

# SAP HANA er svaret hva er spørsmålet?

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Eero Koskinen – Sales CoE Principal, EMEA Database & Technology



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# Real-time in Real-life. Why not Real-time business?



- **real-time analysis**
- **real-time information processing**
- **real-time decision making**
- **real-time execution**

Why wait?

# The age of impatience

Expectation to make decisions in Real Time

Operational excellence requires being able to make decisions at moments of risk

Product leadership require being able to make decisions at moments of adoption

Customers expect business experience to be as satisfying as personal experience

Both expect instant, correct answers to any question



**“Requires shift in thought from transactions to interactions.  
Need to make and deliver offers in real-time.”**

Geoffrey Moore

“The Future of Enterprise IT 2010 –2020. From Systems of Record to Systems of Engagement

# In-Memory Computing

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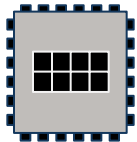


## In-Memory Computing

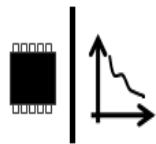
Technology that allows the processing of massive quantities of real time data in the main memory of the server to provide immediate results from analyses and transactions

# Hardware + Software Innovation = Game-Changing

## Hardware Innovation



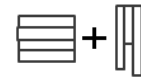
- Multi-Core Architecture (8 x 8core CPU per blade)
- Massive parallel scaling with many blades
- One blade ~\$50.000 = 1 Enterprise Class Server



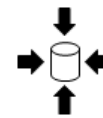
- 64bit address space – 1TB in current servers
- 100GB/s data throughput
- Dramatic decline in price/performance



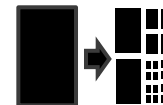
## SAP Software Innovation



- Row and Column Store



- Compression



- Partitioning



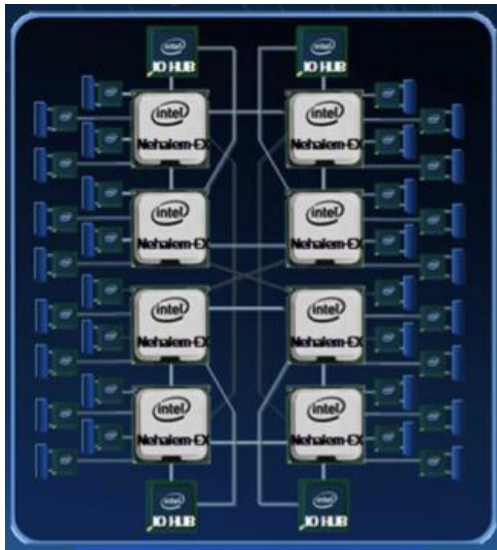
- No Aggregate Tables



- Insert Only on Delta

# Some early numbers

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Volume tests ran with **460bn records**.

Scan speed – 1million records / ms / core

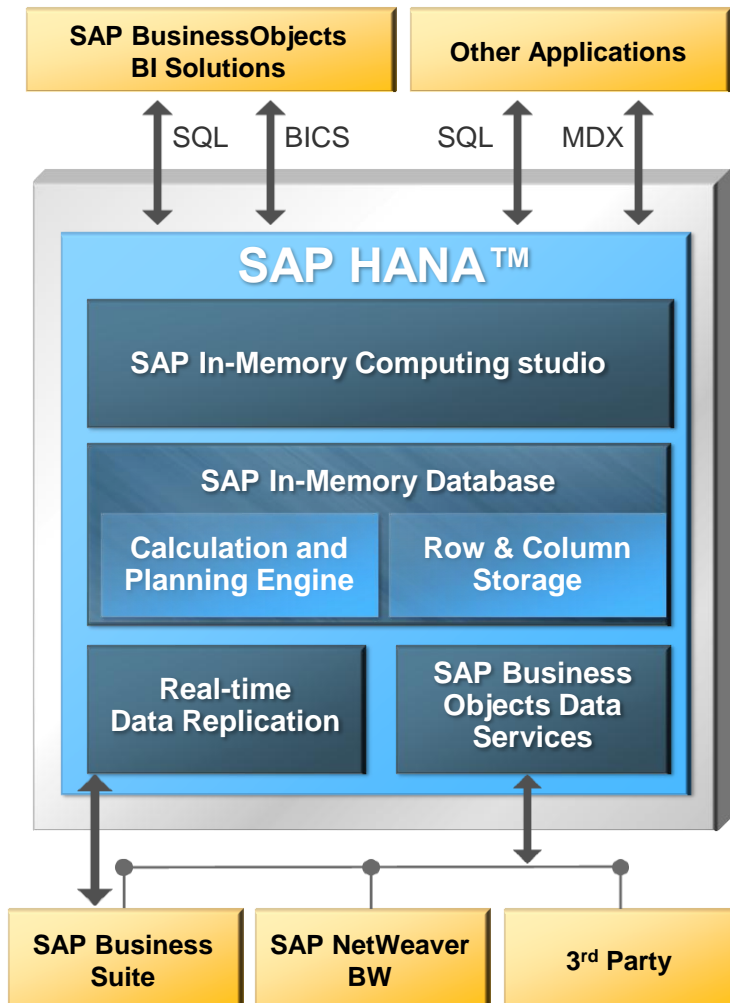
Aggregation speed – 10m records / sec / core

