



How IBM Analytics Can Open a New Universe for your Enterprise Applications

Hélène Lyon

Distinguished Engineer & CTO, z
Analytics & IMS for Europe

IBM Systems, Software Sales,
Europe



IMS Technical Symposium 2015



Agenda

- Introduction
- Focus On Analytics & Decision Management
- Focus on IDAA with your IMS Data
- Focus on Hadoop
- Use Cases





Five Business Critical Analytics Use Cases



Big Data Exploration

Find, visualize, understand all big data to improve business knowledge



Enhanced 360° View of the Customer

Achieve a true unified view, incorporating internal and external sources



Security/Intelligence Extension

Lower risk, detect fraud and monitor cyber security in real-time



Operations Analysis

Analyze a variety of machine data for improved business results



Data Warehouse Augmentation

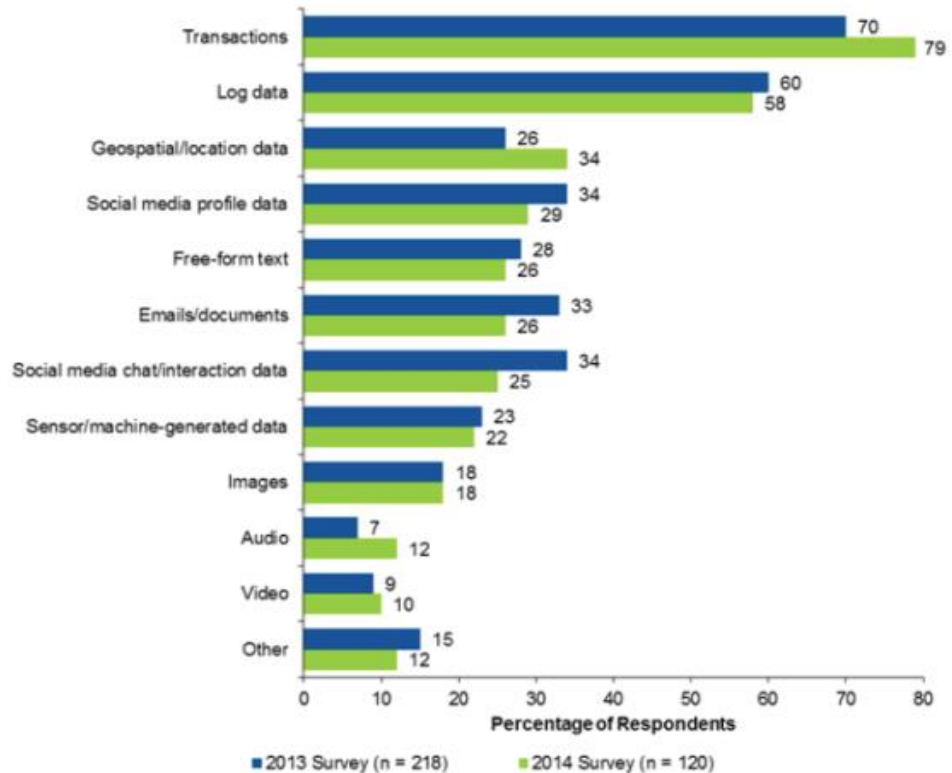
Integrate big data and data warehouse capabilities to increase operational efficiency



The Big Data Starting Point

Which types of big data does your organization currently analyze?

Source : Gartner Inc, Research Note G00263798- Survey Analysis: Big Data Investment Grows but Deployments Remain Scarce in 2014 . Nick Heudecker, Lisa Kart, Date Published 09/092014



Base: Respondents invested in big data technology
Multiple responses allowed

Source: Gartner (September 2014)



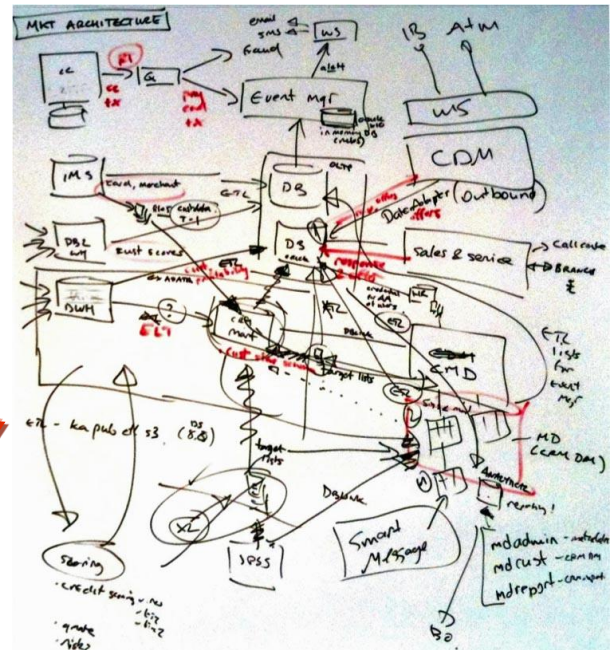
Unfortunately for most of our clients, their data lifecycle is too fragmented to gain advantage from that data

Client key concerns:

- Cannot deliver real-time analytics
- Inadequate performance
- Governance model
- Data latency
- Data completeness
 - Not all in one source
 - Lack access to fine-grained data
 - Lack “customer intent” e.g. cancelled transactions
- Multiple platforms, many security boundaries, many points of failure,
- Challenging recovery scenarios

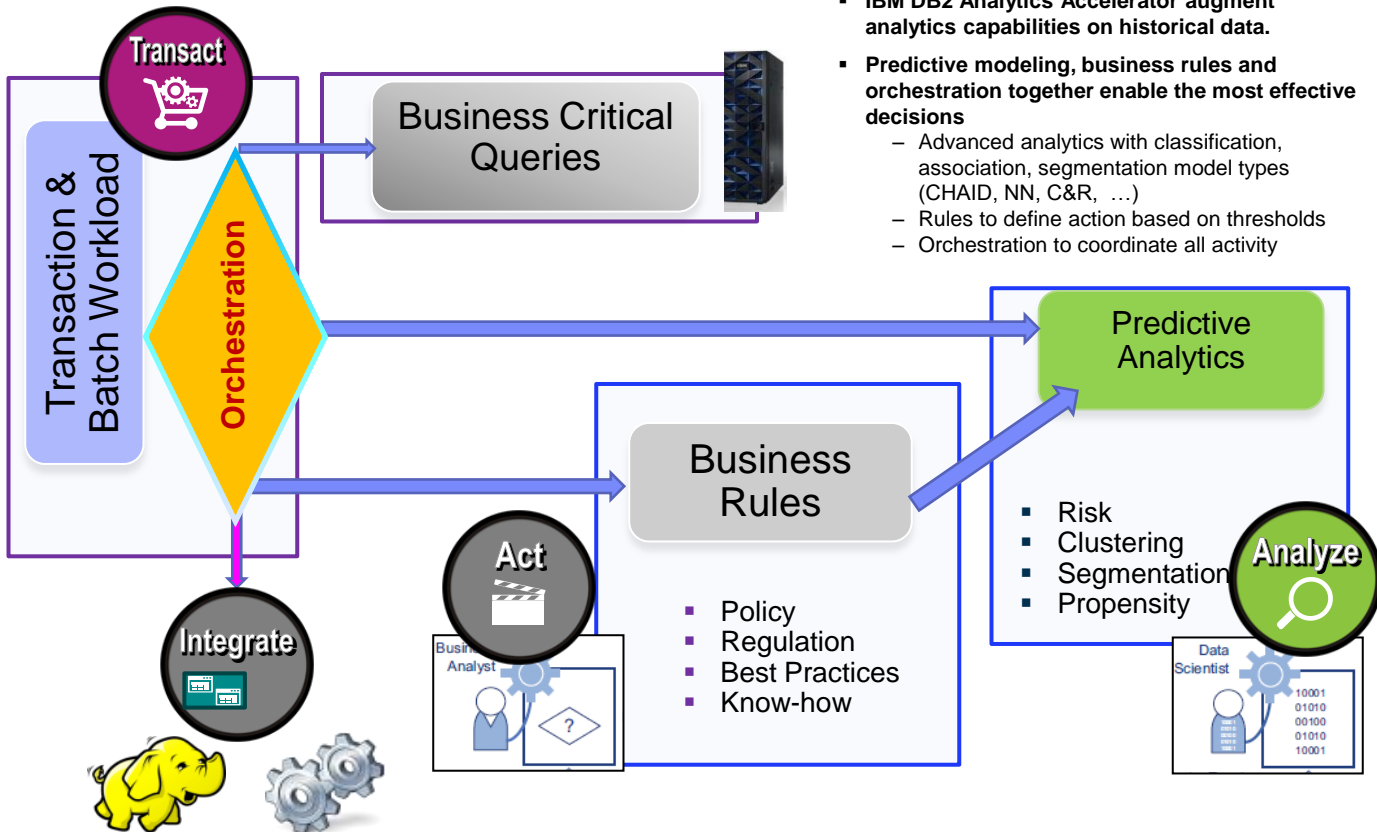
Multi-day workshop captured the complexity of the current architecture

