

# New Industrial Applications Empowered by SAP HANA

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**SAP**

**SAP HANA COUNCIL**

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# Examples of New Applications Enabled by HANA

- **Cost of Quality**
- **Electricity Fraud Detection**
- **CAR – Customer Activity Repository**
- **Affinity Analysis**
- **Customer Engagement Intelligence**
- **Unified Forecasting**
- **Liquidity Risk Management**
- **Fraud Management**
- **Finance and Risk Analytics**

## Cloud Enabled

- **CEI: Audience Discovery and Targeting**
- **CEI: Customer Value Intelligence (CVI)**
- **CEI: Social Contact Intelligence**
- **Audit Management**
- **Fraud Management**
- **Liquidity Risk Management**
- **Demand Signal Management (DSiM)**
- **Supply Chain Info Center**
- **SAP Product Stewardship Network**
- **SAP Precision Marketing**
- **Financial Services Network**

# HANA Enables New Applications, New Approaches

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- **Unique Design**
- **Fully Exploits Modern CPU Features**
  - **Memory Cache's**
  - **Vector Instructions**
  - **Multiple-Core**
  - **In-memory data**
- **Speedup of 1,000's of times**
- **Allows Radical Simplification**
  - **No aggregates / Indexes**
- **OLTP + OLAP brought together**
- **A complete processing platform**
- **Simplicity results in**
  - **Higher Productivity**
    - **Users**
    - **Developers**
  - **Greater Agility**
  - **Lower Cost**

# Re-think Data Management for Real-time Business

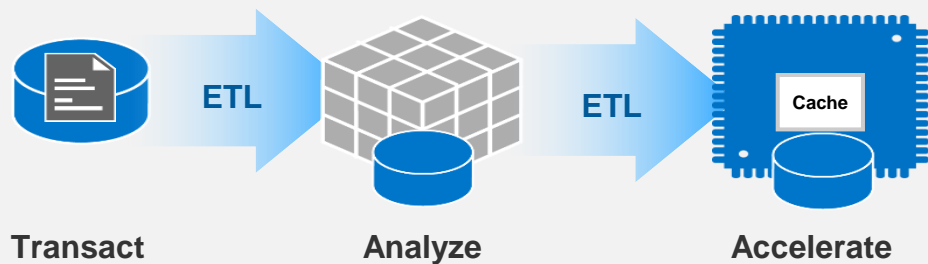
Eliminate redundant data copies, materialization and models



## A Common Database Approach for OLTP and OLAP Using an In-Memory Column Database

Hasso Plattner

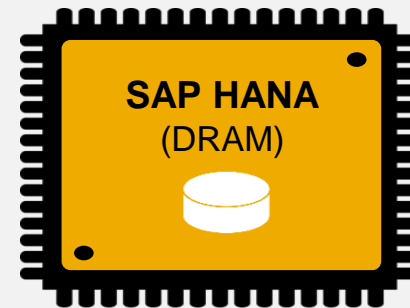
Transactions + Analysis + Acceleration  
processes separated



- 3 copies of data in different data models
- Inherent data latency
- Poor innovation leading to wastage

VS

One atomic copy of data for Transactions +  
Analysis, all in Memory



- Eliminate unnecessary complexity and latency
- Less hardware to manage
- Accelerate through innovation and simplification

# Just Some of the Independent Applications Enabled by HANA



# Warwick Analytics: Cost of Poor Quality

## Business case – Cost of Poor Quality (COPQ)

**Cost of Poor Quality (COPQ) is one of the largest cost items for manufacturing, estimated at 15% to 30% of revenue \***

- \$72Bn pa warranty-related (c. 4% revenue)
- Internal costs (right first time and yields) \$950Bn lowest estimate\*\*
- Excludes non-warranty service e.g. maintenance and PLM costs

\* International Journal of Engineering Dec-12 average was 20%, Wang, Bhote, Juran and Crosby cite up to 40% in some cases

\*\* Warranty costs apply to certain industries, internal costs apply to all manufacturing industries, globally \$6.8 Trillion market

## Manufacturing Priorities

Improve quality/right first time

Warranty cost reduction

Avoid recalls/protect brand

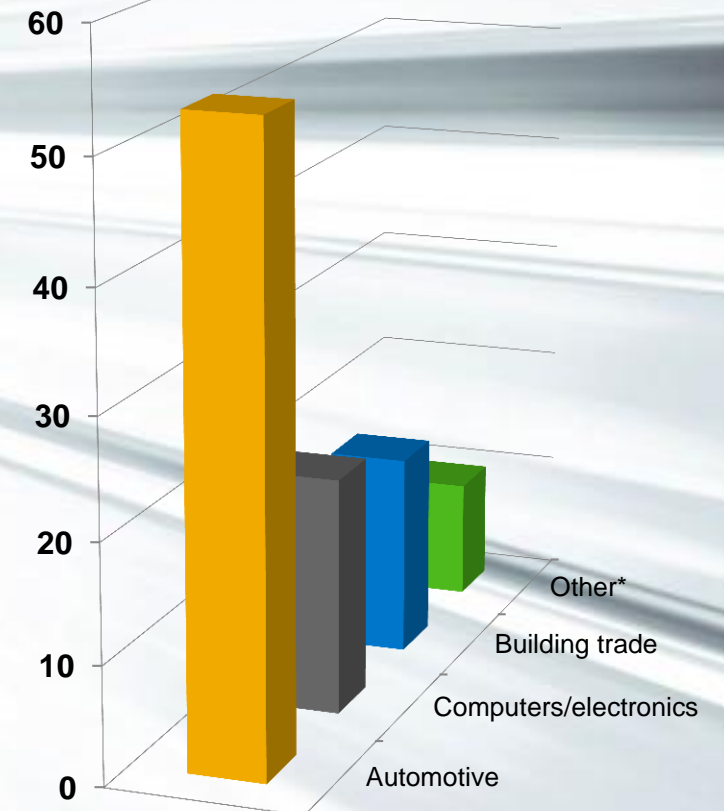
## Manufacturing Challenges

Increasing complexity of products and processes

Fault-finding as a manual hypothetical process

Data issues – both overload and quality

## Warranty Related Spending



# Warwick Analytics: The Company

## Background

- Warwick Analytics' disruptive patented technology stems from over a decade of academic research in the US and UK originating from six-sigma failures in complex manufacturing.
- Initial deployments in consumer electronics, the automotive and aerospace sectors and the provision of healthcare services achieved spectacular results with challenging problems (such as No Fault Found)



## The Technology



Core technology is rapid root cause analysis (RCA) for faults, i.e. QA rejections and also warranty/service failures

- Zeros in on fault cause regions without knowing what the fault is
- Detects fault region in either the manufacturing process or the design even where No Fault Found (NFF)
- Non statistical, non-hypothesis
- Can deal with probabilistic as well as deterministic

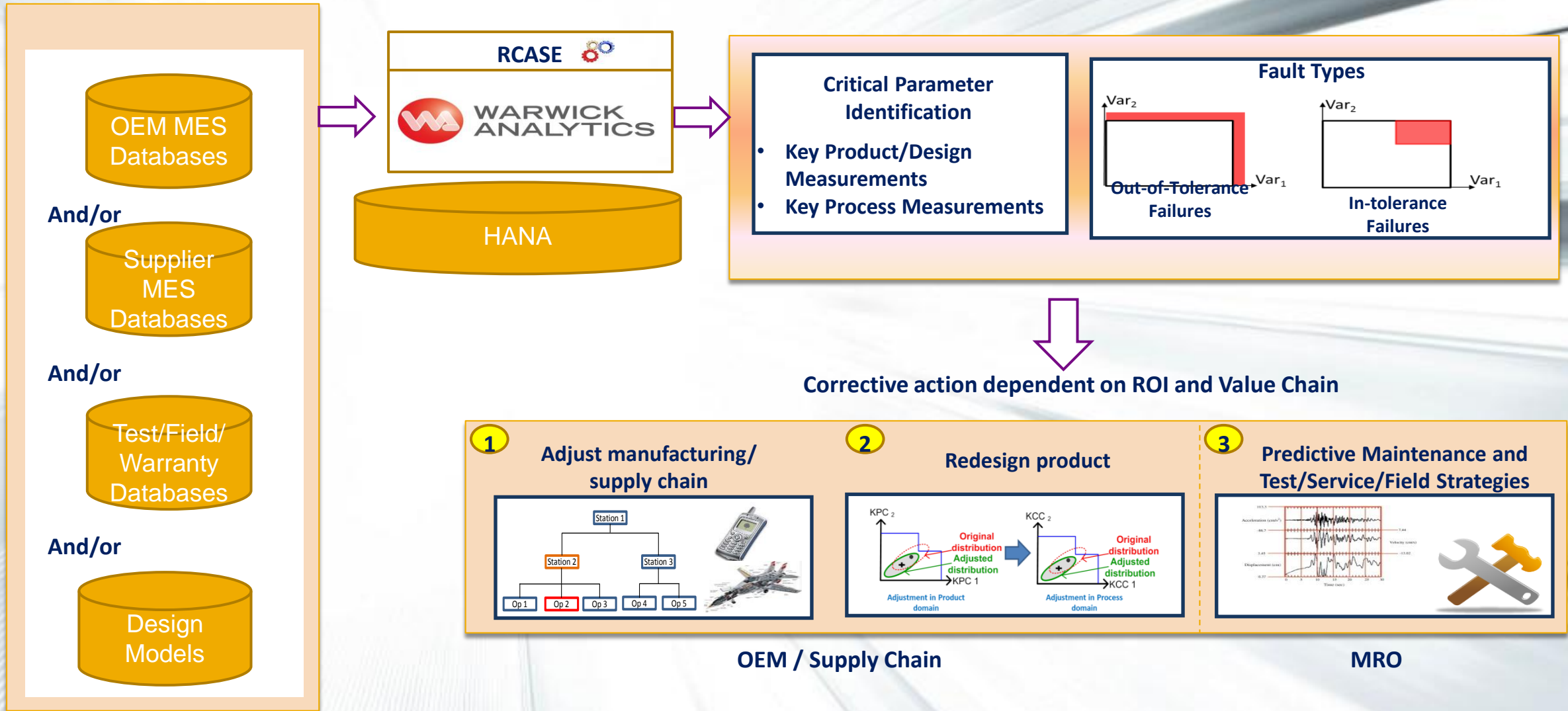
# Why HANA for Warwick Analytics

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- **Warranty and Diagnostic Data Analysis**
- **WA solution is computationally intensive as well as big data**
  - **Quasi-real-time with HANA**
  - **Algorithms optimised for HANA**
  - **Use case time reduced from 36 hours to 35 seconds!**
  - **Reduces load times**
- **Roadmap based on HANA capabilities**
  - **Native algorithm (further speed/performance)**
  - **R integration (statistical reporting on our non-statistical rules)**
  - **Other features on roadmap – streaming and parallelism/ distributed architecture**
- **Cloud deployment pathway (HANA One) moving to on-premise**
- **Enhanced 'data warehouse' – Early Warning and Prevention System**

# Root Cause Analysis Solver Engine (RCASE)

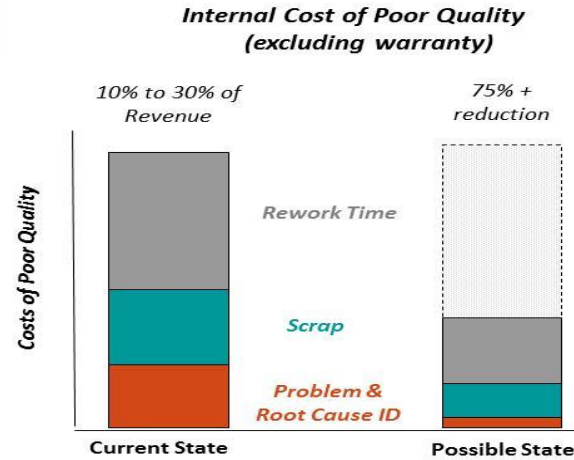
Warwick Analytics "RCASE" analyses disparate data to rapidly zero on fault, and recommend best-fix



# Economic Benefits

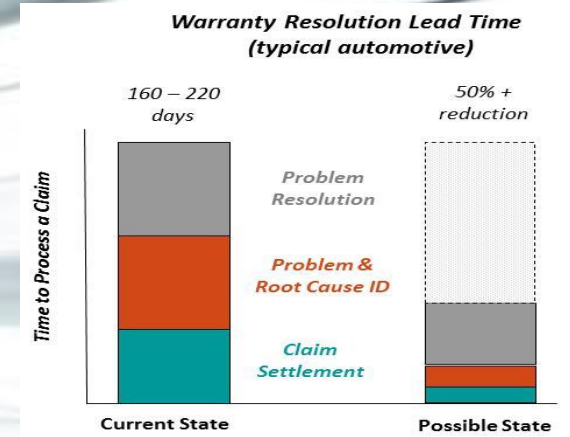
## Increased Yield and Reduced Cost of Manufacture

- Increase yield of specific/multiple product lines
- Reduce scrap, wastage and increase profitability
- Free up resources

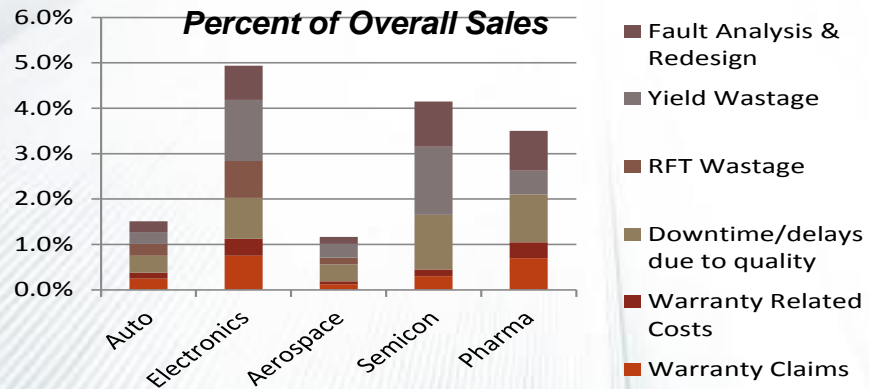


## Reduced Maintenance/Service Costs

- Reduce time to resolve problems
- Validate genuine warranty costs
- Prevent warranty costs and recalls with predictive maintenance

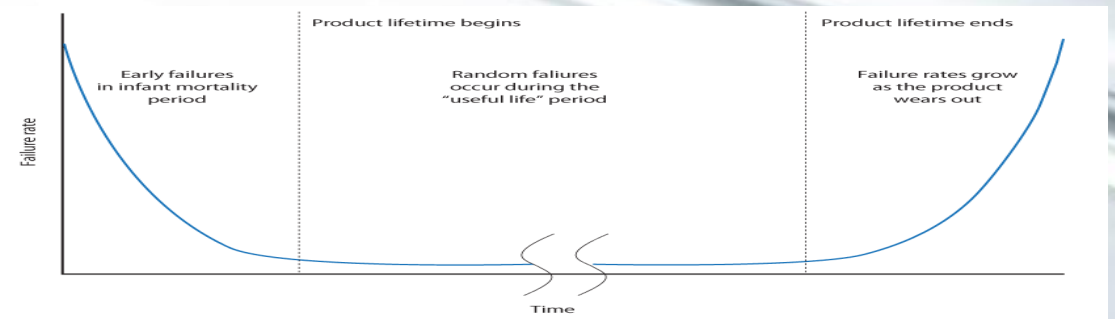


## Indicative Savings - EWAP



## Better Lifecycle: Quicker Launch, Costs, Safety & Environment

### The "Bathtub Curve"



# Example Business Case: Cost of Poor Quality (COPQ)

- **Commercial Validation and Return on Investment for Customer**
  - **Assess COPQ and data availability**
  - **POC will validate technically and commercially**
  - **Theoretical savings of up to 1%-5% of sales full EWAP**
  - **E.g.**  
**Automotive €70Bn sales and €5Bn profits.**  
**1% is €0.7Bn (10% profit)**
- **Return on Investment for Customer**
  - **\$900m saving per annum**
  - **Quick payback \$**