Data Loading – 100m records / 80 sec

200x price performance improvement

# SAP In-Memory Appliance (SAP HANA™)

## Architecture



## SAP HANA™

- In-Memory software + hardware (HP, IBM, Fujitsu, Cisco, Dell, Hitachi)
- Data Modeling and Data Management
- Real-time Data Replication
- SAP BusinessObjects Data Services for ETL capabilities from SAP Business Suite, SAP NetWeaver Business Warehouse (SAP NetWeaver BW), and 3rd Party Systems

## Capabilities Enabled

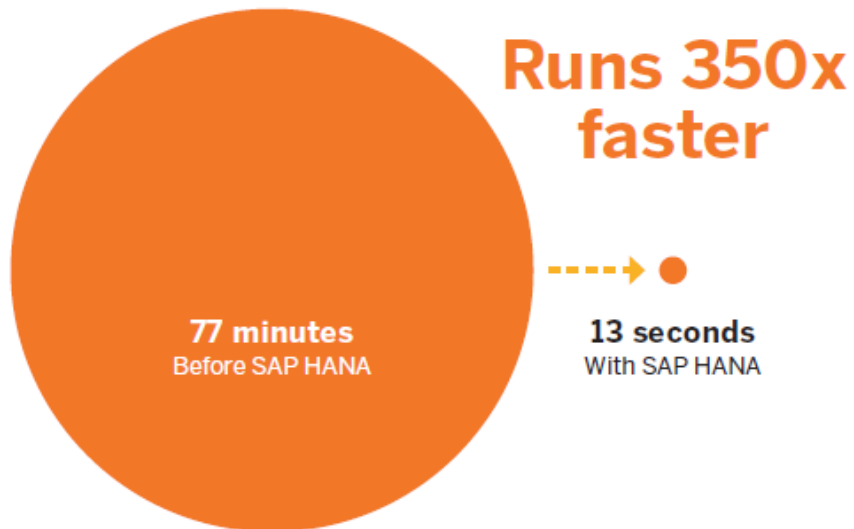
- **Analyze information in real-time** at unprecedented speeds on large volumes of non-aggregated data
- **Create flexible analytic models** based on real-time and historic business data
- **Foundation for new category of applications** (e.g., planning, simulation) to significantly outperform current applications in category
- **Minimizes data duplication**

# SAP HANA Proof-Points



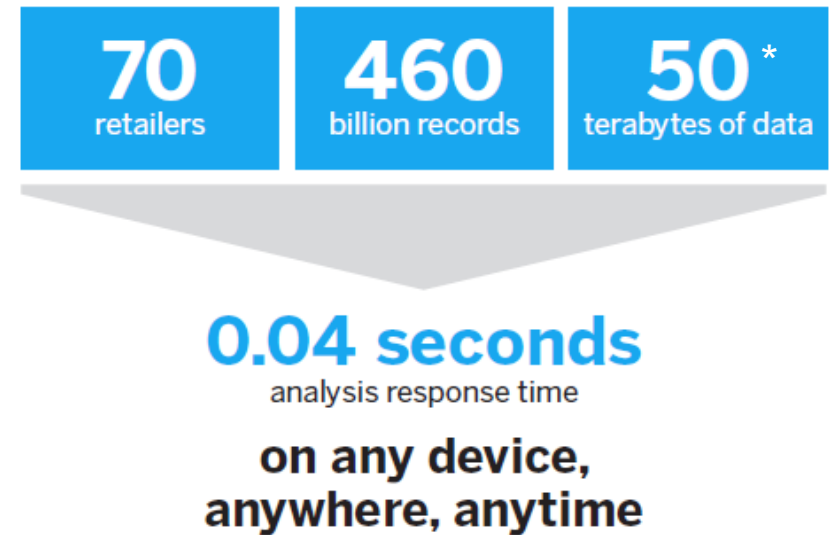
## SAP High Performance Analytic Appliance (SAP HANA)