- The picture does not show all the steps before the data gets to the off-platform warehouse





Real-Time Analytics & Decision Management



- **IBM DB2 Analytics Accelerator** augment analytics capabilities on historical data.
- **Predictive modeling, business rules and orchestration** together enable the most effective decisions
 - Advanced analytics with classification, association, segmentation model types (CHAID, NN, C&R, ...)
 - Rules to define action based on thresholds
 - Orchestration to coordinate all activity



Event: Enrich Business Processes with Real Time Analytical Insight : Real-Time Analytics on z Systems



▪ Join a 2-Day Event in Montpellier Client Center on April 28th-29th

– Objective

- Technical enablement on Real Time Analytics applications on z Systems including z13
- Special focus on the combination and the complementarity of business rules management and predictive scoring to make better decisions
- Overview of IDAA, CPLEX and Big Data solutions to complement Real Time Analytics applications

– Contact: Alain Roy - A2ROY@fr.ibm.com

▪ Ask for personalized workshop

– Involve your IBM sales team



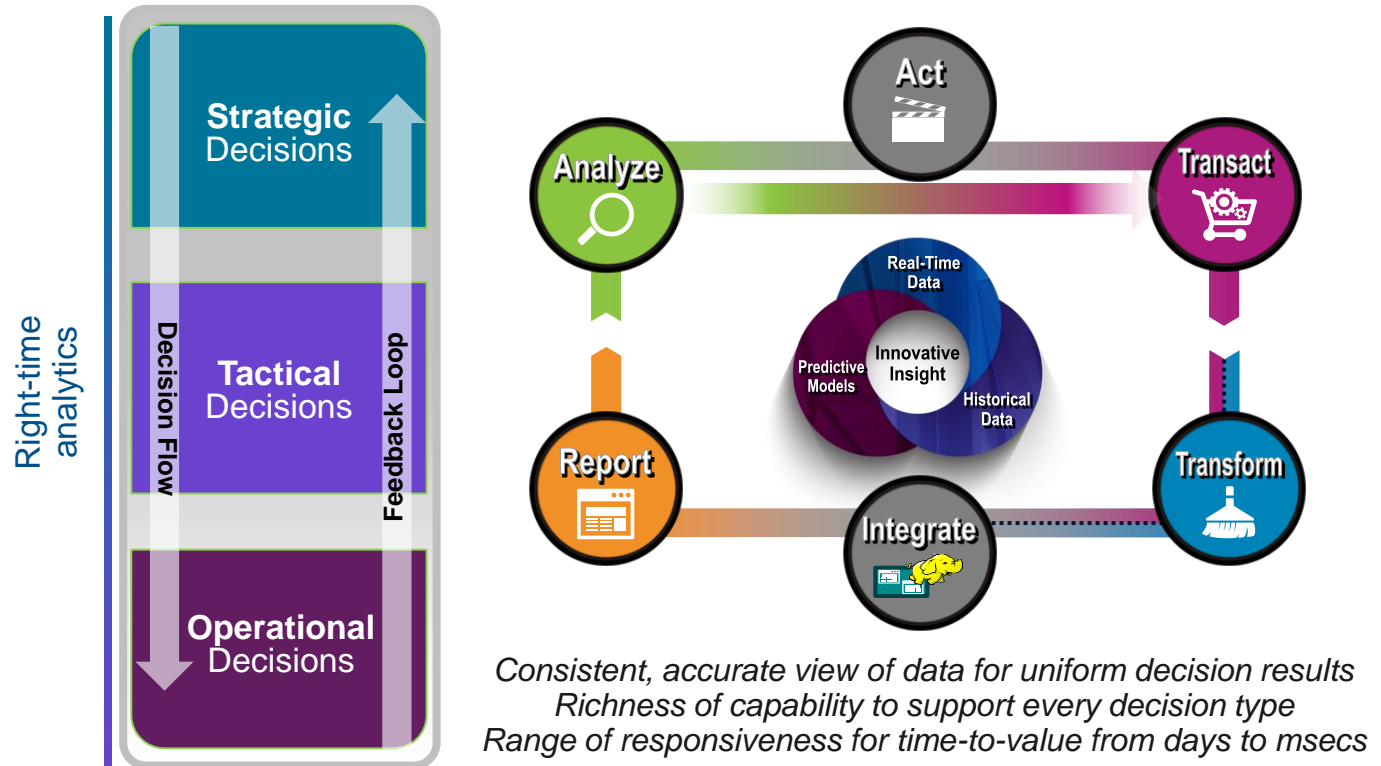
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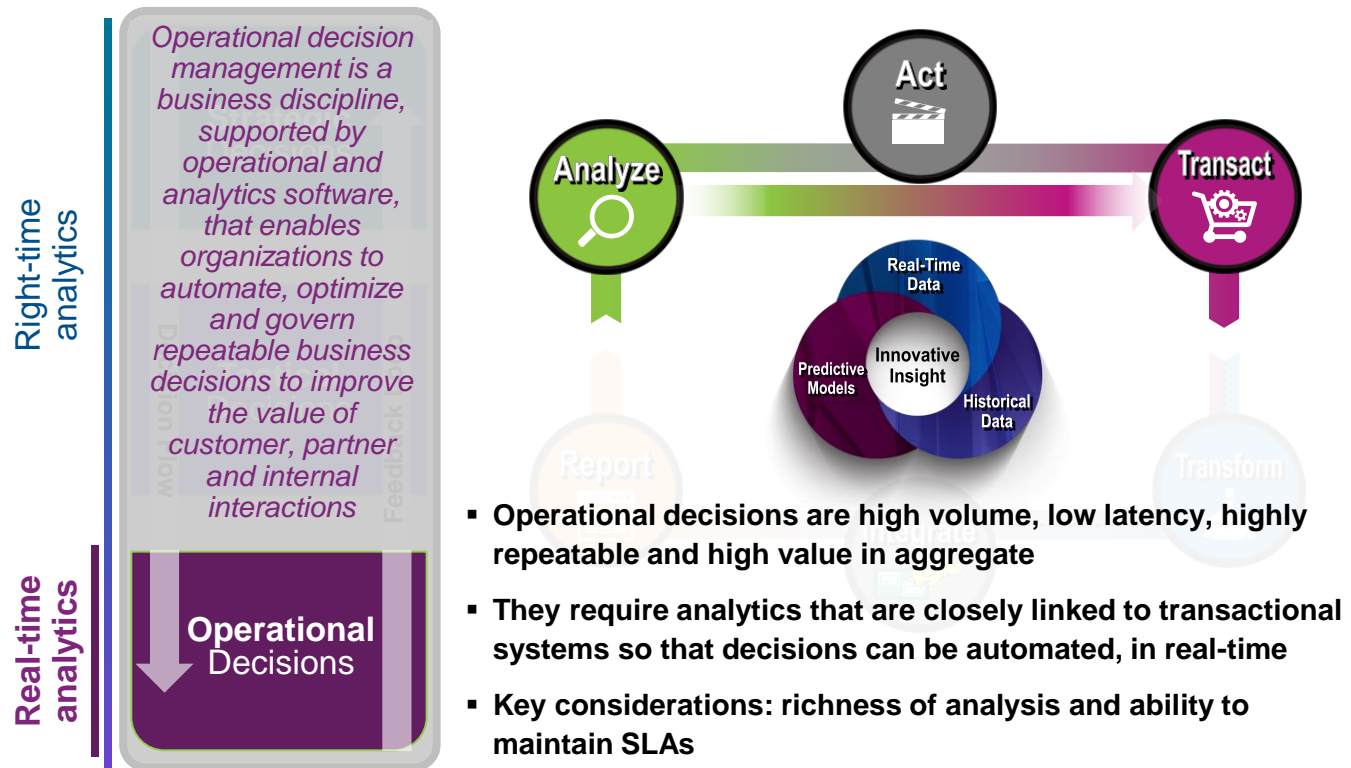