- **Solution Specification**
- **HANA**
- **20Mb per vehicle 5-yr lifecycle, 1.5m vehicles p.a. = 30Tb for 5-years' worth of data**
- **Other specs: Streaming software**
- **Professional Services**
  - **TBD**

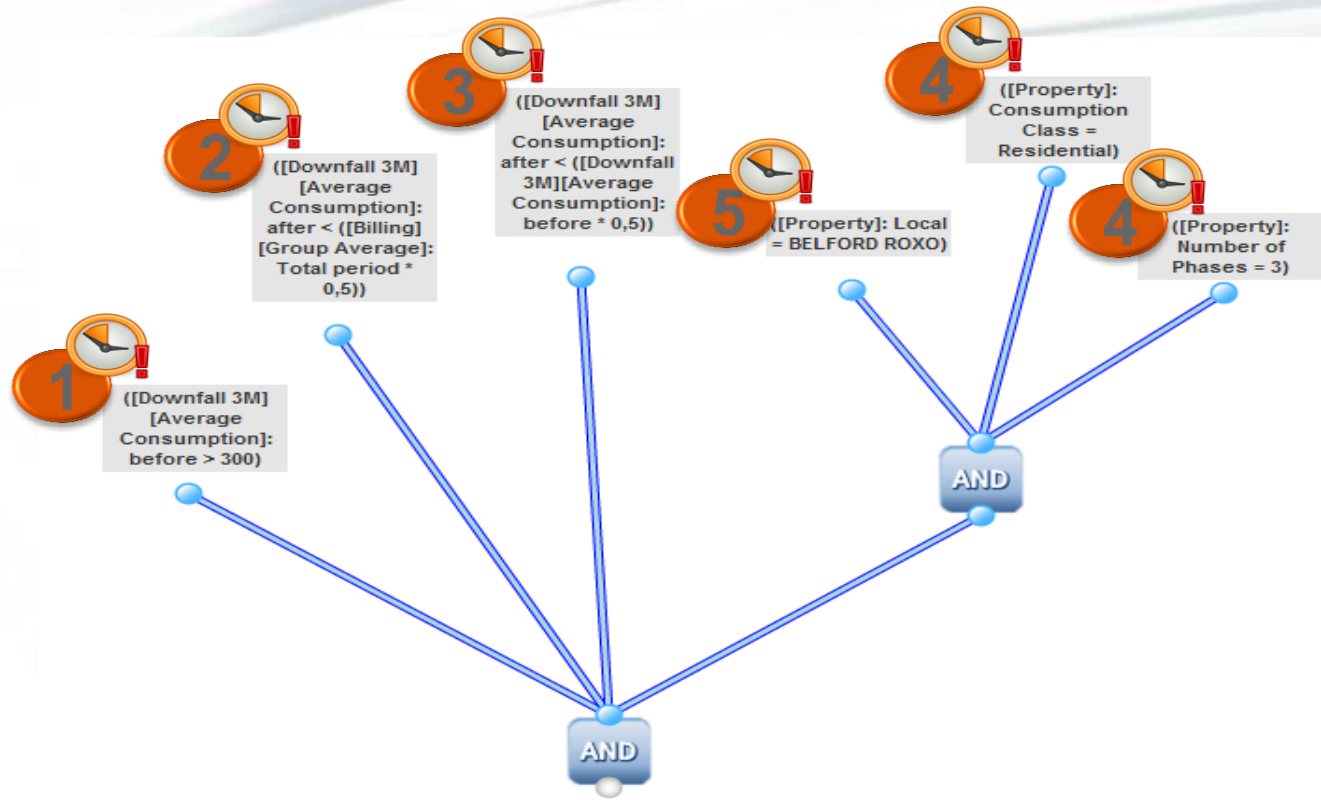


# Energy Fraud Detection



# HANA Advantage for High Speed Processing

- Pattern detection execution time
- 4 million customers
- 5 years of data = 1h 19m
- SAP HANA = 4.24 seconds
- **Ratio = 1,123 times faster**



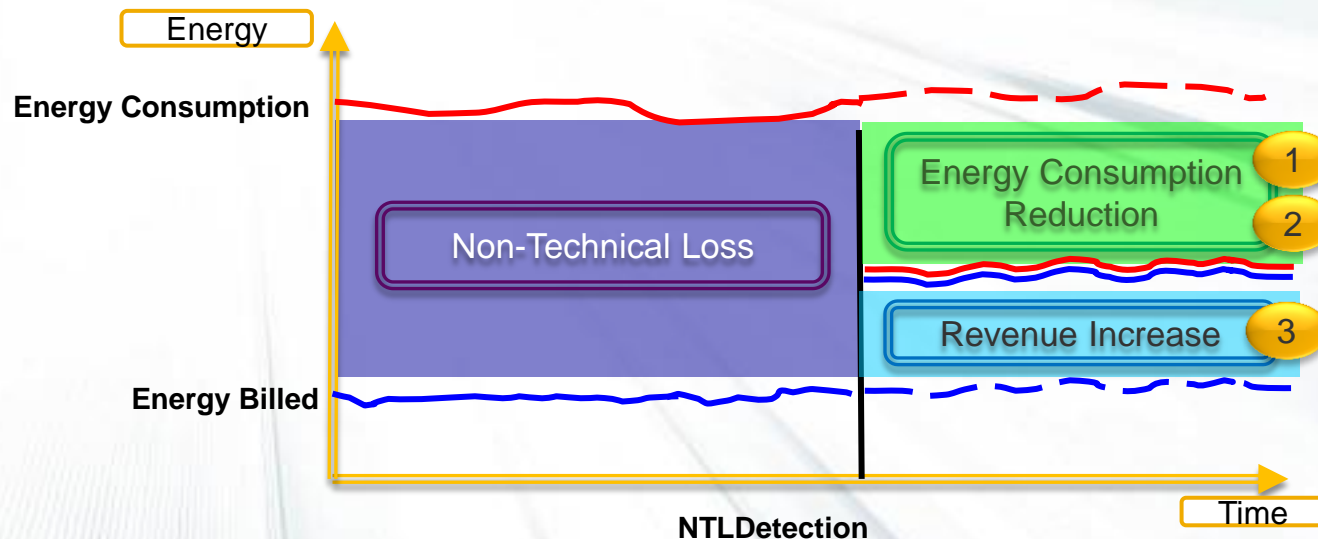
# Revenue Assurance Global Challenge

## NTL reduction drivers

- 1 Citizens want lower rates without NTL
- 2 Governments want energy efficiency
- 3 Shareholders want more ROI

## External conditions

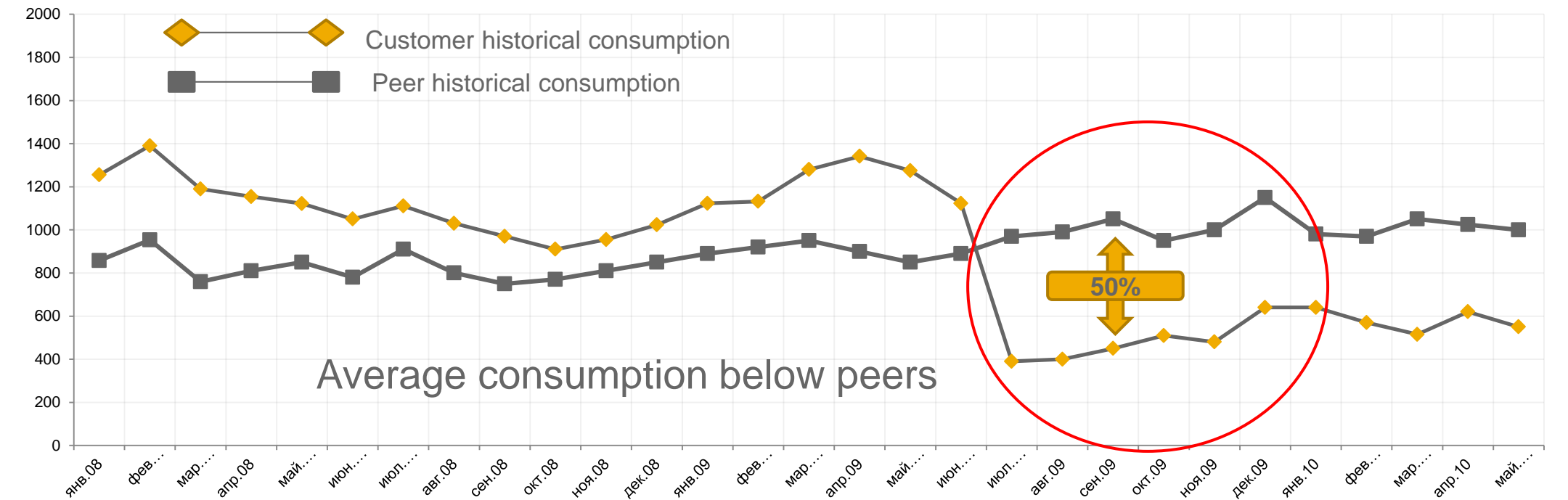
- Global demand increase
- Higher energy costs
- Global warming



# Fraud features

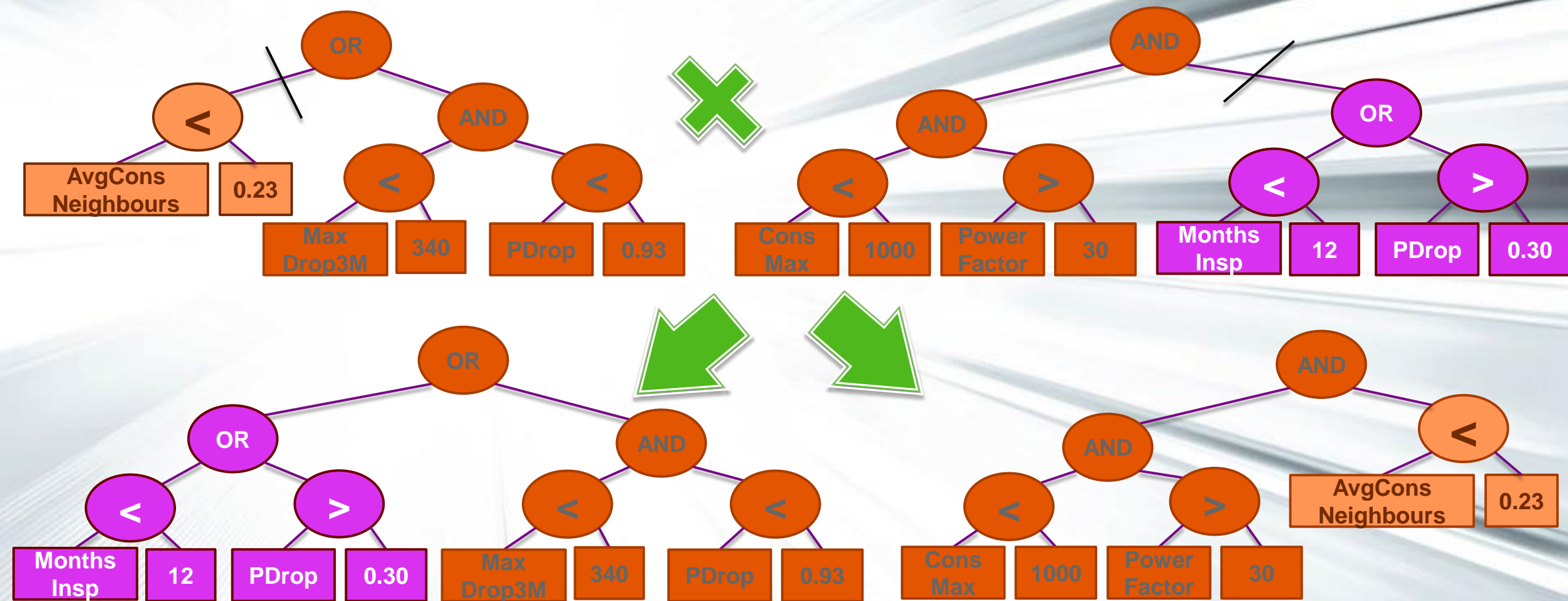


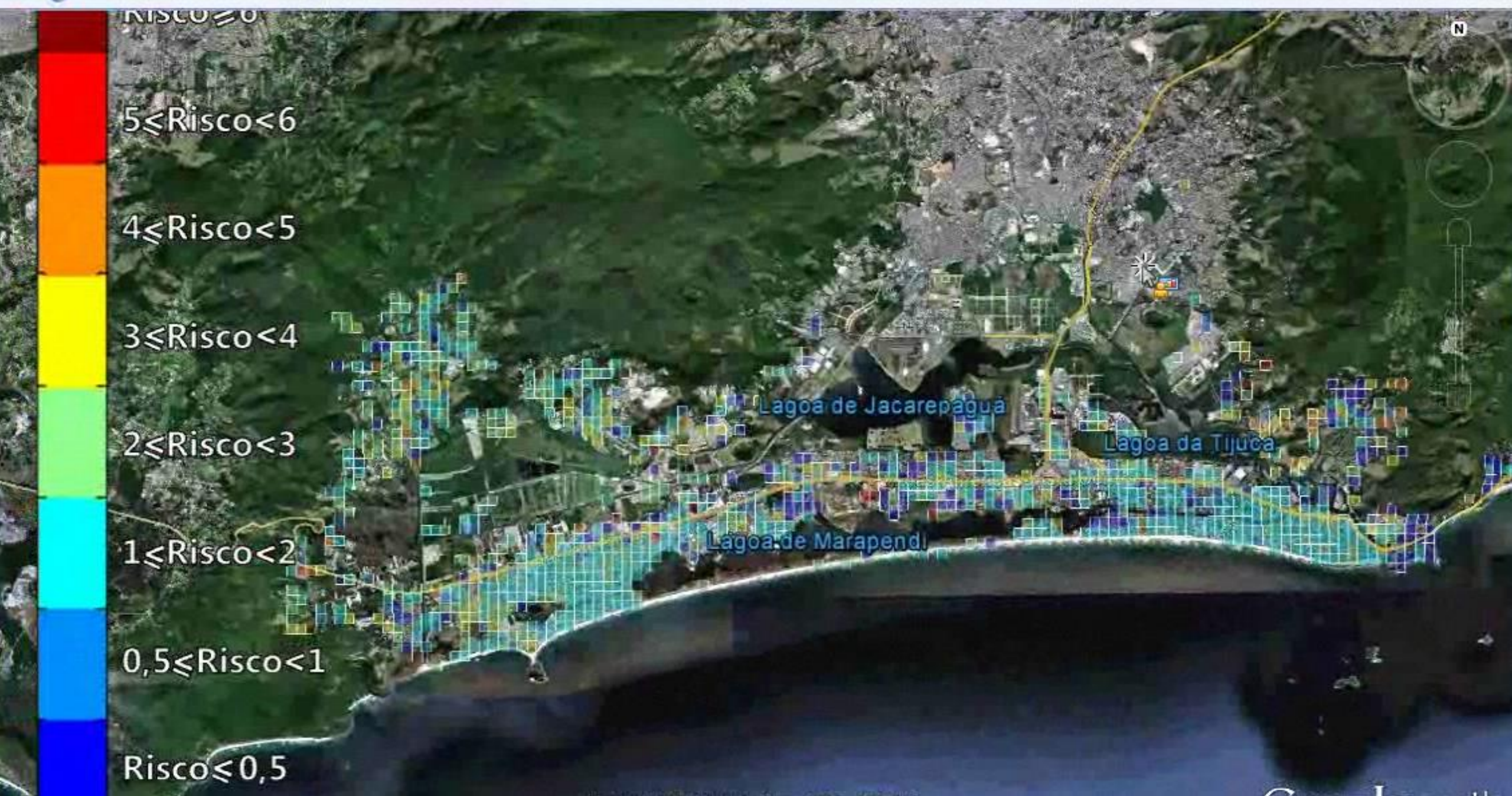
Average consumption 50% lower than compared to similar customers



# Portfolio: Automatic Pattern recognition

## Genetic Algorithm Process: Recombination through Crossover and Mutation





# Results



- 2009, 4 Million customers
- 100.13% of energy recovery increase after 24 months
- Additional invoice of 150 GWh

EBITDA :  USD 40 million per year



### Energy Losses

Light's losses over the grid load totaled 20.23% in 2008, representing a decline of 0.45 p.p. compared to 2007. Non-technical losses, where Company's efforts are focused, presented a reduction even lower, falling 0.53 p.p. continuing the decrease presented in the previous quarters.