SAP HANA is the engine of the real-time enterprise. It provides a foundation on which to build a new generation of applications, enabling customers to analyze large quantities of data from virtually any source, in real time. The example below showcases actual customer performance of a core reporting process.



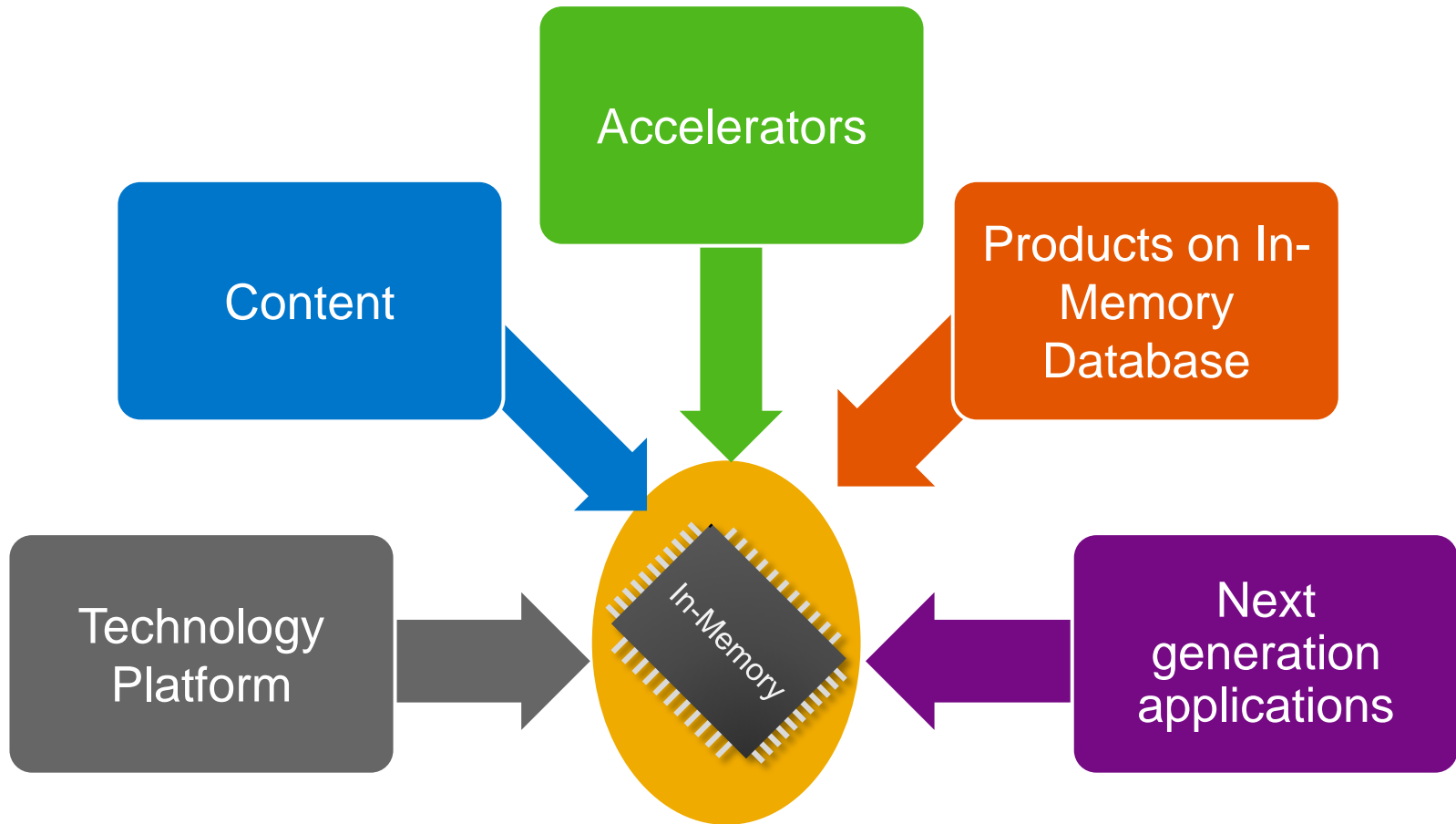
## Experience the real-time Enterprise in action

A live analysis by a consumer products company reveals how SAP HANA analyzes current point-of-sale data in real time—empowering this organization to review segmentation, merchandising, inventory management, and forecasting information at the speed of thought.