An enterprise analytics architecture is required to transform systems into Decision Management Systems



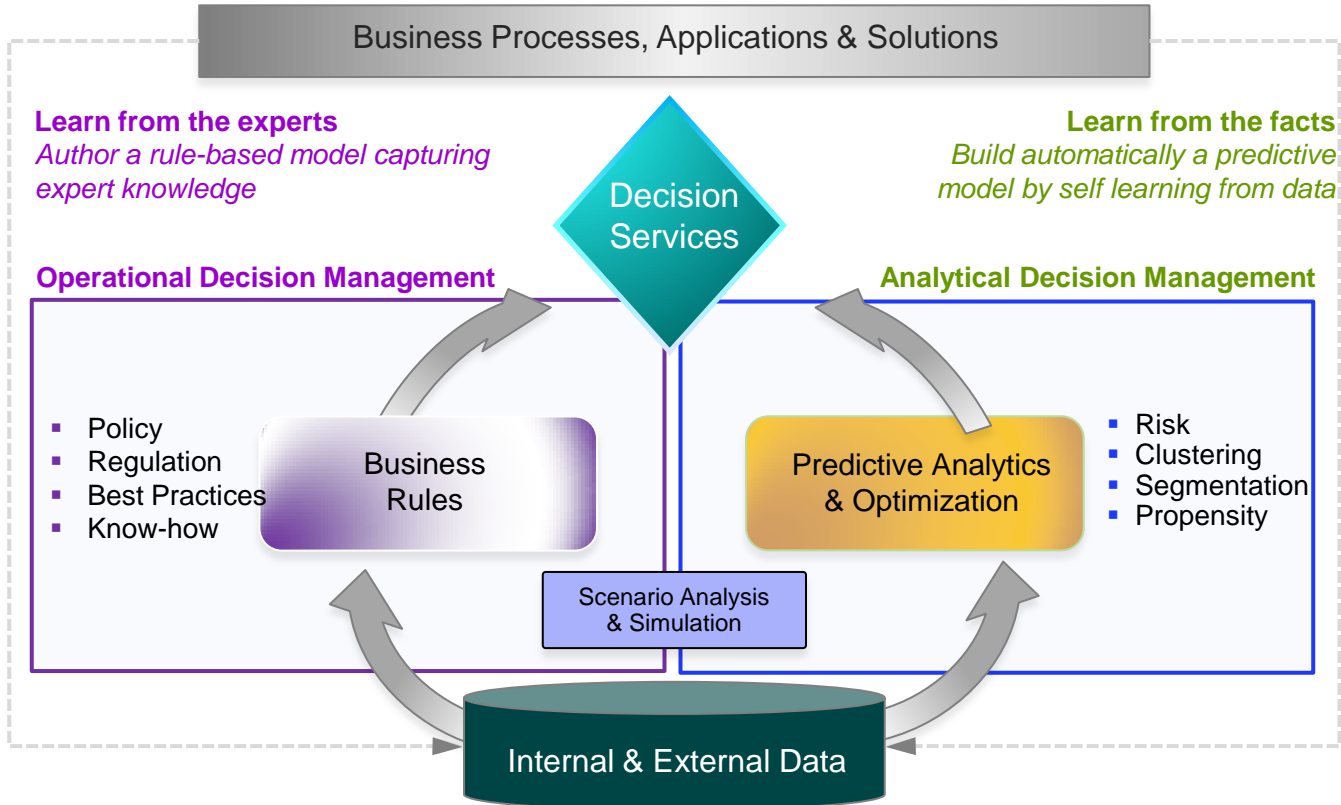


First Focus: injecting insights into operational decisions





Operational & Analytical Decision Management





The 4 IBM ODM Business Rules Essentials

Callable operational decision services



- Shared and platform-agnostic services
- Stateless: The calling application passes the context
- Synchronous
- **Externalization, consistency and traceability**

Express the decision logic with business rules

if
the product type is car insurance
and the client has a car insurance
then
do not recommend the product;

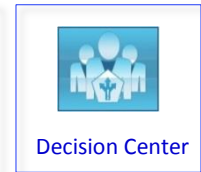
- Business language
- 1 rule for the business = 1 IBM ODM artifact
- **Transparency, visibility**

Externalize & centralize the business logic



- Controlled access
- Decoupled from the application logic
- **Externalization and agility**

Bring the IT and the lines of business together



- One single view on rules
- Test, simulation, versioning
- **Collaboration and governance**



