecasting
Pricing
Customers
Inventory
Accounting
Planning

Smart Data Streaming

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New applications: connect systems
TO SIMPLIFY BUSINESS OPERATION

- Streamline IT and OT systems to improve business operation efficiency
- Allow IT to collect and process OT data in real-time to accelerate business processes
- Enable OT to leverage advanced analytics system to process data from heterogeneous sources
- Reduce complexity and cost of synchronizing OT and IT data

**SAP HANA PLATFORM**

<table>
<thead>
<tr>
<th>DATABASE SERVICES</th>
<th>IT System</th>
<th>New Integrated IT and OT System</th>
<th>OT System</th>
</tr>
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<tbody>
<tr>
<td>Forecasting</td>
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<tr>
<td>Pricing</td>
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<td>Customers</td>
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<td>Accounting</td>
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<td>Planning</td>
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<td>SCADA</td>
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<tr>
<td>EMS-tracking and trace application</td>
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New applications: connect mobile devices
TO ENABLE ANYWHERE/ANYTIME ACCESS

- Support open interfaces to access business process easily on SAP HANA
- Deliver consumer-grade experience to customers, employees and suppliers
- Seamless integrate with SAP client solutions, such as Fiori, Lumira, or BI tools, to enable building once, run everywhere;

**SAP HANA PLATFORM**

**DATABASE SERVICES**
- Forecasting
- Pricing
- Customers
- Inventory
- Accounting
- Planning

GIS-Geographic Information System

Mobilelink/Smart Data Streaming

Mobile Devices

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Executive overview

BUSINESS TRANSFORMATION

The organization’s top objectives
- Grow the game of basketball on a global basis
- Drive greater engagement among more than 360 million fans
- Maximize the use of more than 65 years of statistical data

The resolution
- Implemented the SAP HANA® platform to manage the NBA’s Big Data
- Developed a single, interactive statistics Web site that is available to fans, the media, NBA teams, and players — www.nba.com/stats
- Teamed up with the SAP Services organization to ensure a speedy and smooth rollout of the Web site, which is powered by SAP HANA

The key benefits
- Repository for league’s entire database of historical data and situational statistics
- Enhanced fan experience with instant access to all statistics
- Significant growth in number of visitors to the NBA Web site

TOP BENEFITS ACHIEVED

Up to 20K Concurrent queries of the statistics database

2x More time spent by fans on NBA Web site

5 minutes After each game, the statistics Web site is updated

Reference Link:
https://dam.sap.com/dam-ws/download?id=zXHe3WvU05Xsk2x1gywnYiWVXE1hrJe0GStVvljrnEMwm0VsHCDKerHEvZeycsS1
MUDO: Unlocking the full potential
DATA WITH SAP® BW POWERED BY SAP HANA®

Objectives
- Consolidate and reduce reports and improve performance with faster responses and a user-friendly interface
- Increase system reliability and availability
- Speed fulfillment of user requests with faster development
- Enable self-service reporting, detailed transactional reports, and new calculations
- Unlock full potential of retail data

Why SAP
- Simpler, leaner reporting with the SAP HANA® platform
- Fast implementation and updates for speedy ROI

Resolution
- Migrated to the SAP® Business Warehouse (SAP BW) application powered by SAP HANA for the speed and flexibility of in-memory computing for Big Data and analytics
- Eliminated data aggregation
- Accelerated data loads and development
- Designed a lean data warehouse
- Eased issue diagnosis and resolution

Future plans
- Reporting for e-commerce, weather, social media integration, customer analytics, budgeting and planning, and sales forecasts
- Dashboards for executives, staff, and customers, and Real-time mobile reporting

”With SAP BW powered by SAP HANA, we can run reports faster. System performance improved and our employees appreciate the speed. We can now report on anything and everything – providing us with deeper insight into our business and our customers. We are unlocking the full potential of retail data.”

-- Rasim Manavoglu, CIO, MUDO

Company
MUDO
Headquarters
Istanbul, Turkey
Industry
Retail
Products and Services
Fashion, furniture, home decoration, and accessories
Employees
Approximately 2,000
Revenue
€133.56 million
Web Site
www.mudo.com.tr

50% fewer reports overall
96% faster reporting
50% reduction in development time
84% faster data loading (from 478 to 77 minutes)
87.5% smaller database (from 2 TB to 250 GB)
95% faster reporting on inventory comparison (from 660 to 33 seconds)
95% faster reporting on inventory sales assessment (from 660 to 34 seconds)
99.6% faster reporting on inventory count per SKU (from 180 minutes to 48 seconds)
Lockheed Martin Story

Inaccurate Lead Times Impact:

- Efficiency in Building Satellites & Space Systems when Materials are Delivered Later than Estimated
- Increased Storage Costs when Materials are Delivered Earlier than Estimated
- Increased Costs to Staff Warehouse Appropriately to Receive Deliveries, Inspect Goods & Delivery to Manufacturing Floor or Stock Room

Why SAP HANA?

- Allows defining complex predictive model
- Accelerated data process with all data in-memory
- Easily embed new prediction calculation into existing business process

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Estimate Lead Time Between Order & Delivery

Some (But Not All) Buyers Entered Material Items & Delivery Lead Times Because Previous System was Cumbersome

Why SAP HANA?

- Allows defining complex predictive model
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- Easily embed new prediction calculation into existing business process
SAP HANA Platform ranked as a leader
THE FORRESTER RESEARCH WAVE™: IN-MEMORY DATABASE PLATFORMS, Q3 2015

- “SAP’s razor-sharp focus on in-memory technology is paying off.” – Noel Yuhanna, Forrester
- SAP HANA Platform earned the highest score of any vendor in strategy and current offering
- SAP is the only company to earn a 5/5 score for vision
- SAP is the only company to receive a 5/5 score for data management features and transaction capabilities
- SAP also earned a 5/5 for execution, market presence, customers, partners, revenue, performance and scale and analytics support

Download the Full Report

Source: The Forrester Wave™: In-Memory Database Platforms, Q3 ’15
Benefits for applications on SAP HANA

**Consumer Grade UIs**
Develop once, run on any device at in-memory speed

**Simplified Architecture**
Use one platform and one data copy for all applications

**Innovative Applications**
Combine analytics, transactions and rich data in real-time

**Accelerated Performance**
Leverage in-memory computing, prebuilt functions and cloud services
# Where to find more information?

## Learn
- SAP HANA Academy
- SAP Open Courses
- SAP Developer Network
- SAP App Development Partner Center

## Try
- SAP HANA Developer Edition
- SAP HANA Cloud Platform
- SAP Idea Incubator
- SAP HANA One

## Experience
- SAP HANA Customer Stories
- SAP HANA Use Case Map
- SAP Customer Journey iPad App
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