Period	Losses (%)
Dec-07	20.68%
Mar-08	20.64%
Jun-08	20.56%
Sep-08	20.47%
Dec-08	20.23%

In order to achieve the regulatory loss level of 19.15% over the grid load (as set by the November 2008 tariff revision), the Company has been investing in its conventional strategies and the use of new technologies.

### Normalizations



Year	Recovered Energy (GWh)
2007	88,084
2008	144,611

In 2008, the number of meters increased, enhanced the identification of the company's clients energy and 0%.

### METERING EXCELLENCE AWARDS LATIN AMERICA

to reduce losses, the metering and distribution combat losses. An example of this individual electronic meters in direct Metering Control Center (CCM), which more than 120 km of network with multiplex cables. CCM began

At the end of 2008, initiatives aimed at reducing energy theft in regions of high loss ratios and where conventional initiatives have not been effective. The installation of individual electronic meters in income condominiums in the regions of Barra and São Conrado was completed, a step that enables loss reduction in areas with high consumption clients and that enables fast return on the investment. In terms of concentrated efforts, several inspection and normalization teams have been sent to the region, where they work together to fight fraud and constantly monitor repeated offenses. The evaluation of the initiative's results helps define the areas for the implementation of new technologies programs and network protection.

6

# SAP Fraud Management for Banking

Anti-Money Laundering & Anti-Financial Crime

Detection, Investigation and Case Management by SAP



# Financial Crime Causes Losses Running into Billions



**5%**  
of global GDP

Total losses worldwide

**\$ 3,500,000,000,000**

Total losses Germany

**€ 3,700,000,000**



Total losses in your financial institution



REPORT TO THE NATIONS ON OCCUPATIONAL FRAUD AND ABUSE  
2012, ACFE

# Challenge: Protection of your Financial Resources



## Fast changing and new Fraud Patterns with increasing damage

- Phishing in general
- Tan Fraud, newly also via mTan
- Payment Fraud
- Internal Fraud / Optimization of Provisions
- New Patterns, currently UNKNOWN!



## Increasing regulatory Requirements

- Tax Law
- AML & Countering Terrorist Financing
- Detection and Indication of Fraud Cases
- ....



BaFin

**Current**

**§ 3<sup>rd</sup> AML Directive**

# Fraud management challenges

- Revenue loss related to fraud
- Cost /results ratio of dealing with fraud



- Manual, inefficient, slow and inaccurate process
- Too many false positives
- Not scalable /adaptable



- Volume of transactions
- Complex and evolving fraud patterns
- Fraud investigation impact on the business



# SAP Fraud Management for Banking

## Value proposition

### Paradigm Shift

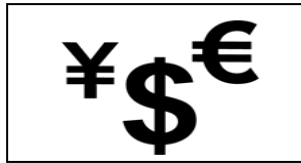


Improved fraud management on real-time analytics:

- > From reactive to proactive
- > Reduction of false positives

**15%** less  
false positives = \$\$\$

### Cost Reduction



Leverage platform & simplify landscape, reduce project risk and reduce total cost of ownership

Up to **30%** savings

### Compliance



Increasingly demanding regulatory requirements to perform daily intraday financial crime analysis

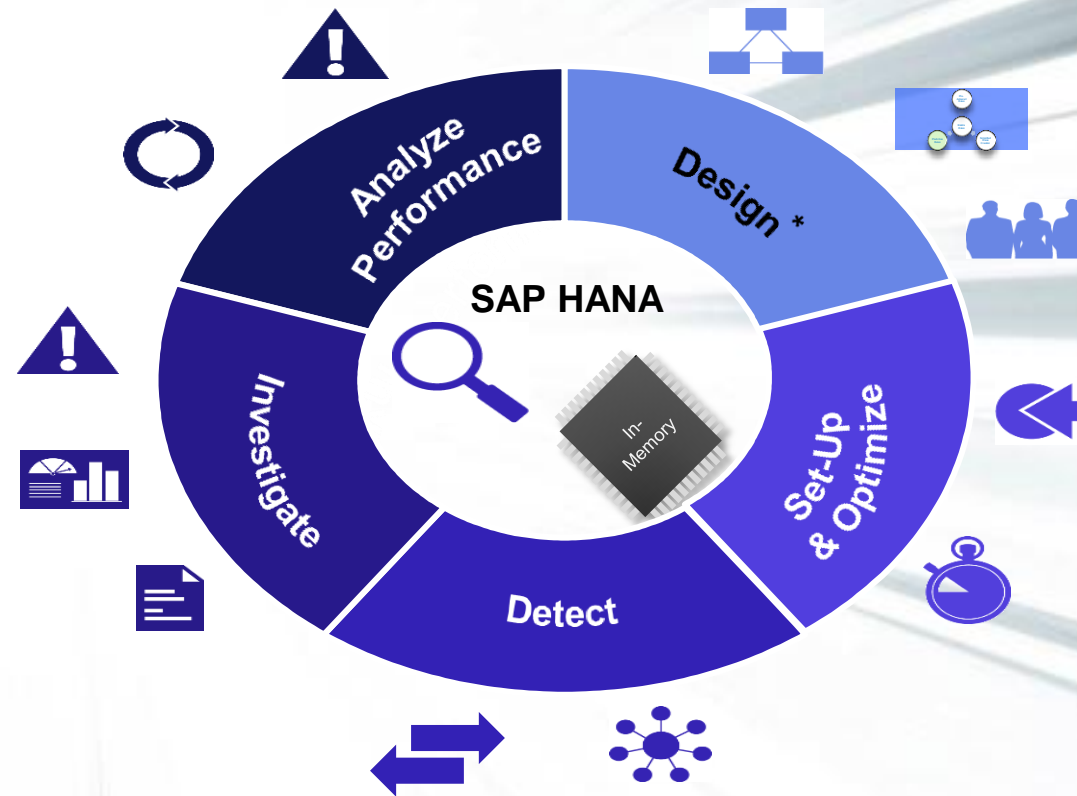
Compliance out  
the Box of

# SAP Fraud Management powered by SAP HANA

Achieve effective and efficient fraud management

Monitor performance through dashboards, reports and KPI's to improve detection efficiency

Manage alert workload with efficient evaluation, qualification and remediation of fraud



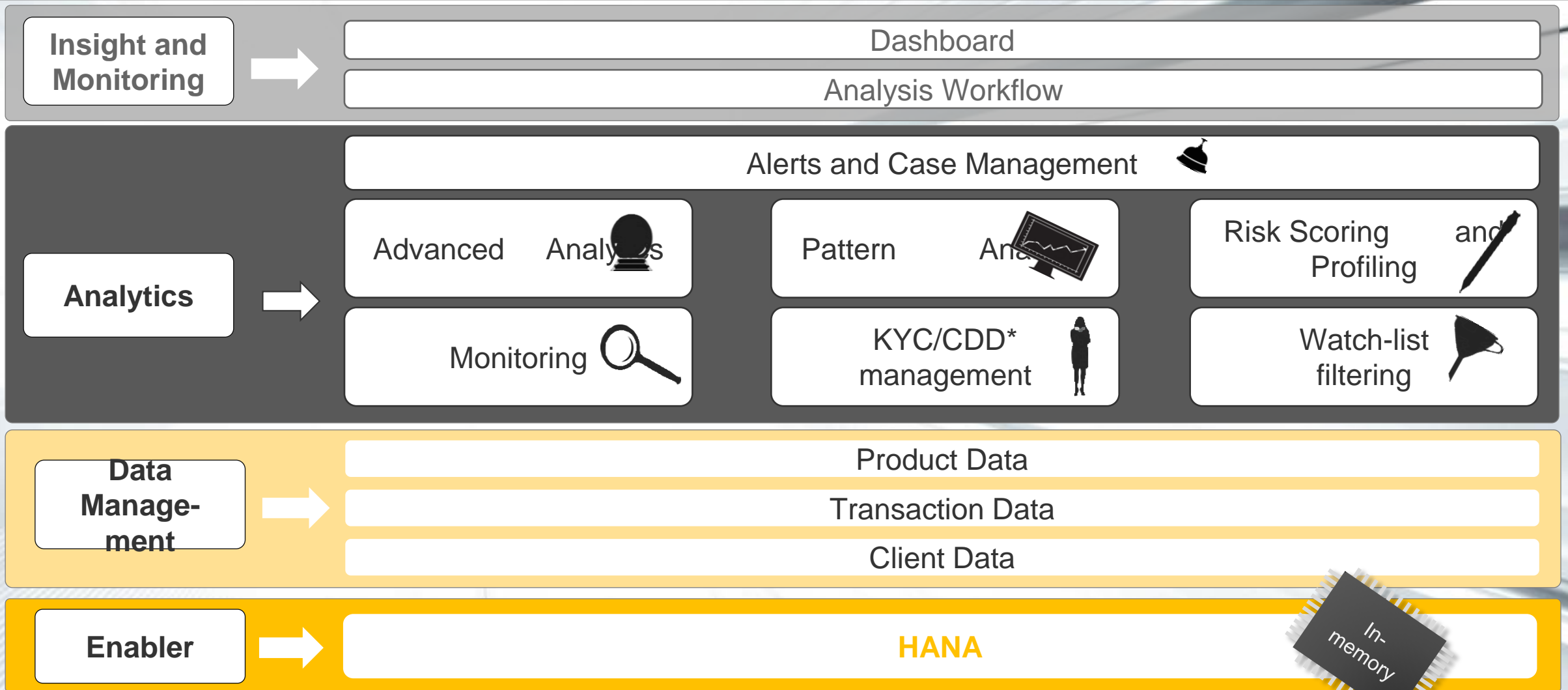
Prepare data and enable /build detection rules

Define fraud detection strategies and optimize using calibration

Execute mass and real-time detection and stop suspicious business transactions

(\* ) Can be preformed with SAP HANA studio, SAP InfiniteInsight (optional) or 3<sup>rd</sup>-party tools

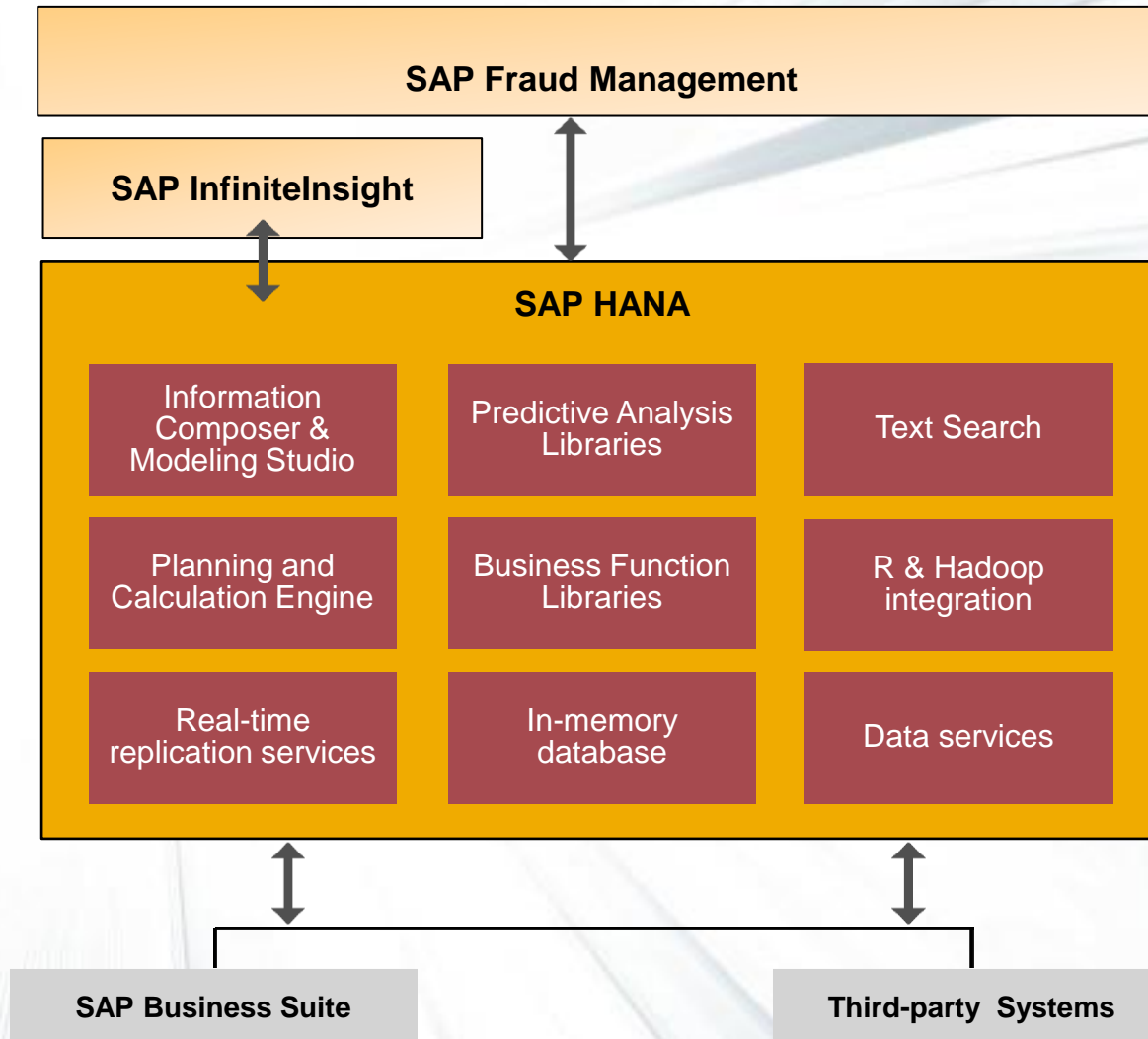
# The Financial Crime Risk Management Platform