Business Problems & Benefits of ODM

Challenges for most z Systems clients

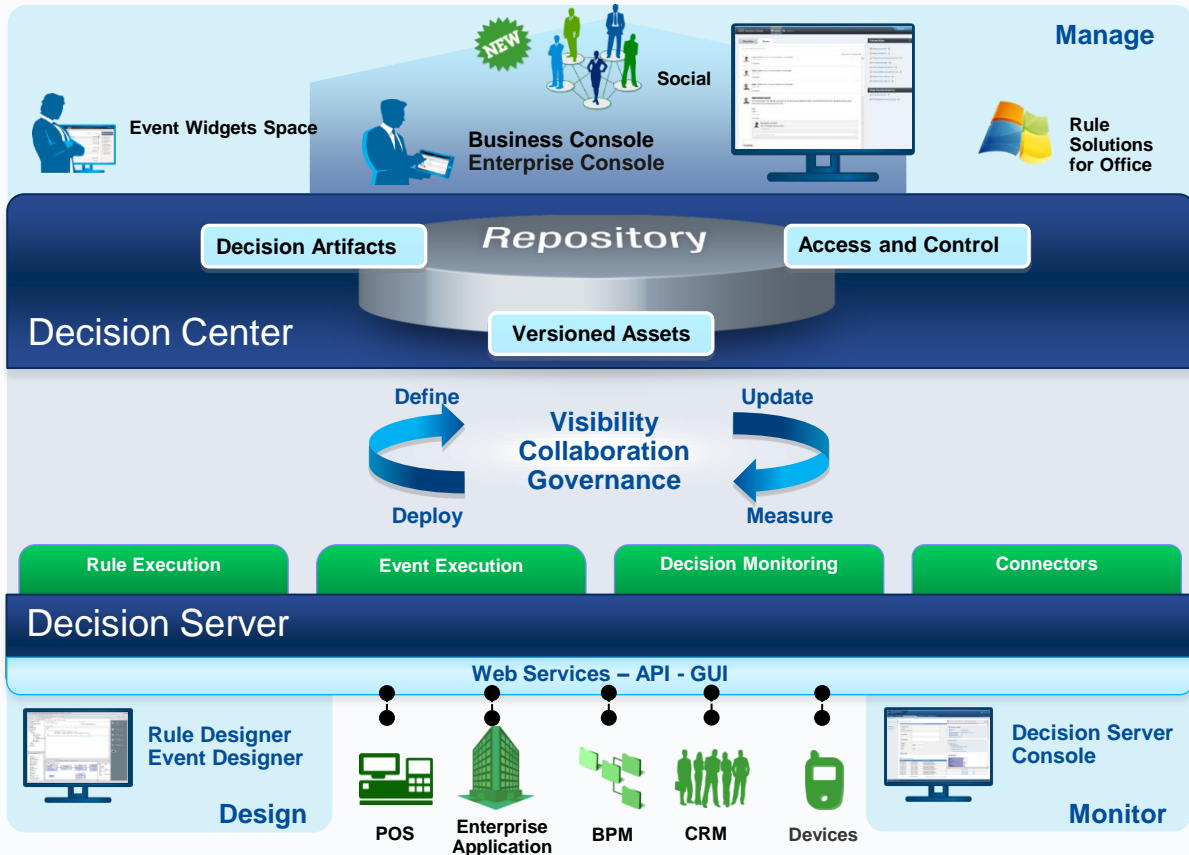
1. **Consolidation, isolation, extension of COBOL & PL/I application portfolios**
2. **Ability to react to increasing pace, variety and volume of change requests**
3. **Sharing business rules across platforms & channels**
4. **Ensuring seamless business experience in migration/ application evolution**

Benefits of the ODM Approach

- ✓ **Cost savings**
 - Shorter change cycle, without increased business risk
 - Rule engine processing is zIIP eligible
- ✓ **Improved agility**
 - Improved Time to Market
 - Manage business decisions in natural language
 - Decouple development and business decision change lifecycles
- ✓ **Single version of the Truth**
 - Consolidated and shared expression of business policy
 - Maintainable with a Center of Competency model
- ✓ **Incremental Adoption**
 - Deploy decision methodology one decision at a time
 - Focus on decisions that need to change often & quickly
 - Expand adoption of “market validated” decisions