\* Please refer to the latest HANA Hardware sizing for the latest certified hardware sizes for maximum storage size on HANA 1.0. Above tests were

# Usage scenarios of SAP HANA appliance



# Application Types & Definition

Technology Platform	Content	Accelerated Apps	Products on In-Memory	Next Generation Applications
Customer specific development.	Reports that are re-built on HANA using a BI frontend.	Speed up existing business suite functionality/applications through a side-by-side scenario with HANA.	Existing applications and strategic investment areas that may be disruptive.	New applications that we have not delivered before. Native in-memory applications.

- E.g. Nomura Research Institute was able to use SAP HANA to analyze traffic information in Tokyo, and gained the ability to search through **360 million** data records in **approximately 1 second**.

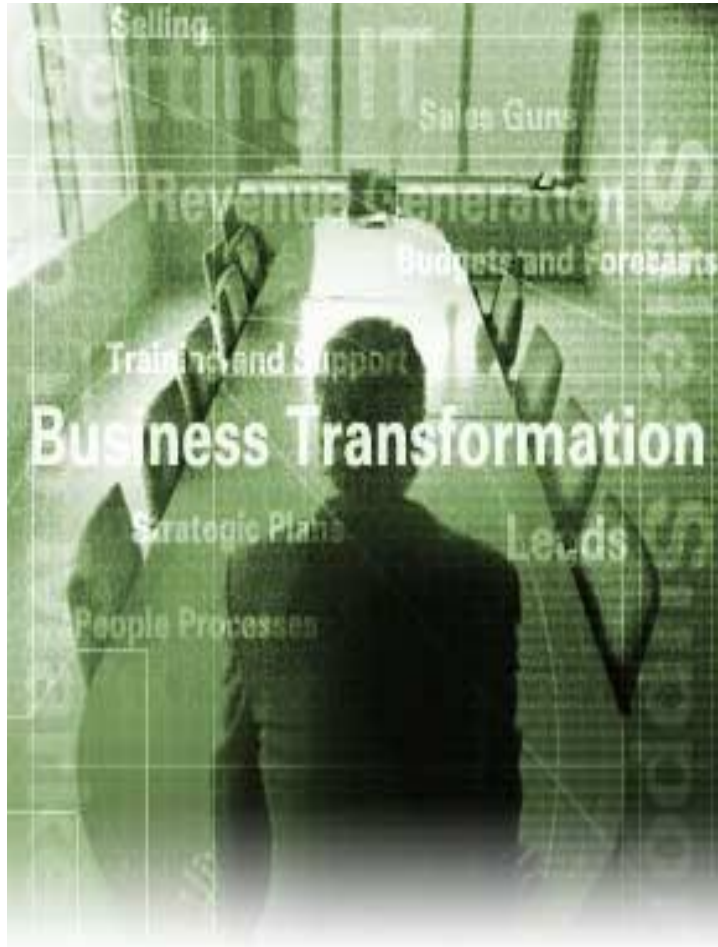
- RDS **ERP** operational reporting (RTC July 2011)
- RDS **CRM Pipeline Analytics** (RTC Q3/11)
- RDS **ERP** advanced **op. reporting**, incl. Financial Spend and Customer Factura Analysis (RTC Q3/11)
- RDS **Banking Analysis** incl. transaction history and financial reporting (RTC Q4/11)

- RDS **CO-PA** (RTC Q3/11) (may also include Material ledger, General Ledger, Product costing)
- RDS **CRM Segmentation** (RTC Q3/11)

- **Customer Analysis: CRPM**, Customer 360, Predictive Customer segmentation, Account Intelligence
- **Trade Promotion Management**
- **Demand Signal Repository**

- **Strategic Workforce Planning**, Smart meter analytics, Medtronic integrated text, personal apps such as home electricity usage
- **Next generation Suite FI, SCM, CRM, HCM ...**