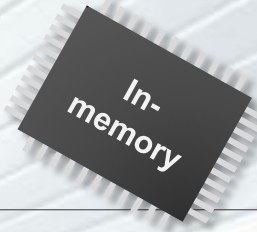
\*KYC/CDD – Know Your Customer / Customer Due Dilligence

# SAP Fraud Management

## The foundation – SAP HANA



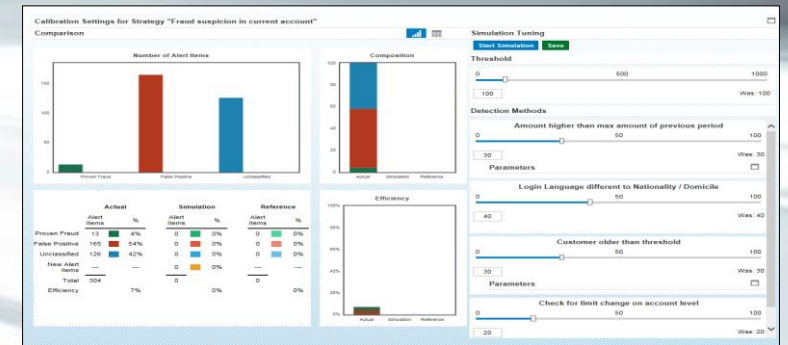
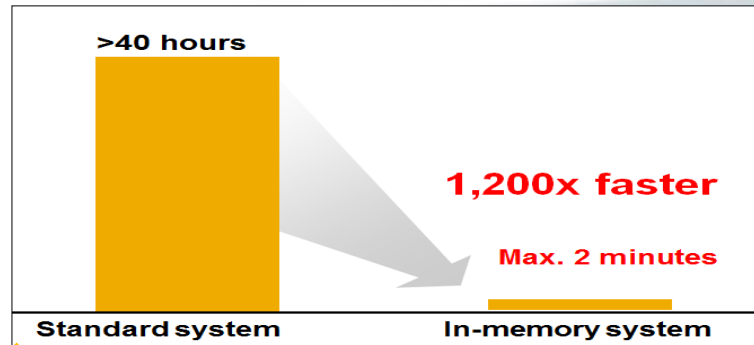
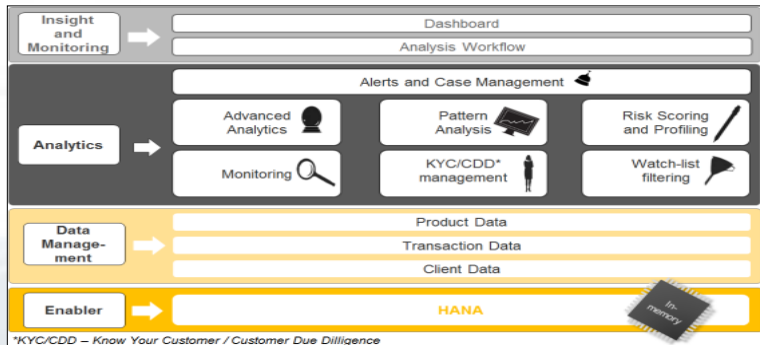
# In-Memory Technology Is the Enabler



Holistic approach

Faster detection

Greater accuracy



Proof of Concept Tier 1 Bank

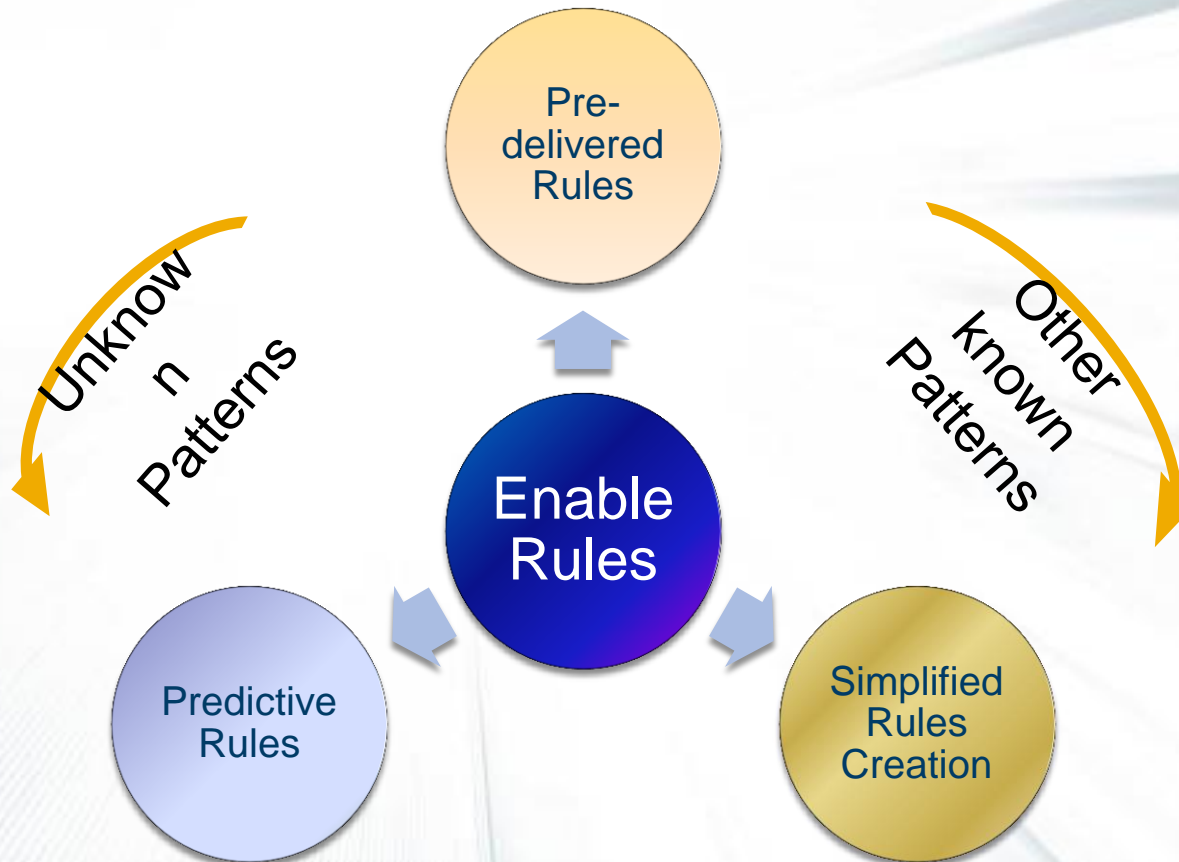
- 10 million customers
- 20 million accounts
- 1 billion transactions

# Enable Detection Rules

Leverage pre-defined content\* and build new rules



High-performance processing of very large data volumes



## Key Benefits

**Quick start** core fraud detection schemes and test them on your data leveraging pre-delivered rules

Easily build detection rules for other known fraud patterns using the **simplified rules creation** feature

Option to extend detection rules by identifying unknown patterns in historical data using **predictive**

(\* Content for AML and AFC will be provided by a partner

# Pattern analysis

Pattern analysis - embedded or highly integrated in SAP HANA

## Big Data



- Terabytes analyzed at the speed of thought
- Compress large data sets into memory
- Integrate insights from Hadoop analysis

## Text Search and Mining



- Native full text search
- Graphical search modeling
- UI toolkit

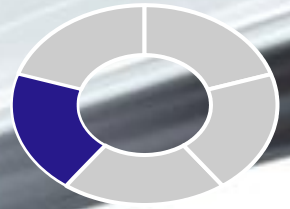
## Predictive Analytics



- Unleash the potential of Big Data
- Intuitively design and visualize complex predictive models
- Bring predictive analytics to everyone in the business

# Comprehensive alert management

## Leverage advanced inquiry and analysis features



### Full insight into all relevant information at the fingertip

Alerts (5121)

Assign Release Show: All Alerts

Rating	Risk...	Risk Value	Type	Alert	Investigation Rea...	Due Date	Inv. Object Type	Object	Status
▲▲▲▲▲	20,00	1.303,00 EUR	☛	41...	Internal Fraud Empl	12.07.2014 14:23:12	INTFR - Business Partner	C_100	Not Started
▲▲▲▲▲	2,40	112.250,00 EUR	☛	41...	External Fraud Onlin	28.06.2014 17:14:59	EXTFR - Business Partne	6600	Completed
▲▲▲▲▲	2,40	112.250,00 EUR	☛	39...	External Fraud E-Ba	21.06.2014 14:18:55	EXTFR - Business Partne	6600	Not Started
▲▲▲▲▲	11,60	1.900,00 EUR	☛	41...	Internal Fraud Empl	12.07.2014 14:23:12	INTFR - Business Partner	C_101	Not Started
▲▲▲▲▲	6,40	500,00	☛	EXTFR - Business...					

EXTFR - BUSINESS PARTNER 6600

Set in Process Reopen Assign

**ALERT INFORMATION**

Items: 2  
Investigator: Jan Richter  
Fraud Division:  
Alert: 41173  
Investigation Reas...: External Fraud Online Banking  
Due Date: 28.06.2014 17:14:59  
Status: Completed  
Workflow Phase: Dispatching  
Transfer Status: Not Transferred  
Category:  
Group:

**EXTFR - BUSINESS PARTNER**

Partner Name: Joe Miller  
Branch Code: US75  
Domicil country: DE  
Birth Date: 18.09.1938

**RISK ASSESSMENT**

Rating: ▲▲▲▲▲  
Risk Factor: 2,40  
Risk Score: 240  
Risk Value: 112.250,00 EUR

Detection Customer Network Analysis Documentation Decision

### Key Benefits

Improved accuracy of fraud detection with reduced false positives and negative detections

Availability of comprehensive and up-to-date information in investigation avoids double work

Increase investigation ROI by focusing on high score /

# SAP Financial Crime Risk Management and beyond

1 System  
For all Use Case

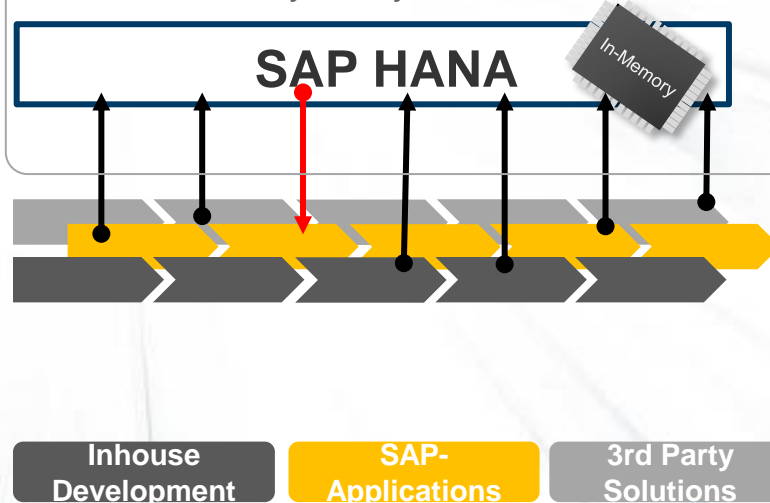
Fast in-memory data  
management

Bidirectional  
communication

Open and flexible data  
model

## SAP FM for Banking:

- ✓ Fraud Detection and Investigation
- ✓ Money Laundering
- ✓ KYC/CDD/EDD
- ✓ Sanctions/Terrorism Lists
- ✓ Flexible, easy Analysis & Methods



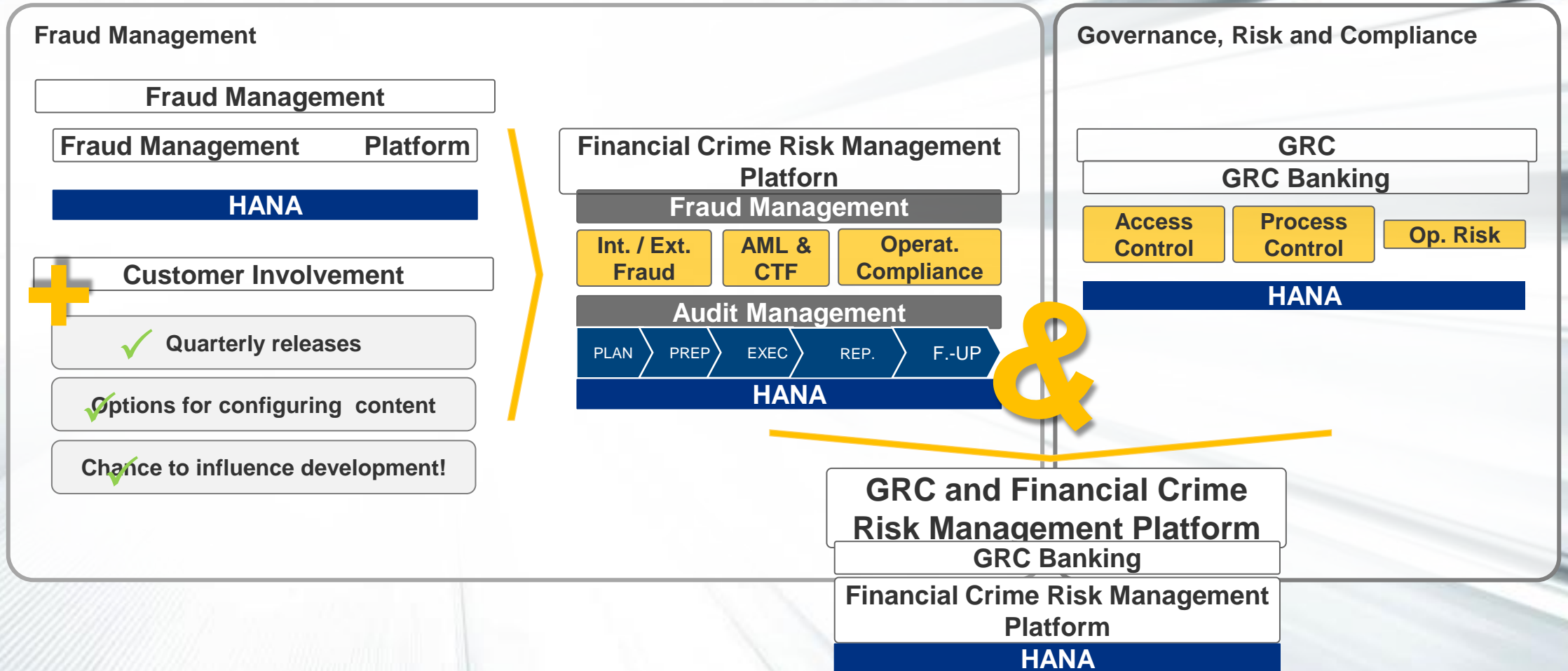
## Real-Time and Near-Time Analysis



## Supporting a new Paradigm

- Losses could be reduced and avoided
- Criminal Activities could be detect faster
- New Patterns could be detected and analysed more effectively