IBM Operational Decision Manager







Decision Management on z/OS


Comprehensive Flexibility


Architect,
Application
Developer

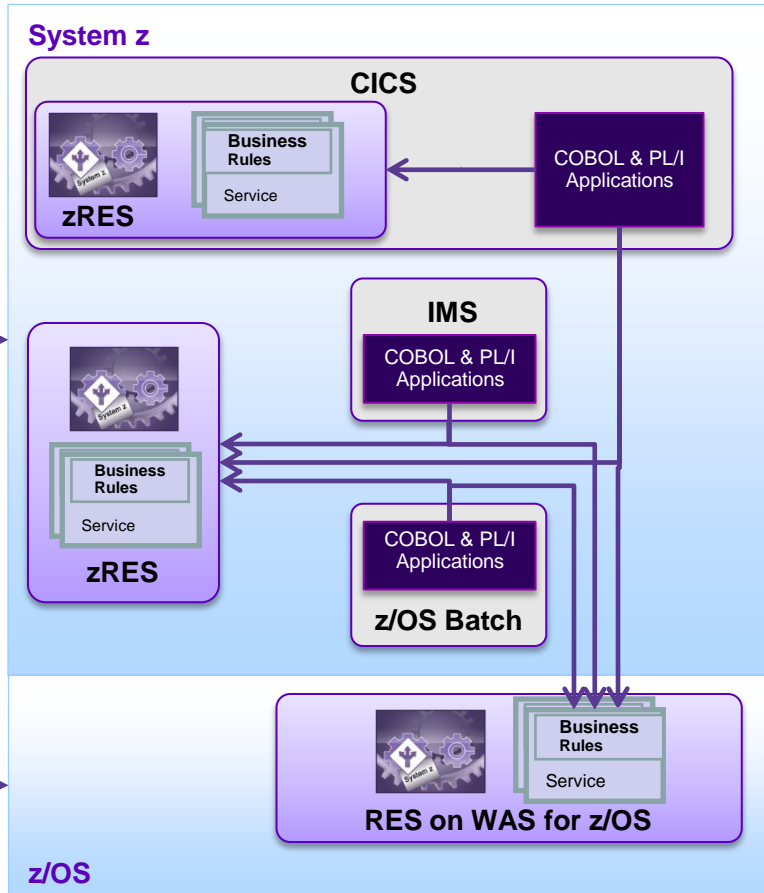

Rule Designer
+ COBOL & PL/I Management
Workstation


Business Analyst,
Business Manager


Decision Center
+ COBOL & PL/I Management


**Decision Center
Repository**
**Distributed or z
System**

Deploy





Simplified Integration with zRES API

- **Connect to Execution Region**
 - call 'HBRCONN' using HBRA-CONN-AREA
- **Populate Header with parameter data**
- **Connect to Execution Server**
 - call 'HBRRULE' using HBRA-CONN-AREA
 - IF HBRA-CONN-COMPLETION-CODE =
HBR-CC-OK
THEN
...
- **Disconnect from Execution Region**
 - call 'HBRDISC' using HBRA-CONN-AREA

```
01 HBRA-CONN-AREA.  
10 HBRA-CONN-EYE PIC X(4) VALUE 'HBRC'.  
10 HBRA-CONN-LENTH PIC S9(8) COMP.  
10 HBRA-CONN-VERSION PIC S9(8) COMP VALUE +2.  
10 HBRA-CONN-RETURN-CODES.  
15 HBRA-CONN-COMPLETION-CODE PIC S9(8) COMP.  
15 HBRA-CONN-REASON-CODE PIC S9(8) COMP.  
10 HBRA-CONN-FLAGS PIC S9(8) COMP VALUE +1.  
10 HBRA-CONN-INSTANCE PIC X(24).  
10 HBRA-CONN-RULE-COUNT PIC S9(8) COMP.  
10 HBRA-CONN-RULE-MAJOR-VERSION PIC S9(8) COMP.  
10 HBRA-CONN-RULE-MINOR-VERSION PIC S9(8) COMP.  
10 HBRA-CONN-RULEAPP-NAME PIC X(256).  
10 HBRA-RESPONSE-AREA.  
15 HBRA-RESPONSE-MESSAGE PIC X(512).  
10 HBRA-RA-PARMETERS.  
15 HBRA-RA-PARMS OCCURS 32.  
20 HBRA-RA-PARAMETER-NAME PIC X(48).  
20 HBRA-RA-DATA-ADDRESS USAGE POINTER.  
20 HBRA-RA-DATA-LENGTH PIC 9(8) BINARY.  
10 HBRA-RESERVED.  
15 HBRA-RESERVED02 PIC X(12).  
15 HBRA-RESERVED03 PIC X(64).  
15 HBRA-RESERVED04 PIC X(64).  
15 HBRA-RESERVED05 PIC X(128).  
15 HBRA-RESERVED06 PIC X(128).
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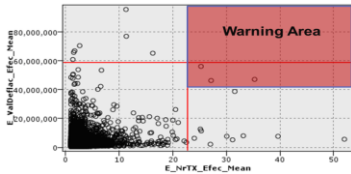
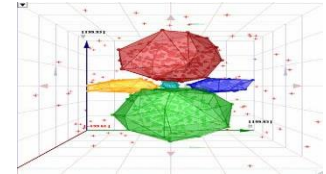



Analytical Decision Management – Predictive Scoring

A key-element of the real-time decisioning strategy

- **Predictive models detect patterns**

- Deviation from expected behavior can isolate bad (or good) behavior, trigger additional actions or new targeted marketing and up-sell / cross-sell offers

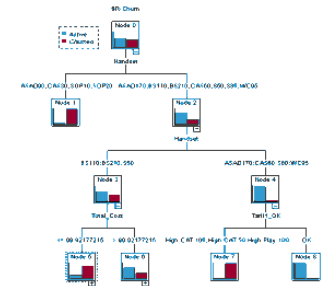


- **Like the real world, predictive models are not binary**

- Understanding how closely a pattern of behavior matches a known pattern of bad (or good) behavior can help uncover crimes or non-obvious opportunities

- **Predictive models can have many variations**

- Can be built to assess only specific transactions or more generically for all transactions
- Multiple layers of models can be invoked for increasing sophistication of analysis, triage leading to further inspection of contributing factors and weights



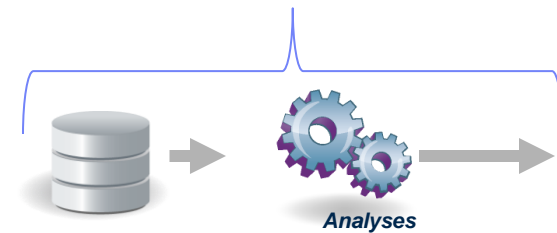


Analytical Decision Management – Predictive Scoring

A 2 steps approach

Step 1 – Build the predictive model

Identify **predictive models/patterns** found in historical data



Data:
Demographics
Account activity
Transactions
Channel usage
Service queries
Renewals
...

Segments
Profiles
Scoring algorithms

Scoring Engine

Step 2 – Execute the predictive model

Use those predictive models with variables to score transactions & **identify the best possible future outcomes**



Score

Customer Service Center

Practical scoring approaches

- Off-line: Batch Scoring
- On-line: External scoring function
- On-line: Within a transaction, in-DB, real time



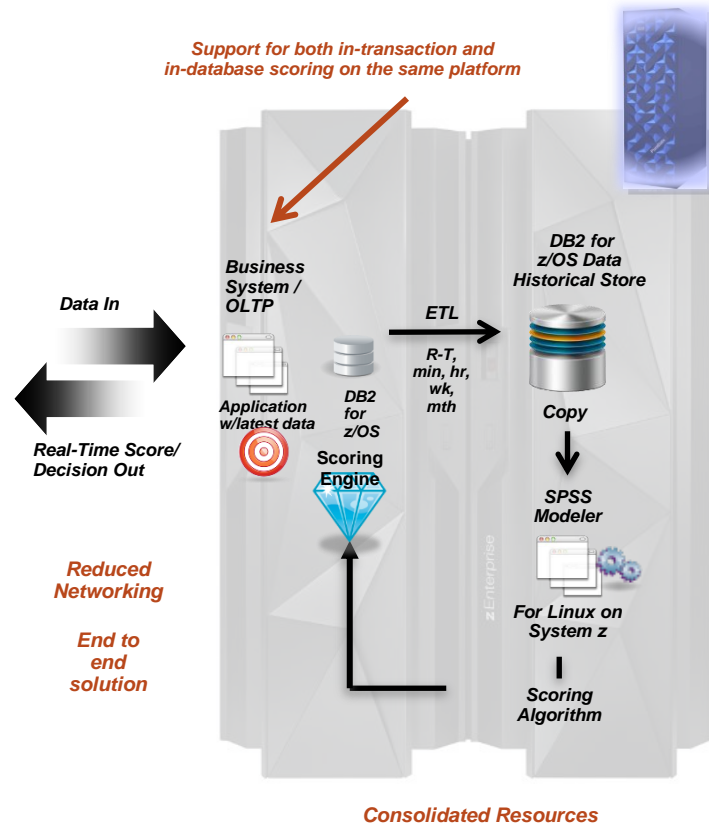
Real time scoring of the transactional data in DB2 for z/OS SPSS & DB2 for z/OS

▪ IBM SPSS Real-Time Scoring Adapter for DB2 on z/OS

- Enables customers to score predictive models built by IBM SPSS Modeler directly within a specific online transaction processing transaction that is running with DB2 for z/OS.