# Transformational Business Value



- **Retail** - Electronic Retailer provided with real-time information to improve productivity and decision-making -> **POC: 1.47B rows of sales data + 1.4B rows of inventory data were processed in .078 sec**
- **CPG** - Global CPG firm needed to analyze 460 Billion records (50 TB) for global POS analysis to predict demand -> **Business Value: improved shelf turnaround from 5 days to 2 and eliminated out of stocks during promotions**
- **IM&C** - Leading wind turbine manufacturing company plans to analyze large volume of machine generated data in real-time -> **Use-case: optimize energy output + predictive equipment maintenance to decrease service costs and increase customer satisfaction**
- **Automotive** – Premium manufacturer of Trucks & Buses plans to analyzes large volumes of data in full flexibility for Vehicle Fault Analysis -> **Business Value: Reduce Warranty claims and improve Company Branding**



BASF is the world's leading chemical company.

**“ The ability to load the entire database into memory, to optimize it, the move to column-based database technology, to be able to then have an environment where both the transactional applications and the analytics are both working off the same source of data; this entire package is extremely compelling. Cost analysis (CoPa) was the most interesting thing to look at in the first step. We saw response times reduce from about 620 seconds to about five seconds in one case. “**

**Andrew Pike, CIO**



Colgate-Palmolive is a leading global consumer products company

**“ For a global business selling products in more than 200 countries and territories, it is critical for us to understand sales trends at a high level as well as at a more actionable level by retail location and SKU to drive our business goals. Prior to SAP HANA\*, we were unable to run full analytics in a reasonable timeframe. With SAP HANA, we will be able to run analytics at a local level on specific brands and locations, and at the lowest level of detail in real time. ”**

***Tom Greene, CIO***

\* SAP's In-Memory Appliance

# Success with SAP HANA™

## Across industries and across the globe

(<http://www.sap.com/platform/in-memory-computing/customer-videos/index.epx>)

Consumer and  
Health Products



Manufacturing



Energy



Communications  
and Media



Services



Technology



# What about the other technologies SAP has:

## - Business Objects, Sybase, etc

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### ANALYZE THE CUSTOMER NEEDS

- Use cases for the business is the starting point!
- ETL vs real time
- All data in-memory vs only some
- Ready content and accelerators from SAP vs custom built
- Accelerating already existing custom processes
- Using SAP HANA as the database for already existing applications
- Gaining the required depth of understanding the data

### CREATE CUSTOMER ROADMAP

- SAP is able to create customer roadmaps based on the deliverables of new technology
- Customer, partner, SAP, service and hw providers need to work together
- Think big and think of things undoable before