# Outlook



# SAP Customer Activity Repository

Public



**SAP**RETAIL.  
*Right. NOW.*

# What if...?



**All your multichannel sales activity shared a common platform understood every transaction made and that could associate each sale with a unique consumer...**



**...and what if that platform could segment customers and sales transactions anyway you wanted – by attributes, statistics, predictive analysis, etc.?**

## ... and What if ...?



**The same platform knew exactly how much inventory you had, where you had it...**

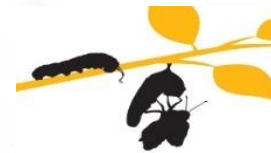


**...and how much it cost**

## ... and What if ...?



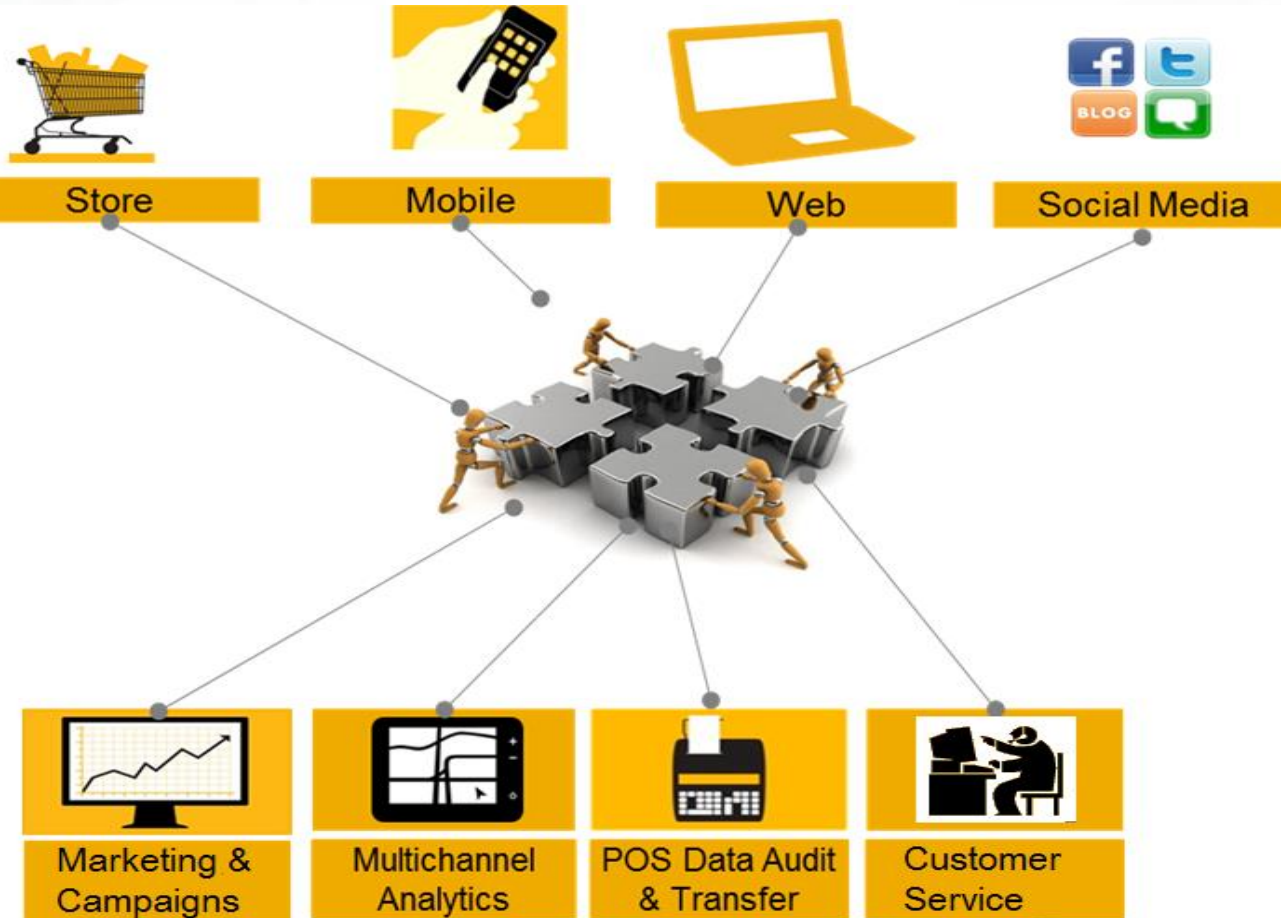
**All your planning and execution applications; and Management Information - sat on the same platform, exposed to all this wealth of data?**



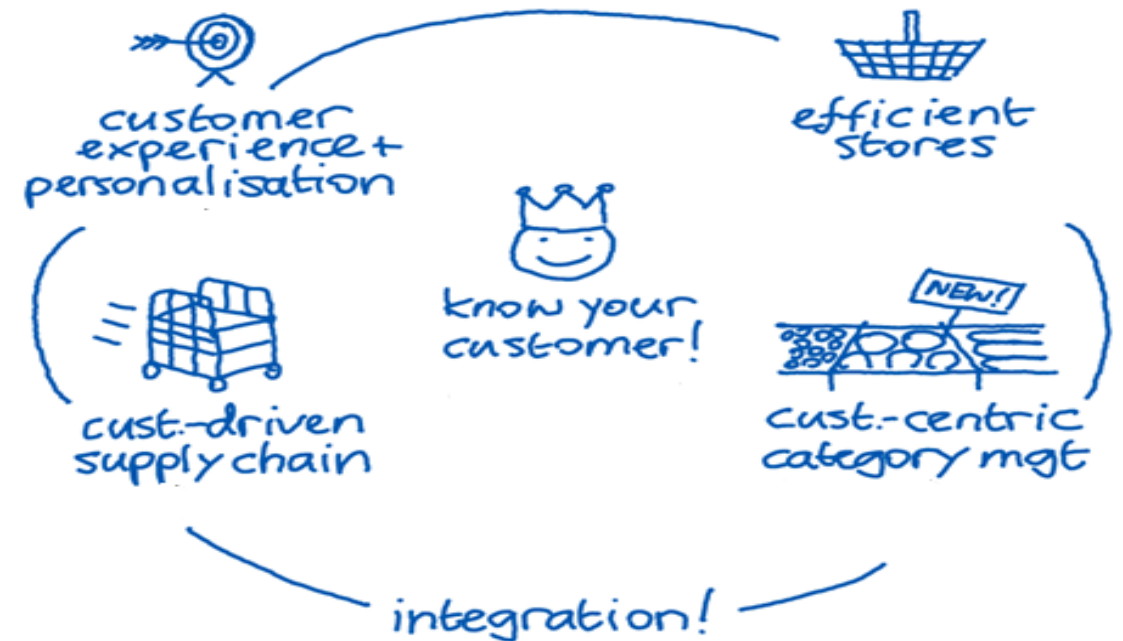
**... and that platform knew all this right now, in real-time, as it was happening; not tomorrow, or the day after ...**

# CAR - Customer Activity Repository

## Foundation for customer centric applications....



SAP CAR collects consumer and stock data from all channels **in real time** to support all lines of business.....



# SAP Customer Activity Repository – Building Blocks

SAP Promotion Management

SAP Assortment Planning

SAP Store Allocation Planning

SAP Planning for Retail

SAP Retail

Master Data

Sales Documents

Inventory

Point of Sale

Sales Transactions

SAP CRM

Customer Data

## SAP Customer Activity Repository (CAR)

SAP HANA Live - Analytics

SAP HANA (in-memory computing)

POS Data Transfer & Audit

Unified Demand Forecast

Inventory Visibility

Multichannel sales transactions

Demand Data Foundation

SAP On Shelf Availability Algorithms

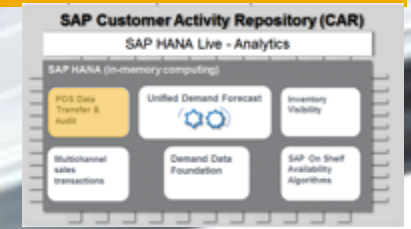
SAP Affinity Insight

SAP Customer Engagement Intelligence

SAP Business Warehouse

Hybris & CEC Interaction Centre

# POS Data Transfer & Audit



**The Customer Activity Repository incorporates an extended version of the software component for POS Data Management. Nonetheless SAP POS Data Management remains an independently sellable solution.**

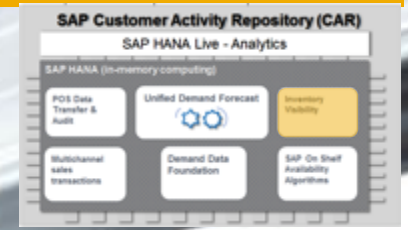
## Solution Scope

- Functional scope contained in CAR is essentially identical to POS Data Management
- POS Data Transfer & Audit within CAR does not require BW/BI Content anymore

## Migration strategy for POS DM on BW/HANA

- SAP will provide a migration strategy for POS DM 1.0 deployed on BW/HANA customers
- Reports to migrate POS DM 1.0 TLOG and non-TLOG data will be provided
- Migration from “traditional” POS DM to CAR will be supported as well

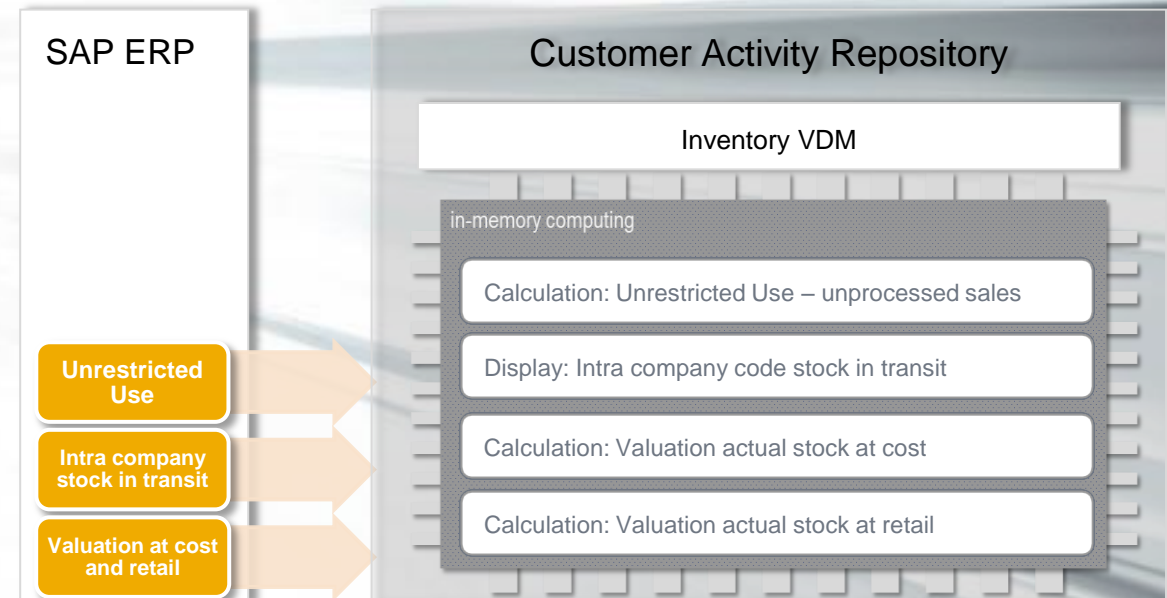
# Inventory Visibility



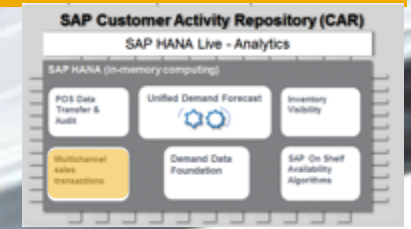
**The Customer Activity Repository offers real time visibility into current stock situation in the stores by taking ERP stock in unrestricted use and unprocessed sales into account.**

## Solution Scope

- Inventory information is replicated from ERP into CAR via SLT (SAP Landscape Transformation)
- This inventory information in CAR is combined with unprocessed sales transactions from POS DM to derive current stock in stores
- Intra company code stock in transit is displayed to inform the user about deliveries on their way to the store
- Additionally inventory valuation at both, cost and retail sales are calculated
- Virtual Data Model for inventory data



# Multichannel Sales Transactions



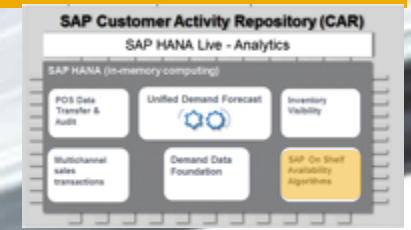
The Customer Activity Repository captures sales transactions across multiple channels by introducing a new multichannel data model and provides a harmonized view of the customer across all channels. This enables retailers to get a 360° view of the customer and offers SAP CEI and SAP 360 Customer access to cross channel transactional data.

## Solution Scope

- Sales Order related data are replicated from ERP into CAR via SLT (SAP Landscape Transformation)
- Customer Identification with CRM loyalty card number (custom implementations possible via BAdIs)
- New concept “Order Channel” defines the channel where the sale took place
- Availability of POS, sales order, and return transactions at one place enables 360° view of the customer
- CAR offers SAP CEI access to Cross Channel Transactional Data
- CAR offers SAP 360 Customer Interaction Center access to Cross Channel Transactional Data



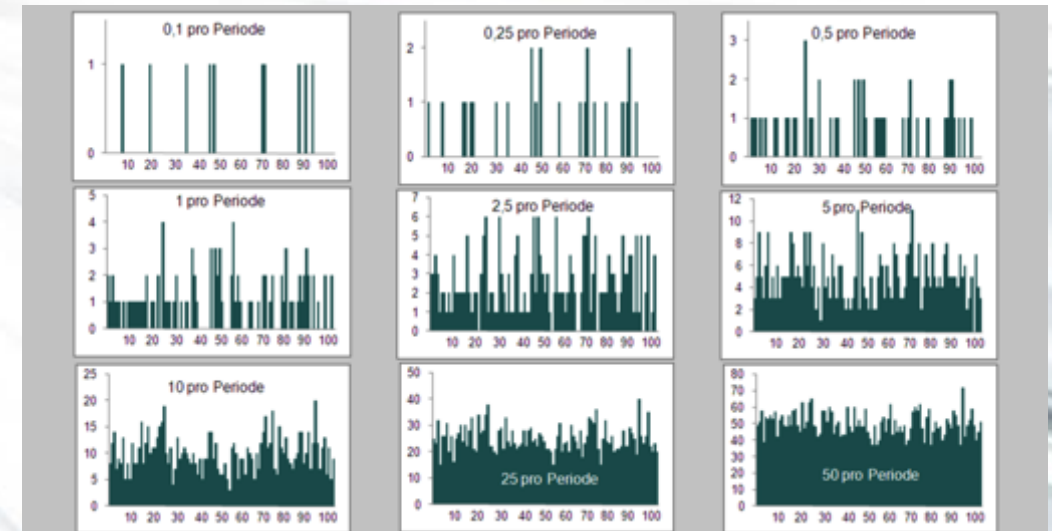
# On Shelf Availability Algorithms



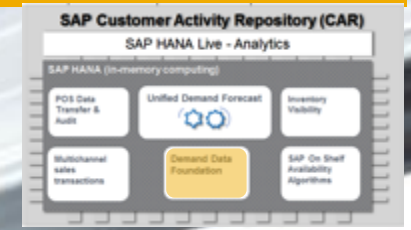
The on-shelf availability algorithms can be used to detect and visualize out-of shelf situations in the stores when they happen in real time and take immediate actions to prevent further lost sales.