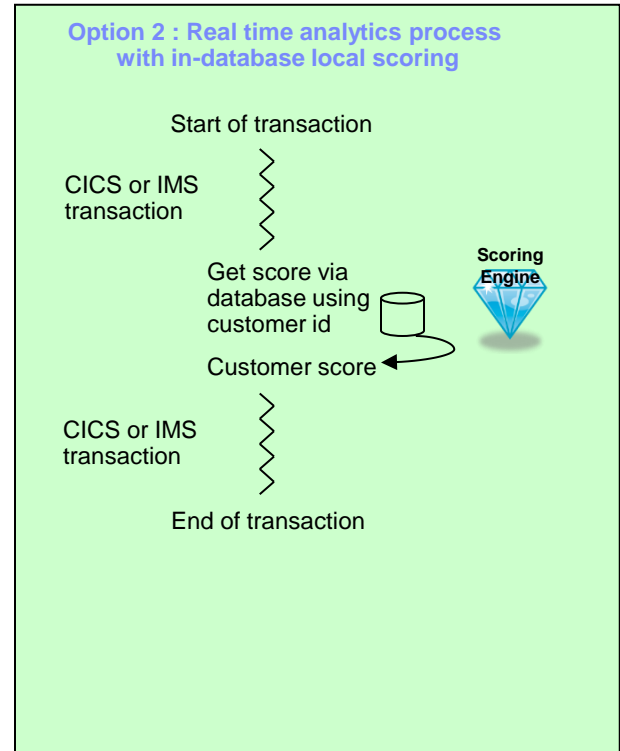
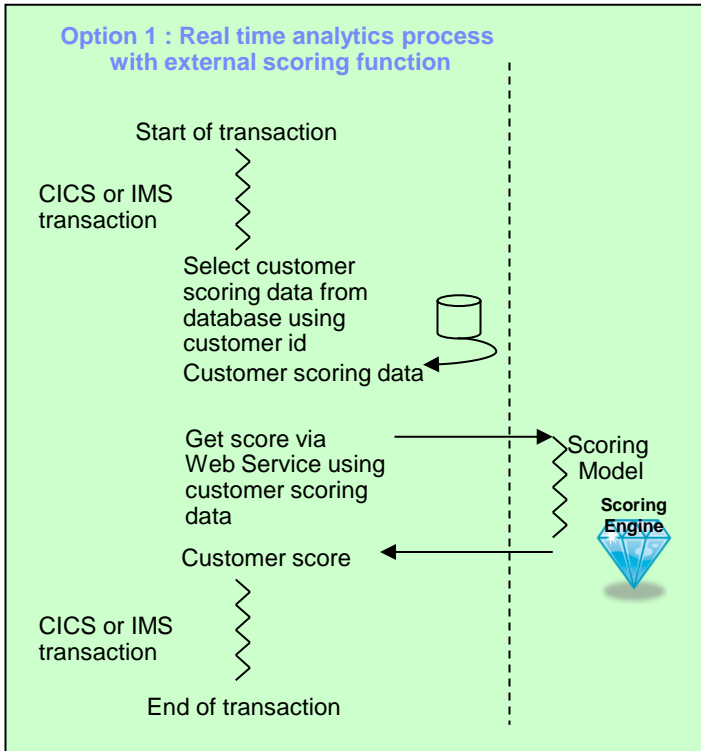
▪ Business Value

- Delivers better, more profitable decisions, using the latest data, at the point of customer impact
- Enables more informed customer interaction
 - Improves customer service
 - Increases revenue per customer ratio
 - Heightens customer retention
- Improves fraud identification and prevention
 - Reduces risk and exposure





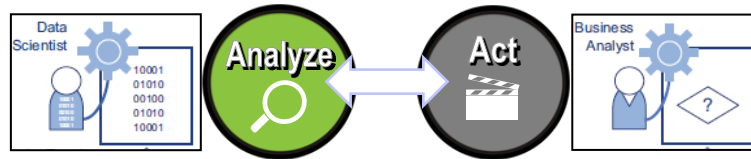
Real time scoring - What has changed?



Assumption : customer data needed to obtain scoring from model are located in operational database. If historical data are needed, process will vary.



Core software for Real-Time Decision solutions on z Systems



▪ Predictive Analytics

- Product: IBM SPSS Modeler with Scoring Adapter for z
- Delivers better, more profitable decisions, at the point of customer impact
- Improves accuracy by scoring directly within the transactional application against the latest committed data
- Delivers the performance needed to meet operations SLAs
- Avoid data governance and security issues, save network bandwidth, data copying latency, disk storage
- Same high qualities of service as operational systems
- Easier to incorporate scoring into applications

▪ Business Rules

- Product: IBM Operational Decision Manager for z/OS
- Automate and manage frequently occurring, repeatable business decisions
- Codifies business policies, practices and regulations
- Enables changes to be easily made by business people
- Automates decision making with the fidelity of an expert
- Centralized, externalized decisions enable consistency and reuse
- Manage business decisions in a natural language
- Decouple development and decision change lifecycle



Demo from IBM Client Center Montpellier - The Loan application

- **Video available:** http://www.youtube.com/watch?v=F2p4_GbOXEs
- **The Loan application**
 - A customer is eligible for a loan according to several criteria such as the amount of the loan, the yearly income of the borrower, and the duration of the loan.
 - The decision logic is embedded in multiple loan approval applications
 - The branch application running on z/OS (Cobol/CICS)
 - The Internet application running on Java EE server

Could be COBOL & IMS or PL/I & IMS

Branch Application (Cobol & CICS)

validation

eligibility



Internet Application (Java EE)

validation

eligibility



Batch Scoring Application

scoring



Decision logic

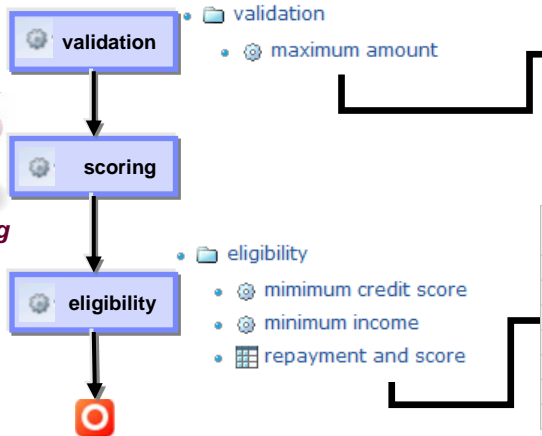
- Rules written in software code cannot be read by business people
- Hard coded rules are difficult to change
- Rules intertwined within applications cannot be reused by other systems



Demo from IBM Client Center Montpellier - The Loan application ...

▪ The new Loan application

- The new Loan application illustrates how **decision management** helps lenders to make an online decision for loans approval.
- Functional Description
 - Manage loan approval through
a set of Business Rules
 - An in transaction, in database real-time scoring*



maximum amount ^

Definition:

if
the amount of 'the loan' is more than 800000
then
add "PSSCLOAN001 The loan cannot exceed 800000" to the messages of 'the loan' ;
reject 'the loan' ;

	dept to income		credit score		message
	minimum	maximum	minimum	maximum	
1			0	200	PSSCLOAN004 dept-to-income too high compared to credit score
2	0 %	30 %	200	800	⊘
3			0	400	PSSCLOAN004 dept-to-income too high compared to credit score
4	30 %	45 %	400	800	⊘
5			0	600	PSSCLOAN004 dept-to-income too high compared to credit score
6	45 %	50 %	600	800	⊘
7	≥ 50 %		0	800	PSSCLOAN004 dept-to-income too high compared to credit score