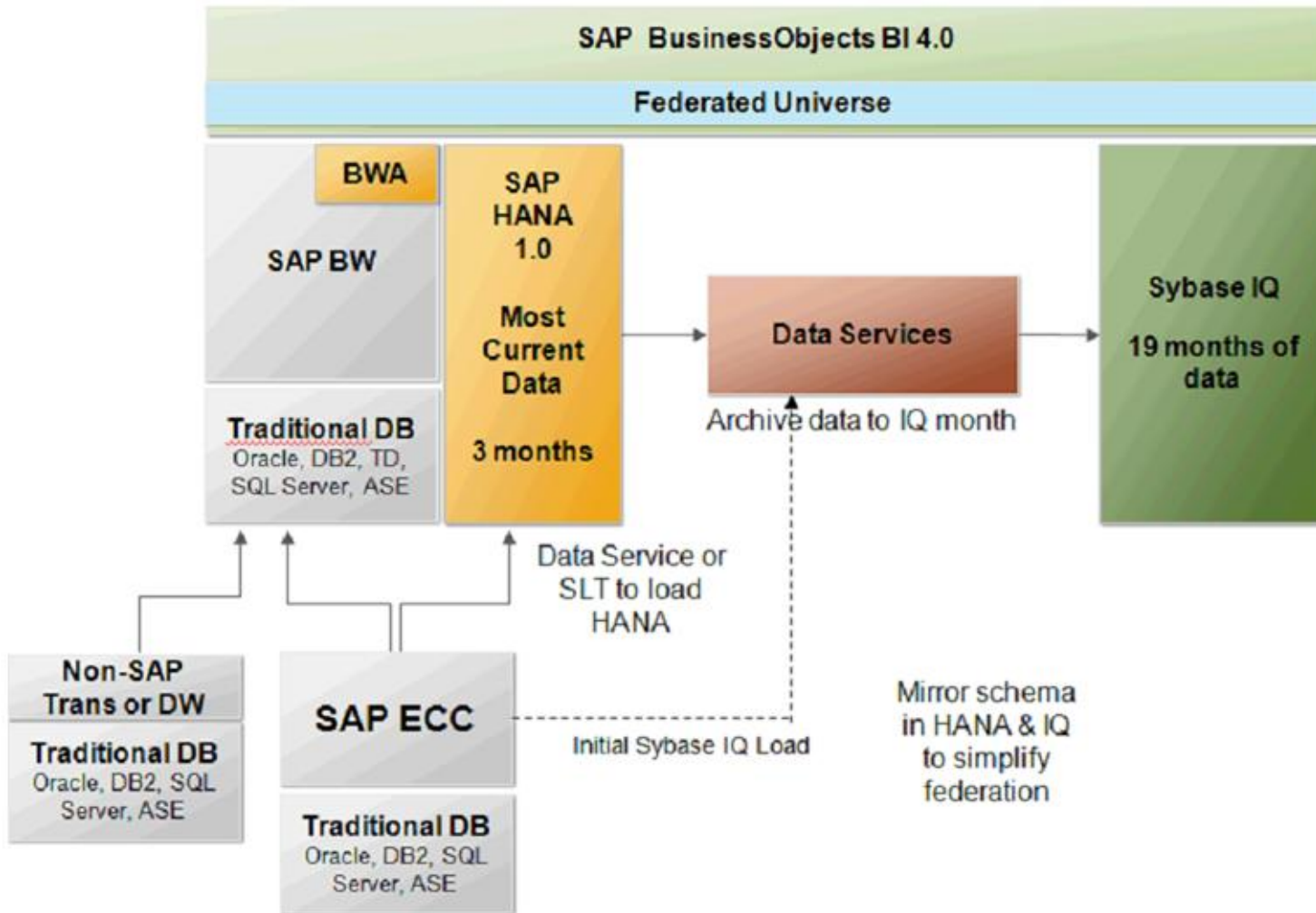
# Putting it all together at a real customer part I/II

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## CUSTOMER NEEDS

- Continue using familiar end user tools without disruption
- Combine SAP and non SAP data in one uniform format / datawarehouse
- Single point of truth
- Lower latency in data loads
- Real time information access
- Using raw data instead of aggregates
  - Aggregations are not predefined
  - Raw data allows in depth drilldown
- Better predictability of customer behavior

# Putting it all together at a real customer part II/II



# HANA – RDS Development Roadmap



Content*	Accelerator
Analytic Application*	Unclassified

\* Analytic Application is priced content, while analysis & reporting content is free with Software purchase

**Available (Q3-11)**

- CO-PA Accelerator
- ERP Operational Reporting V1

**Available (Q4-11)**

- CRM Customer Segmentation
- ERP Ops Reporting V2 (successor for V1)

**Short-Term (Jan'12)**

- Banking: Financial Reporting
- Banking: Transaction History
- RDS for accelerated finance and controlling
- Strategic Workforce Planning Analytics
- Sales Analysis for Retail
- CRM Pipeline Analysis

**Short-Term (April'12)**

- CRM Analytics w/ BW
- Sales & Op. Planning
- Net Margin Analysis
- Public Safety: Real-time Situational awareness (HANA & Mobile)
- GRC Global Trade Services
- SAP HANA becomes RDBMS for SAP BW

**Mid-Term (July '12)**

- Utilities: Grid Analytics (HANA & Mobile)
- Offer-to-Cash : Customer Behavior Analytics
- Sentiment Anatomy
- Retail: Shopper Insight
- Banking: Ent. Risk Reporting 2.0 & Liquidity Risk management
- Banking: Financial Reporting 2.0
- GRC Access Control Accelerator
- IT: Data load from Legacy Apps into HANA



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## Eero Koskinen

Sales CoE Principal -Datawarehousing  
EMEA Business Analytics & Technology

### SAP Finland Oy

Keilasatama 5  
02130 ESPOO  
T +358 10 430 4577  
M +358 40 538 2034  
eero.koskinen@sap.com

**No Limits**

**In-Memory Computing**

*Any  
Questions?*



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