## Solution Scope

- The algorithm sits on HANA, while it accessing the new TLOGF, leveraging in-memory computing power to execute millions of queries
- POS transactions are analyzed in real time to detect products that may have on-shelf availability issues (out-of shelf or out of stock)
- Provides transparency of on-shelf availability situations for regular and promotional products
- Current stock at cost/retail is calculated



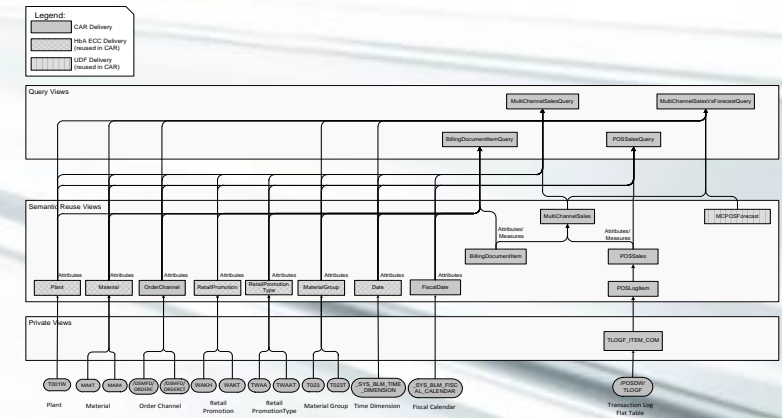
# Demand Data Foundation



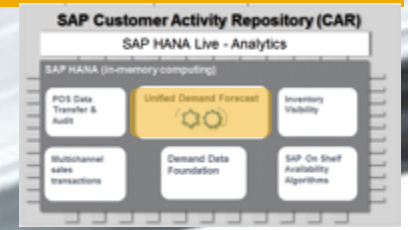
The Demand Data Foundation (DDF) is the platform and data model defined to support SAP Retail applications. DDF provides flexibility to integration with SAP Suite or any other master data system. SAP HANA is utilized to manage, aggregate, and filter data in a faster way than previously possible.

## Solution Scope

- DDF consists of a standard data model to support planning applications with integration points
- A flexible time series framework allows for fast access to pricing, and forecasting data over time
- DDF provide the technical mechanisms for easy data access through HANA Views
- Forecasting with the Unified Demand Forecast is called through DDF. Results are then aggregated and returned through DDF.



# Unified Demand Forecast



**Unified Demand Forecast (UDF) is the new generation of forecasting for SAP Retail applications. UDF combines the strengths of the forecast capabilities from SAP Promotion Management for Retail and SAP Forecasting and Replenishment while leveraging the speed of SAP HANA.**

## Solution Scope

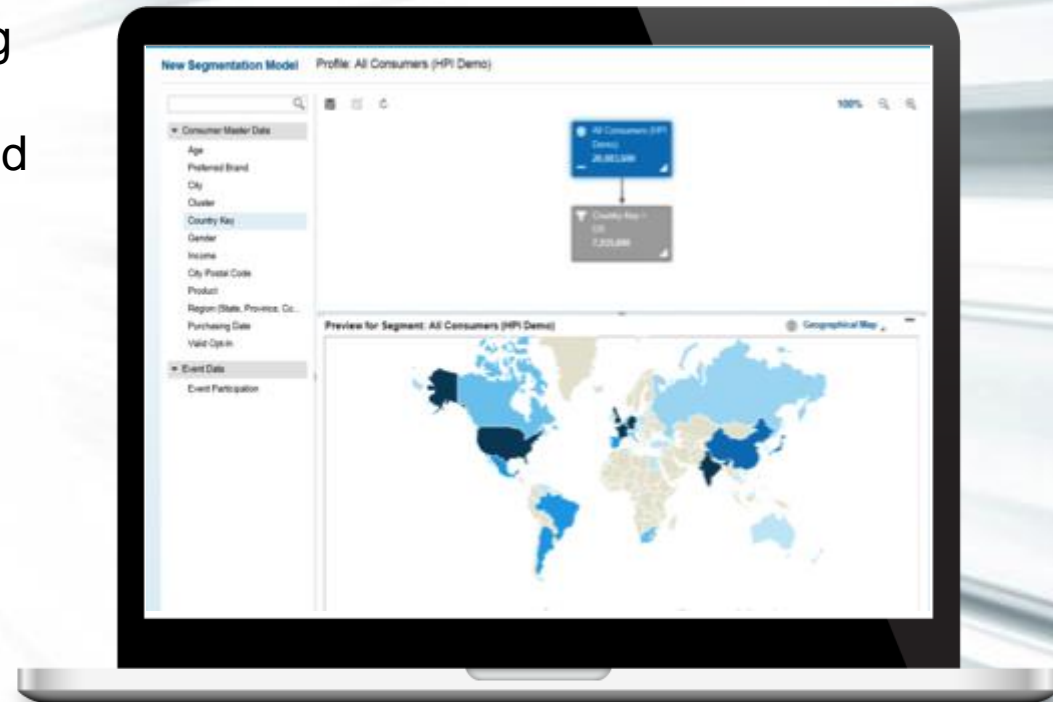
- UDF models causal based factors to understand true customer demand and then use this understanding to forecast future unit sales
- Bayesian and hierarchical priors aggregate data to fill the gaps of the understanding in demand history
- Forecasts are generated at product, location, channel, day with a flexible multichannel data model
- UDF supports what-if scenarios or long-term forecasts
- Through HANA views, the decomposed unit sales can be used for advanced analytics



# Audience, Discovery and Targeting

Optimize target groups for Omni-channel campaigns

- High performance customer segmentation on Big Data
- Great visualization & exploration tools to slice and dice data on the fly
- Optimize target groups leveraging predictive analytics
- Personalization of messages for any channel



# Affinity Insight\*

## Functionality

- Affinity Analysis 2.0 is a tool for flexible sales analysis on market basket level.
- Arbitrary combinations of hierarchy nodes in product and store hierarchy
- Computation of many different metrics
- Visualization as table, heat map or scatter plot



## Example metrics

- Number of market baskets containing two specific products or product groups
- Likelihood customers to purchase a certain product if they already bought another one
- Average multiplicity of a SKU in a market basket
- Market basket values attached to specific product groups or SKUs

	BREAD	BY CRUST	YELLOW &	YOGURTS &	CANNED &	BREAKFAST	CANNED	SUCCESSION	JUICES	CAKES
CHILLED MILK	0.89	0.48	0.30	0.88	0.27	1.62	0.10	1.00	0.30	1.68
SALE NEEDS	0.48	0.80	0.48	0.30	0.87	0.61	0.58	0.76	0.80	0.82
TABLE WINES	0.97	0.21	0.22	1.89	0.20	1.84	0.03	2.18	2.92	2.32
HOUSEHOLD	0.62	0.77	0.60	0.20	0.79	0.66	0.66	0.48	0.41	0.63
BEER/LAGER	0.18	0.68	0.17	1.80	1.44	2.21	1.73	2.43	1.81	0.88
HOUSEHOLD	2.42	2.84	0.74	1.80	2.80	3.07	2.77	2.79	2.89	2.88
COFFEES	2.74	2.19	0.16	1.73	1.62	1.17	1.82	1.14	1.75	1.14
LAUNDRY &	1.39	1.60	0.79	1.04	1.77	2.11	1.92	1.98	1.98	2.17
SPORTS	1.87	1.66	0.11	1.17	1.14	1.28	1.39	0.96	1.66	1.19
POLYMERALS	0.88	0.91	0.48	0.62	1.54	1.39	1.26	1.07	1.00	1.30
BOC STOCK	0.43	0.48	0.34	0.37	0.89	0.73	0.82	0.84	0.71	0.88
H&E	1.16	1.16	0.43	1.03	1.20	1.09	1.24	1.32	1.17	1.11
H&E WASHING	0.74	0.91	0.44	0.88	1.01	1.10	1.00	1.01	1.18	1.20
STATIONERY	0.81	0.86	0.34	0.76	1.11	0.90	0.88	0.95	0.91	0.88
H&E DENTAL	0.85	0.88	0.40	0.97	0.74	0.88	0.87	0.77	0.79	0.81
TOYS	0.82	0.64	0.84	0.80	0.81	0.74	0.74	0.83	0.75	0.74
BRIDGE	0.26	0.30	0.41	0.27	0.38	0.41	0.38	0.32	0.42	0.40
H&E HAIRCARE	0.30	0.34	0.38	0.22	0.48	0.60	0.83	0.82	0.49	0.48
KITCHEN &	0.08	0.10	0.13	0.08	0.18	0.22	0.16	0.18	0.13	0.21

Affinity Insight screenshots

▶ Affinity Insights is a flexible tool for market basket analysis targeted at the expert user

\* Released to customers as a "Repeatable Custom Solution" since January 2013

# Customer Engagement Intelligence powered by SAP HANA Product Recommendation Intelligence

Making context aware smart product recommendations in real-time during customer conversation using predictive models

relevant to the consumer and verified against his peer group

supporting his objective in alignment with his consumer decision stage

Basing input for the recommendations on consumer's purchase history from all channels pre-structured (business event) click stream data

Learn from recommendation history and consumer reaction



# SAP CAR for Real-Time Stock Visibility

1.2 million transactions per day, across 16,000 tills in 3,100 retail stores

The Advantage Card loyalty programme sits on SAP's CRM platform, and supports 17 million active card holders

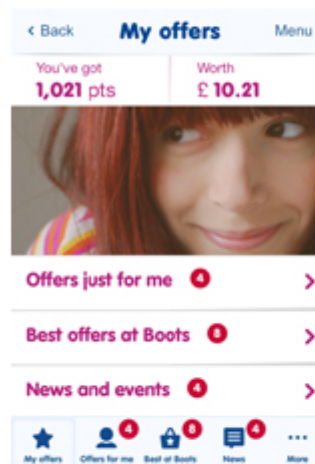
Real-time view of 25,000 retail lines across 2,500 stores

**ComputerWeekly.com**



Health and beauty retailer, Alliance Boots is about to roll out real time stock visibility to its stores and customers using SAP Hana.

Ranjit Gill, delivery director for retail, Boots UK said the real-time view of 25,000 retail lines across 2,500 stores will be live in the next couple of weeks.



The stock visibility information will be available to both staff and customers via Boots.com online, the company's mobile app (pictured), as well as through tills, in-store Wi-Fi devices and desktop PCs.

Using SAP's customer activity repository, powered by Hana, the app will also provide Boots employees with an extra view of warehouse stock to improve the delivery chain from suppliers to store.

"It will unlock loads of future value and delight customers, while addressing the

changing needs of consumers," said Gill, speaking at an SAP customer event at its headquarters outside London.



# Finance: Liquidity Risk Management

# Funding Liquidity Risk

## Internal Risk Management

- Risk that the firm will not be able to meet efficiently both expected and **unexpected current and future cash flow and collateral needs\***
- A first step of a funding liquidity risk calculation consists in calculating the Forward Liquidity Exposure in terms of the **Legal Cash Flow Gap**.
- In a second step hypothetical cash flows should be taken into account as well. These simulations should be driven by market development, customer behavior and bank strategy to generate a more realistic **Economic Cash Flow Gap**.
- If liquidity gaps are detected when analyzing the economic cash flow gap, a third step consists in calculating the **Counterbalancing Capacity**. All assets like bonds or committed lines are used to resolve potential liquidity bottlenecks.

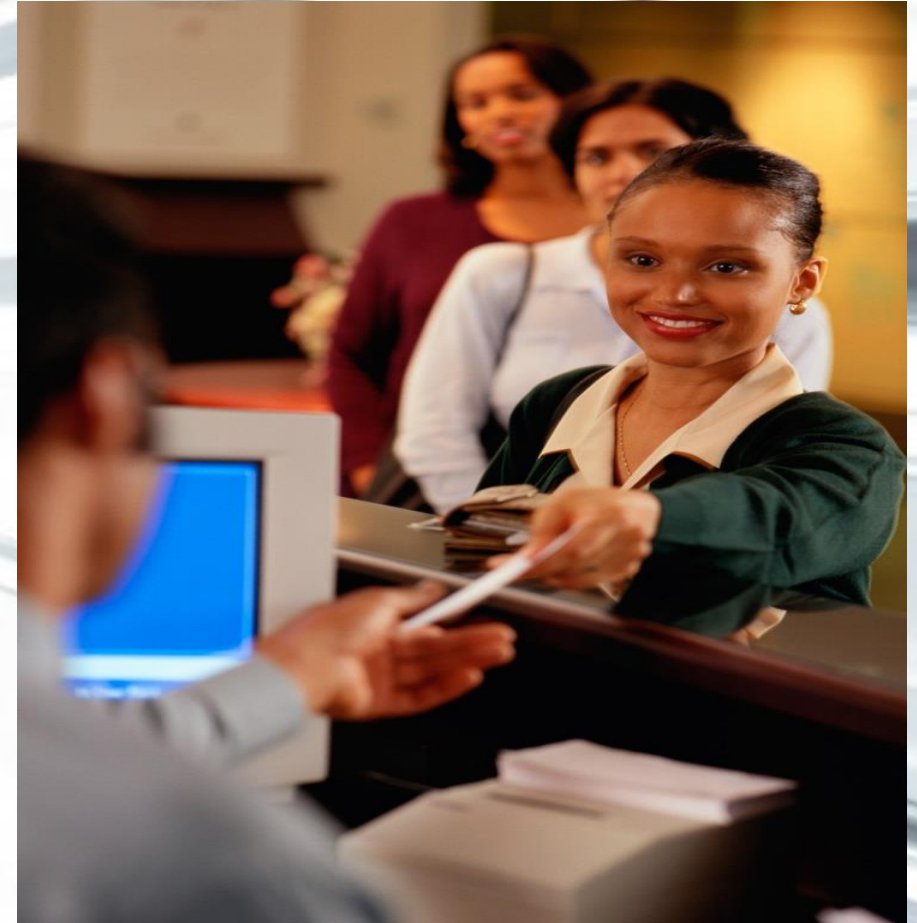


\* Basel Committee on Banking Supervision – BCBS 144 Principles for Sound Liquidity Risk Management and Supervision

# Market Liquidity Risk

## Internal Risk Management

- Risk that a firm **cannot easily offset or eliminate a position at the market price** because of inadequate market depth or market disruption\*.
- This risk could come up in conjunction with OTC trades or when solving liquidity gaps with the release of huge positions exceeding usual trading volumes.
- Market Liquidity Risk is **currently not in focus**.