- Natural language rules can be easily read by business people
- Externalized rules are easy to author, change, simulate and govern
- Centralized rules enable reuse and consistency



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Hybrid Analytics Solution using IBM DB2 Analytics Accelerator for z/OS:
<http://www.redbooks.ibm.com/redbooks/pdfs/sg248151.pdf>



IBM DB2 Analytics Accelerator

Delivering critical insight at the speed of business

*The high performance appliance that integrates
Netezza technology with System z technology
to deliver dramatically faster business
analytics*



What does it do?

- Accelerates complex DB2 for z/OS queries up to 2000x faster
- Lowers the cost of storing, managing and processing historical data
- Minimizes latency
- Reduces System z capacity requirements
- Improves security and reduces risk
- Complements existing investments
- Reduces governance efforts

What's new in Version 4.1?

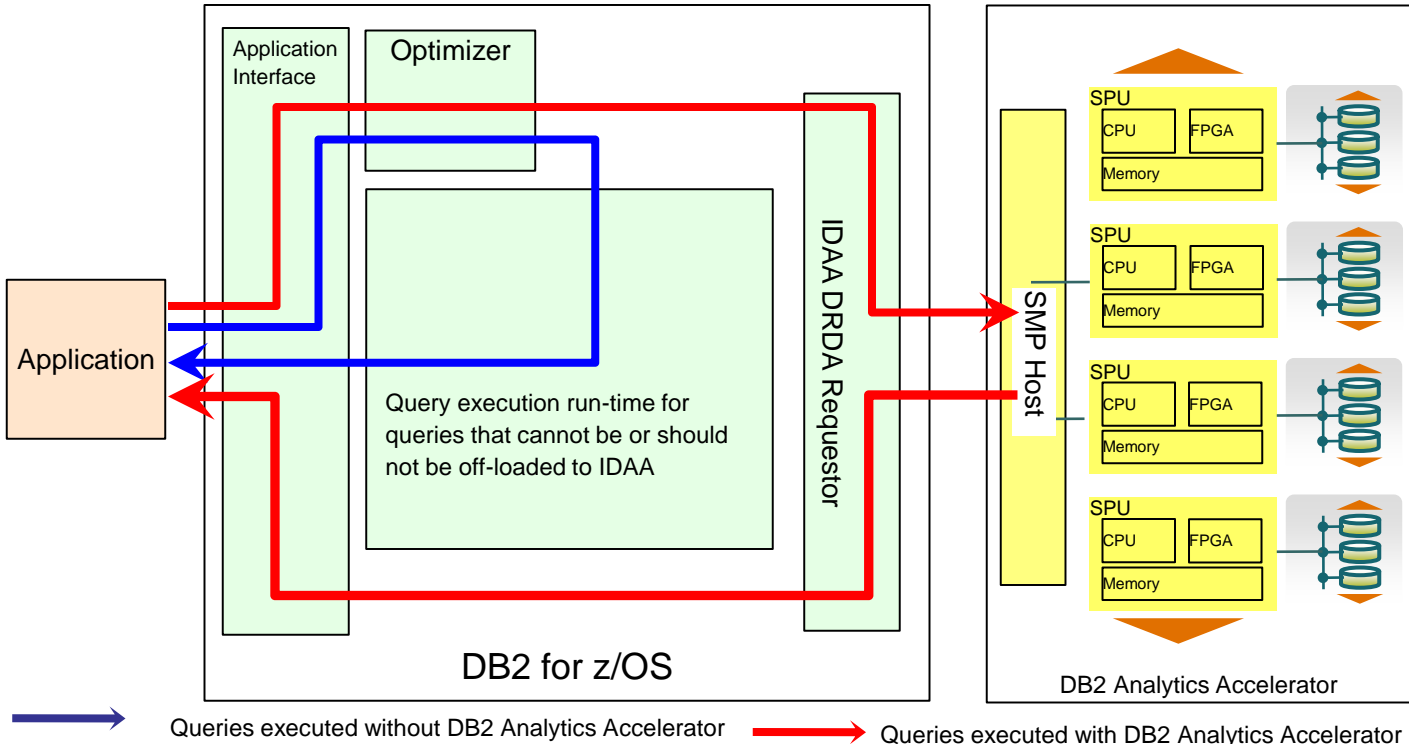
- **Accelerate a broader spectrum of queries** including Static SQL and multi-row FETCH
- **Improved Enterprise Robustness & Scalability** with enhanced workload balancing, improved incremental update performance and enhanced monitoring
- **High Performance Storage Saver** - improved ease of use with built-in restore, better access control for archived partitions and protection of moved partitions
- **And more . . .**

[Read the white paper here](#)



IBM DB2 Analytics Accelerator

Query Execution Process Flow





IBM DB2 Analytics Accelerator – Four Usage Scenarios

Understand your workload and data:

On average, 70% of the data that feeds data warehousing and business analytics solutions originates on the System z platform (financial information, customer lists, personal records, manufacturing...)



	Where transaction source data is being analyzed today	Use Case	Benefits
1	If the data is analyzed on the mainframe	Rapid Acceleration of Business Critical Queries	Performance improvements and cost reduction while retaining System z security and reliability
2	If the data is offloaded to a distributed data warehouse or data mart	Reduce IT Sprawl for analytics	Simplify and consolidate complex infrastructures, low latency, reliability, security and TCO
3	If the data is not being analyzed yet	Derive business insight from z/OS transaction systems	One integrated, hybrid platform, optimized to run mixed workload. Simplicity and time to value
4	If the analysis is based on a lot of historical data	Improve access to historical data and lower storage costs	Performance improvements and cost reduction



Fast Evolution of IBM DB2 Analytics Accelerator

▪ Version 1

- IBM Smart Analytics Optimizer
- In-memory, column-store, multi-core and SIMD algorithms
- Discontinued and replaced by IBM DB2 Analytics Accelerator



▪ Version 2

- New name: IBM DB2 Analytics Accelerator
- Incorporates Netezza query engine
- Preserves key V1 value propositions and adds many more



▪ Version 3

- Better performance, more capacity
- Incremental update
- High Performance Storage Server



▪ Version 4

- Much broader acceleration opportunities
- More enterprise features
- Support of static SQL queries



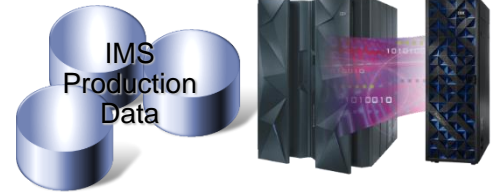


Use case: IMS Data and IDAA

Leveraging your DB2 & IMS information infrastructure

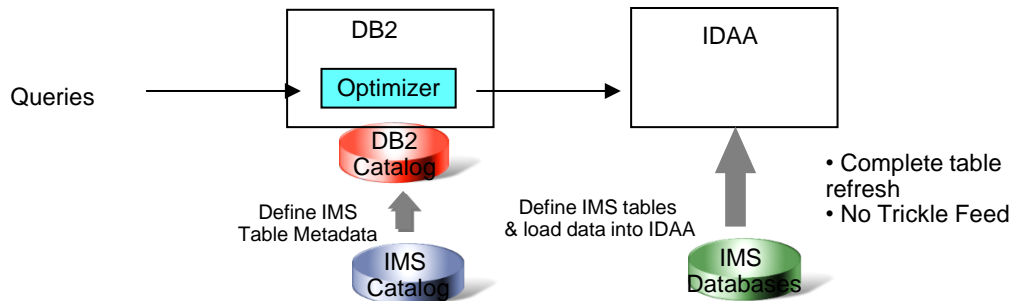
Value

- Bring the analytics to the z enterprise
- Reduction in data movement solutions
- Offer a holistic view of analytics across System z



Initial Implementation: Routing IMS Queries thru DB2 only with data movement optimization

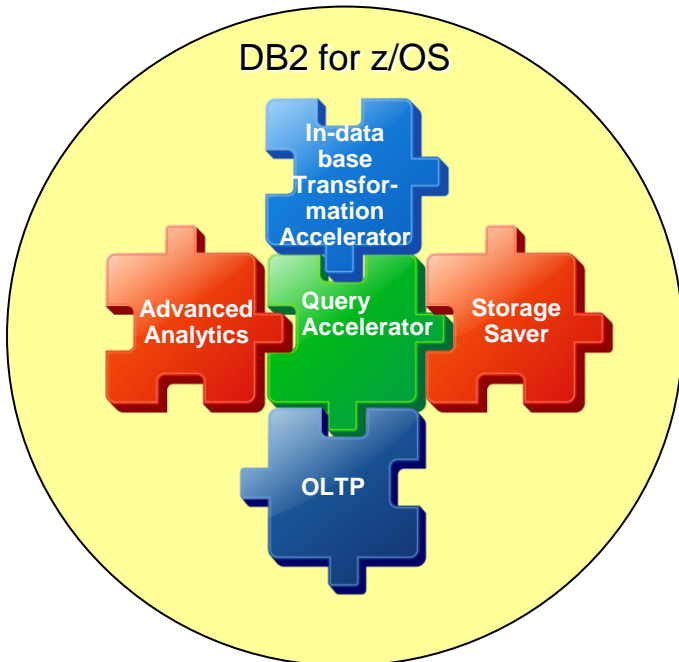
- http://ibm.biz/accelerate_insights_ims_transactional_data





IBM DB2 Analytics Accelerator Strategy