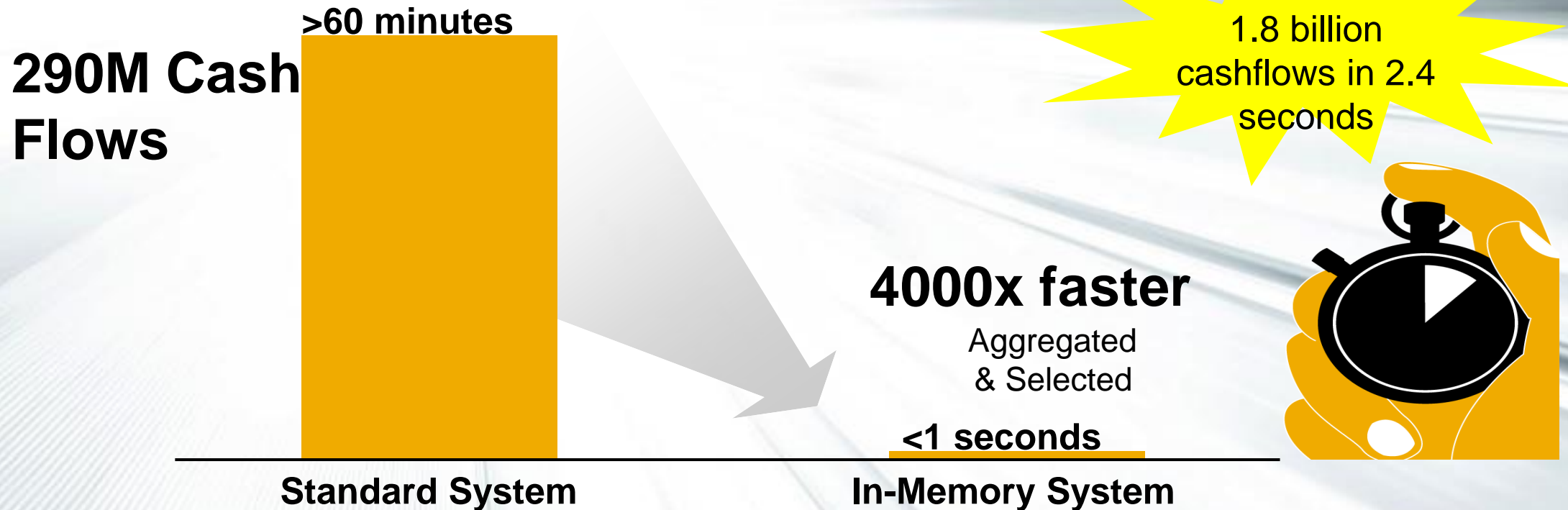


\* Basel Committee on Banking Supervision – BCBS 144 Principles for Sound Liquidity Risk Management and Supervision

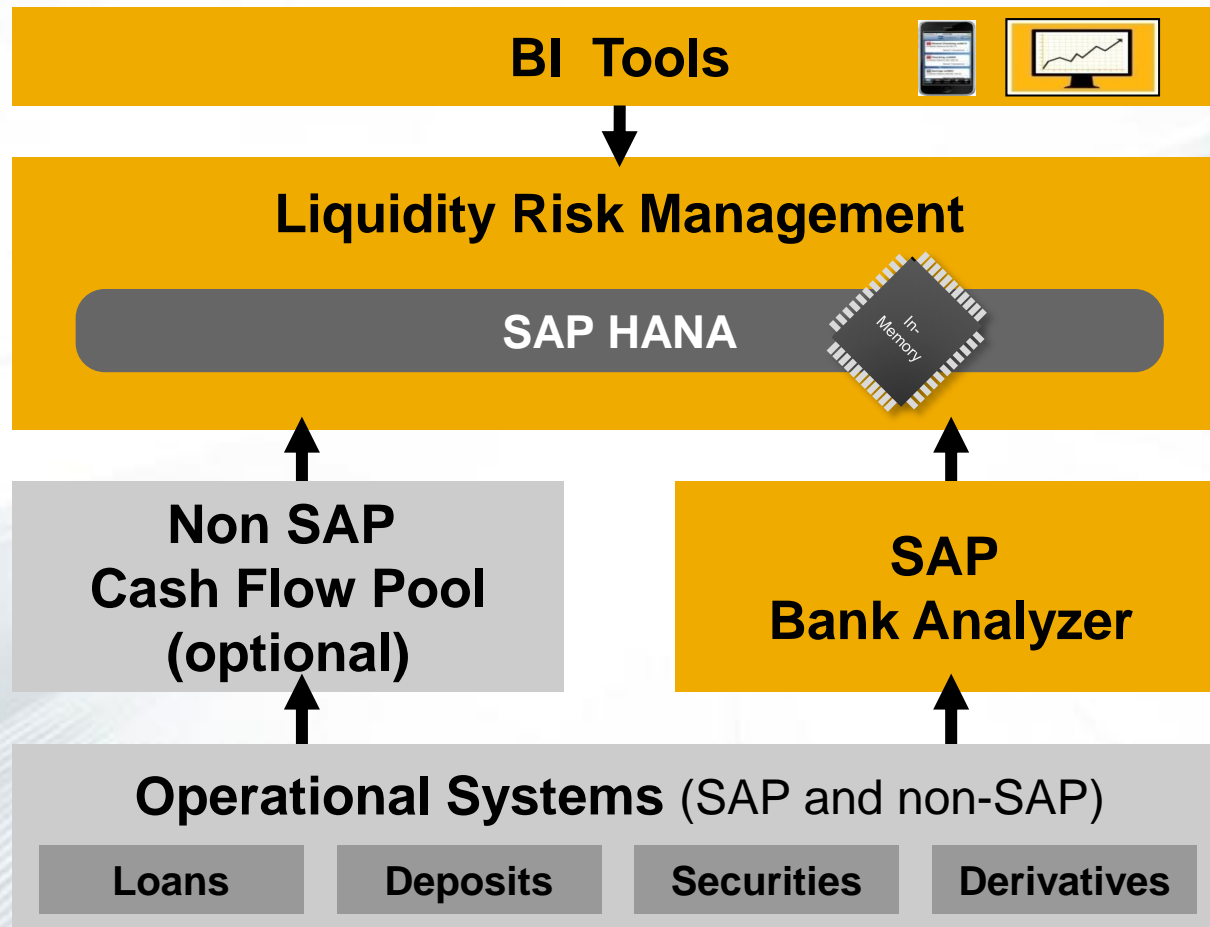
# SAP LRM on HANA goes beyond limits of current risk management applications

**“Proposed intraday liquidity reports ‘not feasible’, banks say. Basel Committee's proposed new reports on daily liquidity needs would involve “thousands upon thousands” of data points.**

Risk Magazine, Sept 2012



# High Performance Application Architecture Liquidity Risk Management



Comprehensive Liquidity Risk Reporting

High Performance Stressing and Cash Flow Aggregation and Key Figure Calculations

Generation and Upload of Contractual Cash Flows for Current Business

Operational Contract Management

Visit us on <http://wiki.sdn.sap.com/wiki/display/LRM/> to learn more

# LRM has huge impact on end to end process performance and quality of results

PoC results with real data

Enormous acceleration of single calculation steps:

300 Mio Cash Flows



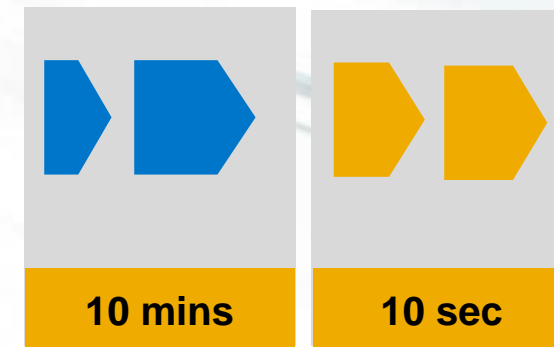
4000x faster

1 second

cl. database

HANA

Huge improvement of end to end processes:



From 2 days down to 10 min  
50x faster

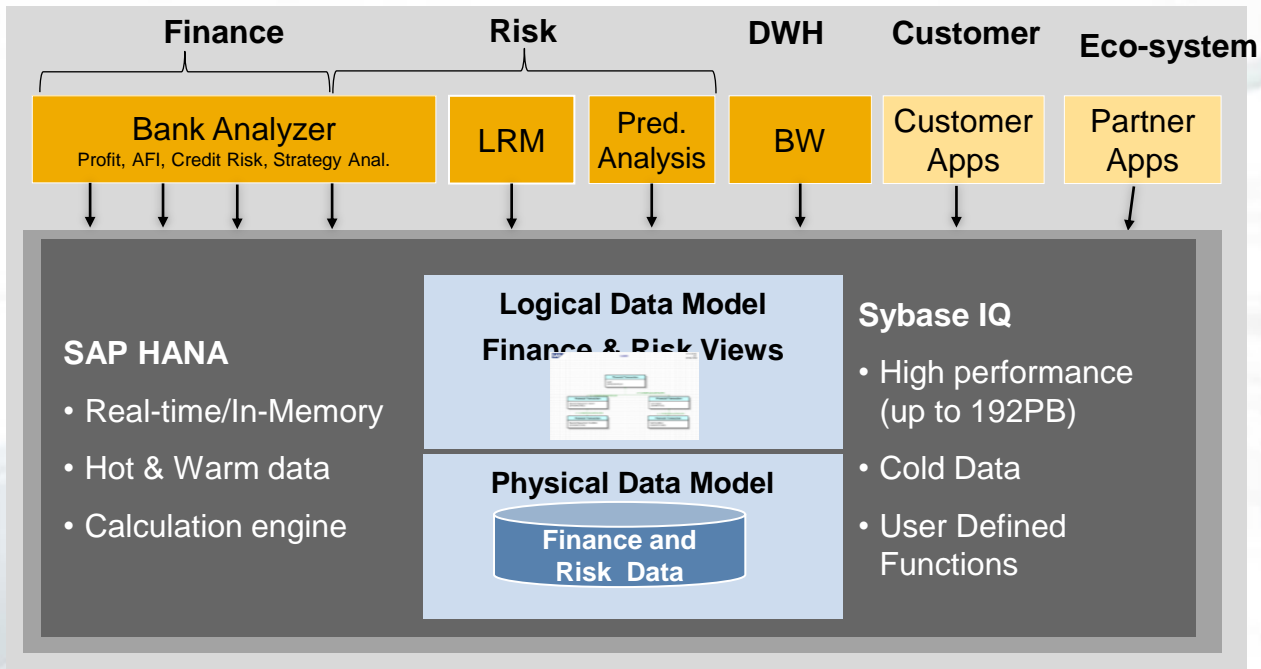
No physical aggregates needed

batch Interactive (on HANA)



# Finance: Finance and Risk Reporting

# Vision: All Finance & Risk Applications running on Real-Time F&R Data Platform



## Solution Details

- Real-Time F&R Platform for all SAP F&R Applications
- F&R Applications are optimized for HANA
- Open for deployment of partner and customer applications and BI tools

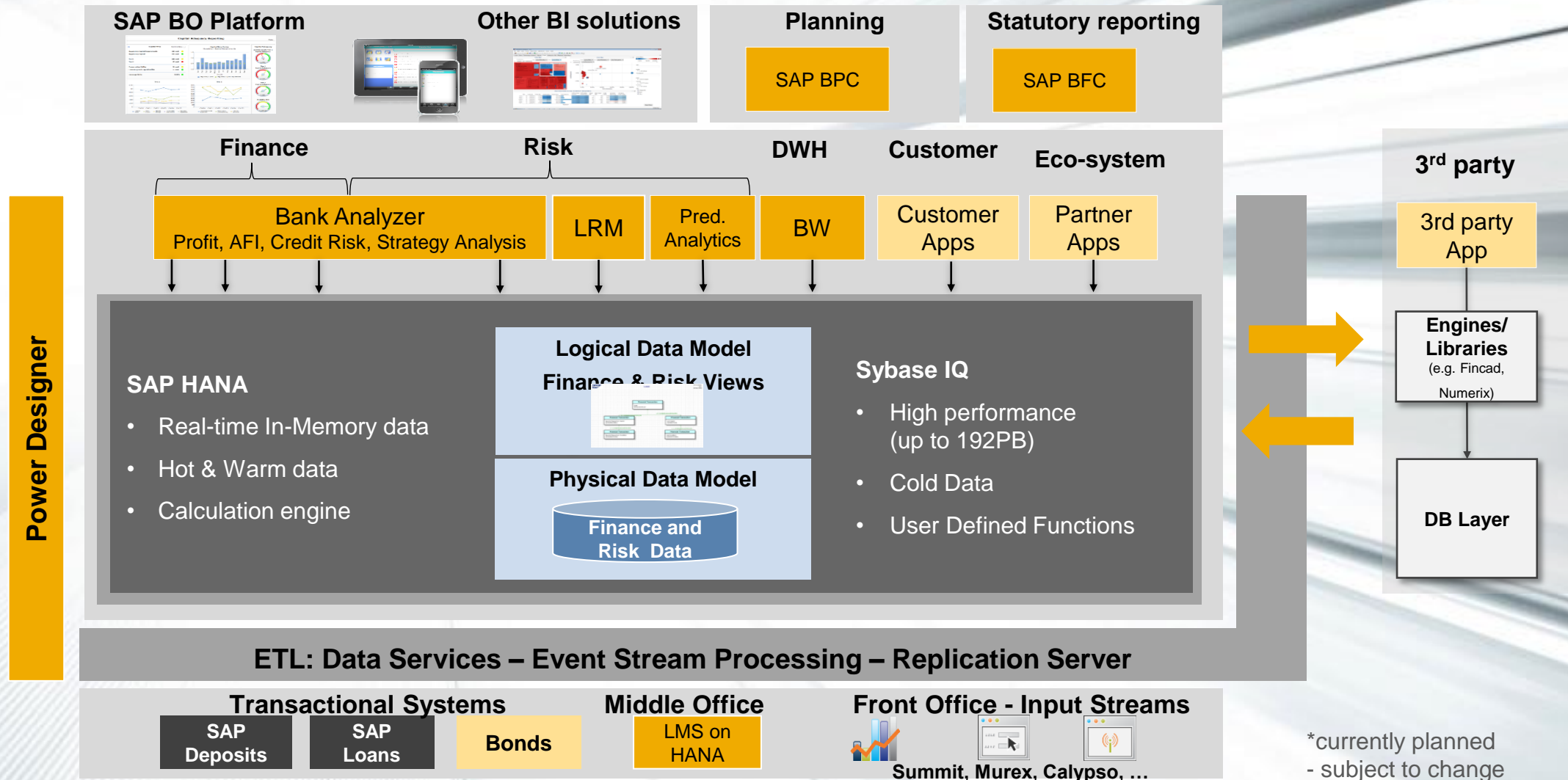
## Solution Benefits

- Consolidate Finance & Risk application landscape on one data platform
- Standardization of F&R data based on industry reference data model
- SAP applications optimized for HANA
- Standardization of data operations (read/write)
- Real-time data processing and BI
- Leverage of in-Memory technology
  - Real-time data processing, less redundancies, reduced administration costs, easy to extend

[Download Reference Architecture](#)

# SAP Banking Finance & Risk Platform

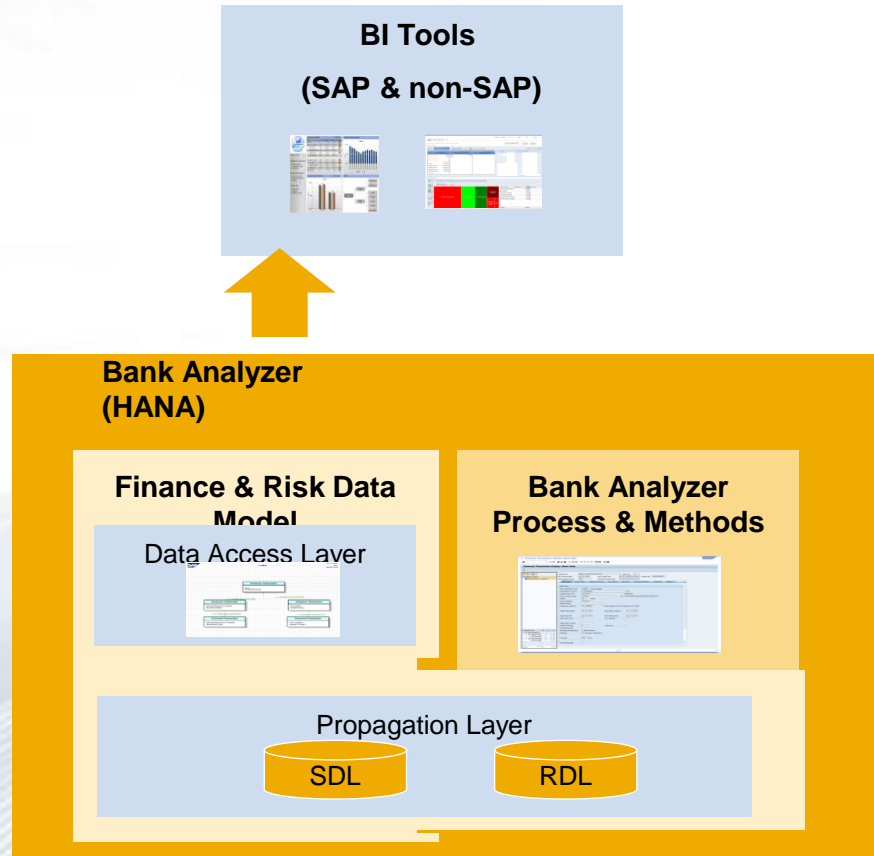
Open integrated Finance and Risk Platform\*



\*currently planned  
- subject to change

# Finance & Risk Analytics for new BA customers

Bank Analyzer on HANA – Embedded Solution for Analytics\*



\* Pre-Condition: Bank Analyzer runs on HANA

## Solution Details

- Finance & Risk Analytics is embedded in BA (on HANA)
- BA is leading modelling environment. PowerDesigner is used to synchronize BA model with HANA model and to build customer specific views.
- Data Model is physically deployed in SAP HANA
- Finance & Risk Analytics is the information basis for BI leveraging HANA Interfaces (SQL, MDX, OData)
- Usage of SAP BW optional

## Solution Benefits

- Real-time availability of Bank Analyzer data for Analytical purposes without replication
- BI on complete set of information (granular level)
- Consumption views for direct usage in BI and flexibility to create customer specific views
- Leverage advantages of In-Memory technology
- Real-time data processing, less redundancies, reduced administration costs

# Business Scenarios based on HANA

Accelerate and improve Business Processes



## Business / IT Scenario:



- Risk Management including ad hoc simulation capabilities
- Consolidation of data and reporting

## Value Proposition



- Accelerated Reporting (from 4 hours to 4 min.)
- Consolidation of data and reporting
- Less Manual effort
- Consolidated IT landscape



## Business / IT Scenario:



- Customer Analytics based on different data sources
- Faster Access to relevant information

## Value Proposition



- Improved Customer Service
- Acquire and retain customers
- Increase Profitability



## Business / IT Scenario:



- Obtain Customer Credit Information
- Ensure Internal and external regulatory requirements

## Value Proposition



- Ensure Compliance
- Improved Management Reporting
- Risk Transparency

**Спасибо за внимание!**

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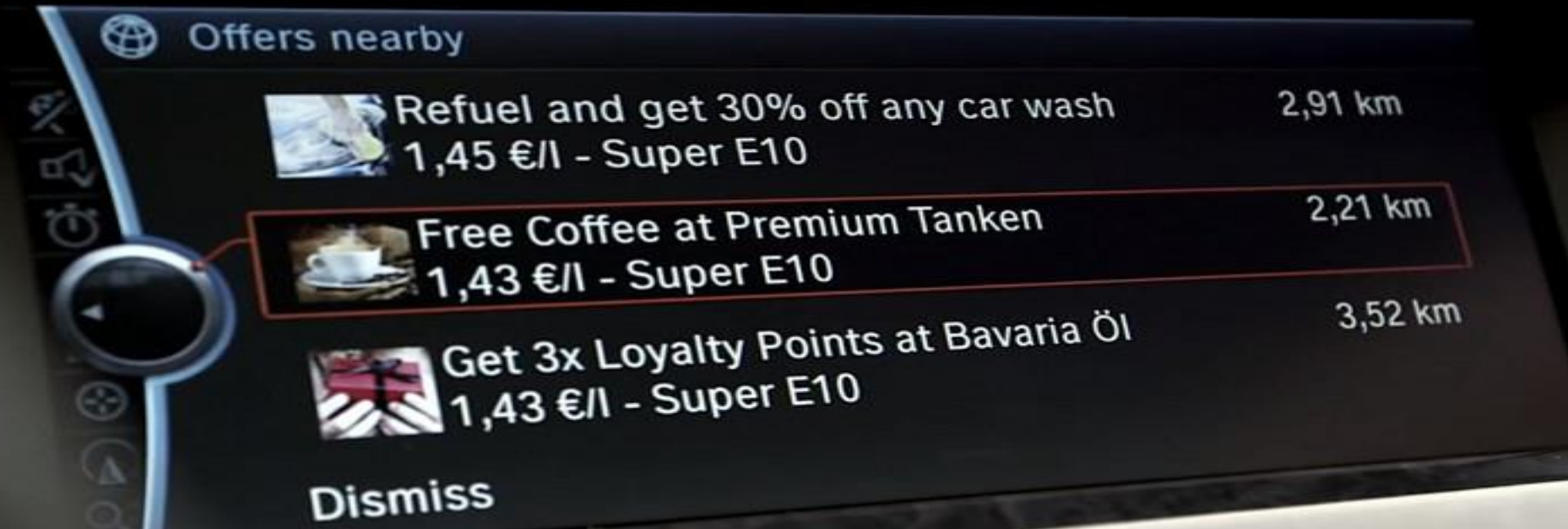
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# Tomorrow's Connected Car Will Find You A Free Cup of Coffee, And Then Some



<http://www.news-sap.com/connectedcars/?source=email-emea-sapflash-newsletter-20140428&campaigncode=&lf1=642825271d42695326669f21127111>

# Usage Based Insurance (UBI) Recognised as a major shift in the marketplace

## Business Scenario

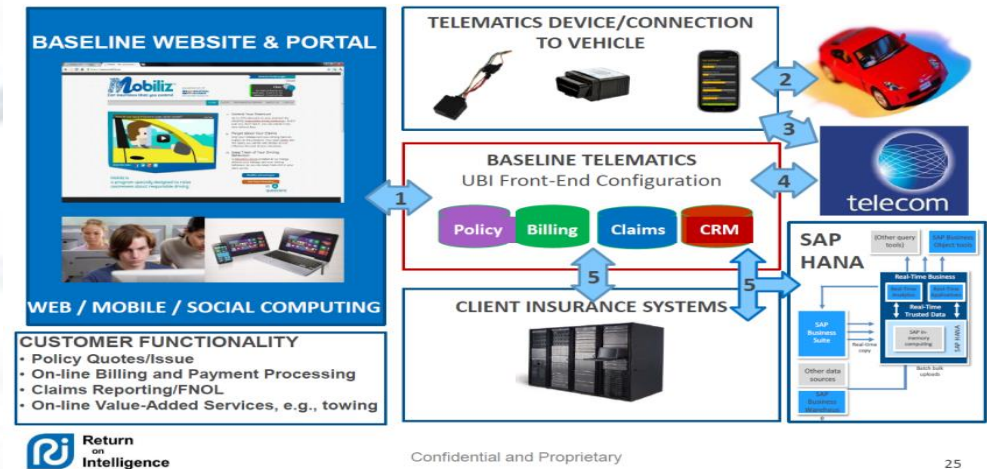
- 30% of insurance likely to become telematics based
- Annual Renewal => Monthly Billing based on use
- Huge Data Volumes / Real Time collection/analysis
- Dynamic Pricing / Tariff Offer based on Predictive Analytics (UBI “Scoring”)
- Insurer as data aggregator – onward sale of data

Note: SAP considering partnership relationship with Baseline Technologies (Canada)

## Customer Profile

- All major P&C insurers in EMEA
- UK / Nordics markets in rollout; France / Italy following
- Initial offer to young drivers, but will rapidly become a mainstream offer by 2018

## Illustrative UBI Application Process and Architecture Front-End, Bolt-On Solution



## Value Proposition

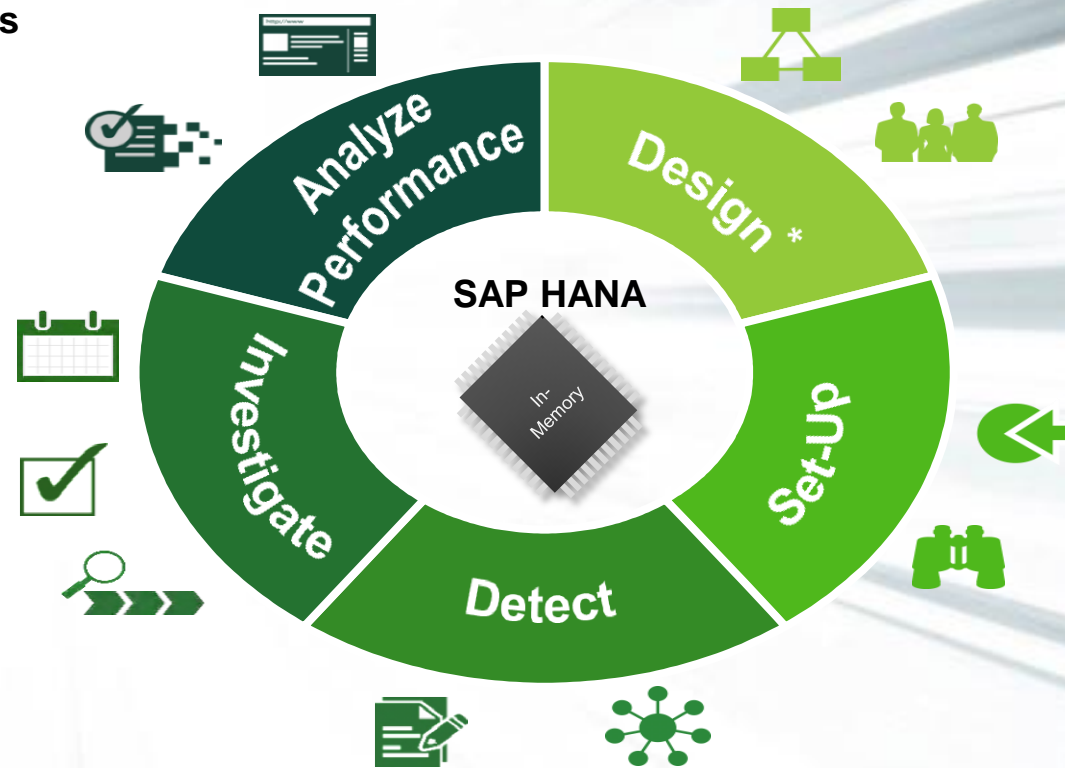
- 40% loss ratio reduction (safer driving / risks)
- 75% expense ratio reduction (cloud based)
- High retention (ongoing relationship)
- Upward / onward selling based on “insurer as data aggregator”

# SAP Fraud Management powered by SAP HANA

Achieve effective and efficient fraud management

Monitor key performance indicators and create management reports

Analyze fraud patterns and define detection rules and models



Manage alert workload with efficient evaluation, qualification and remediation of fraud

Define fraud detection strategy through simulation and calibration

Execute mass and real-time detection and stop suspicious business transactions

(\*) Can be preformed with SAP HANA studio, SAP Predictive Analysis (option) or 3<sup>rd</sup>-party tools

# Proof-of-Concept: Fortune 500 Insurance Company in the US

## SAP Fraud Management for Insurance

### About the customer

- A Fortune 500 insurance company, with assets of more than \$100 billion, has a presence in the United States and Japan.

### Business Problem

- Significant amount of revenue is lost due to sales fraud committed by agents and by customers filing in illegitimate claims.
- Company prides itself in rapid response to claims and wants to cut frauds without compromising speed of claims response and customer service.

### Proof of Concept

- Set up SAP Fraud Management for Insurance prototype based on customer specific data model and customer specific fraud detection methods

### Proof of Concept - Results

- Identification of unknown potential fraud cases
- Increased insights into unknown fraud patterns
- Real time detection across >180 billion insurance policies in less than 10 seconds
- Realize PoC within 3 weeks from first meeting until presentation of results life within SAP Fraud Management for Insurance

### Detection of Claim Fraud

> 180.000.000  
Insurance Policies

> 75.000.000  
Insurance Claims

**appr. 1,5 Minutes**  
Online Fraud Detection time



### Detection of Sales Fraud

> 180.000.000  
Insurance Policies

> 500.000  
Agent Records

**Less than 10 Seconds**  
Online Fraud Detection time



# More Effective Management Information

## Example: Generali, Italy



**SAP HANA to help Generali to analyse very large volumes of data in a short time frame, in key areas including agent commission and collections & disbursements**

**This capability can be deployed in many different management information scenarios, these are just examples**

**Consolidation of MIS data stores would be another natural usage**

### **Business Challenges**

- General Reporting
- Reduce error rate on commissions paid to agents (through increased analytics capabilities)
- Comply with the batch window to load data in DW as volumes were expected to steeply increase.
- Simplify and speed up free format analysis on collection and disbursement data

### **Benefits**

- Improved overall control on collection and disbursement data
- Increased efficiency in analyzing large quantities of information in the industrial accounting space
- Reduce TCO, eliminating unnecessary duplication of systems and data
- More and easier information for less cost

# Healthcare Predictive Genome Analytics

[http://www.youtube.com/embed/U6dA41\\_ulxo/?autoplay=1&rel=0&feature=youtu.be](http://www.youtube.com/embed/U6dA41_ulxo/?autoplay=1&rel=0&feature=youtu.be)

## Business Scenario

- Healthcare Provider
- Using genomic data to improve customer service and accuracy of recommended treatment

One stop service for cancer genomic data analysis supporting personalized therapeutics



## Issues

- Wanting to offer 'personalised medicine'
- Not just diagnosed treatment, but best treatment / most suitable drug for the particular cancer that the customer is suffering from
- Extended time for diagnosis
- Cost of lengthy process

## Value Proposition

- Personalize diagnosis, matching most effective treatment / drug to their specific circumstance
- Diagnosis in single visit
  - Reduce cost for healthcare provider
  - Reduce wait time / anxiety for patient
  - Drive up customer loyalty / recommendation through short, less stressful processes