- Enable DB2 transition into a truly universal DBMS that provides best characteristics for both OLTP and analytical workloads.



- Complement DB2's industry leading transactional processing capabilities
- Provide specialized access path for data intensive queries
- Enable real and near-real time analytics processing
- Execute transparency to the applications
 - Operate as an integral part of DB2 and z/OS
- Extend query acceleration to new, innovative usage cases, such as:
 - in-database transformations
 - advanced analytical capabilities
 - multi-temperature and storage saving solutions
- Ultimately allow consolidation and unification of transactional and analytical data stores



Agenda

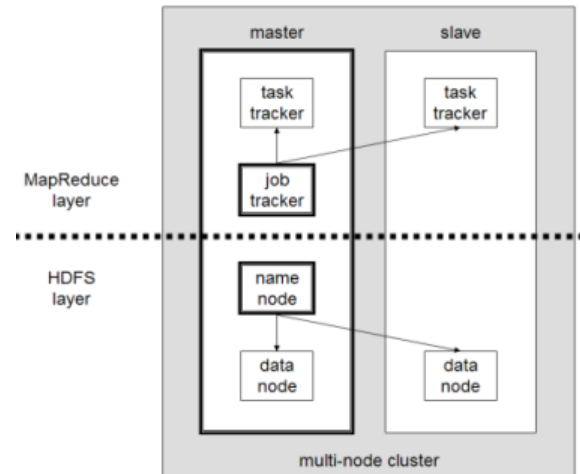
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Integration of Hadoop with zData

- **Open source software framework from the Apache Software Foundation that supports data-intensive highly parallel applications**
 - High throughput, batch processing
- **Designed to run on large clusters of commodity hardware**
 - Lots of cores – inexpensive cores working all the time
 - Processors fail – that's ok – just replace them
 - Lots of redundant disks – really inexpensive disks
 - Disks crash – that's ok – just replace them
 - But nothing in Hadoop requires commodity cores and disks!
- **Two main components**
 - Hadoop Distributed File System (HDFS)
 - Self-healing, high-bandwidth clustered storage
 - MapReduce engine
 - A simple, powerful framework for parallel computation



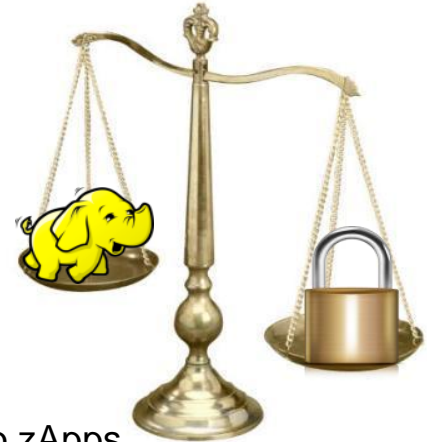


Use cases for z System shops

1 - Mainframe clients want to incorporate sensitive mainframe data into exploratory analytic models

What has been holding them back?

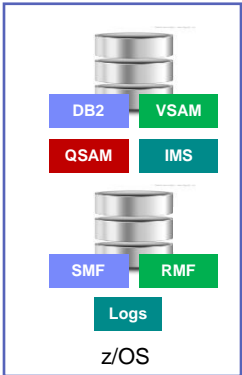
There is risk associated with having copies of sensitive data existing outside the mainframe



2 - Mainframe clients want to incorporate into zApps analytics based on non-z data like social media, machine generated data, e-mail

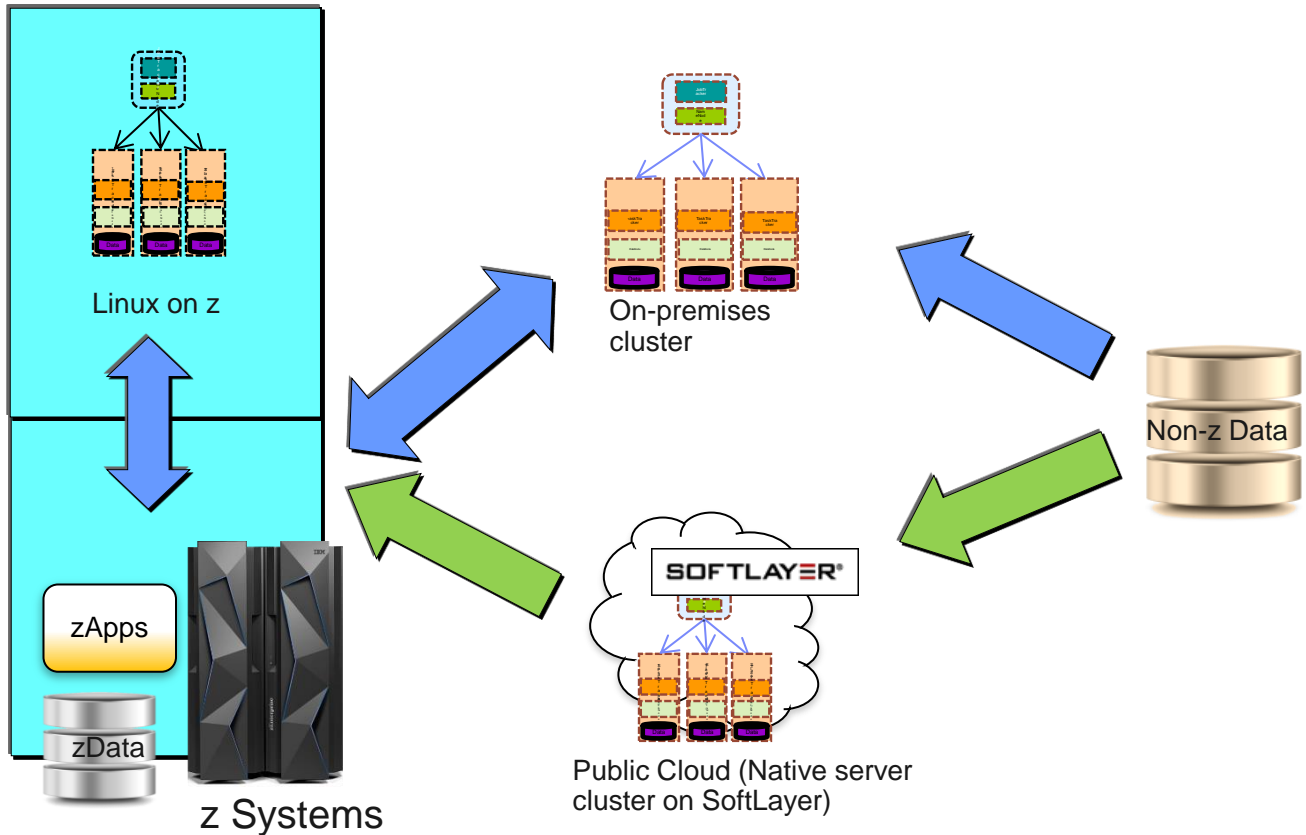
What has been holding them back?

Performance & Integration are key inhibitors for real-time analytics.





Use cases for z System shops ...





Use Case 1: Challenges

- Address governance, security, and other operational practices
- Leverage Big Data without losing control of data



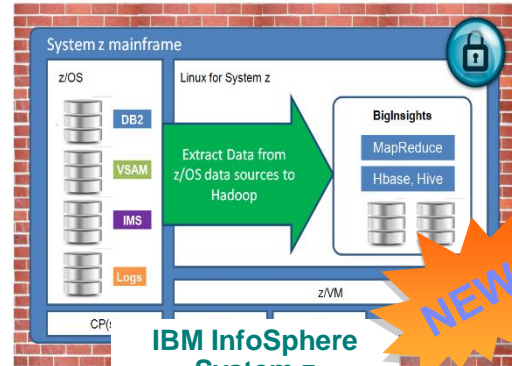
Challenge	How to address?
Clients are worried about data governance as the data moves off of z. Data is considered secure as long as it is on z. How do you secure sensitive data once it has left z?	z needs to be in "control" of the data. How can existing security policies be applied?
The ingestion of data from z into the Hadoop environment is turning into a bottleneck	Need high speed / optimized connectors between traditional z/OS LPARs and a z-controlled-Hadoop environment



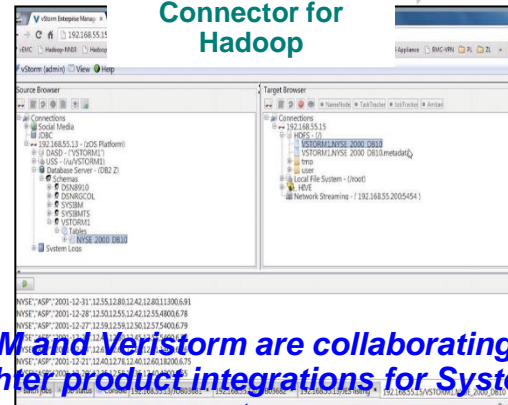
Use Case 1: Populating System z Hadoop clusters

IBM & Veristorm partnership

- **A secure pipe for data**
 - Data never leaves the box
 - RACF integration – no need for separate or special credentials
 - Data streamed over secure channel using hardware crypto, SSL
- **Easy to use ingestion engine**
 - Native data collectors accessed via graphical interface
 - Light-weight; no programming required
 - Wide variety of data sources supported, including JDBC for non-mainframe data sources
 - Automatic code page conversions
 - COBOL copybook Parsing and presentation, Metadata translation
 - Automated job scheduling
- **Fast and low resource utilization**
 - HiperSockets and 10 Gbps internal transfer
 - Streaming technology does not load z/OS engines or require DASD for staging



**IBM InfoSphere
System z
Connector for
Hadoop**



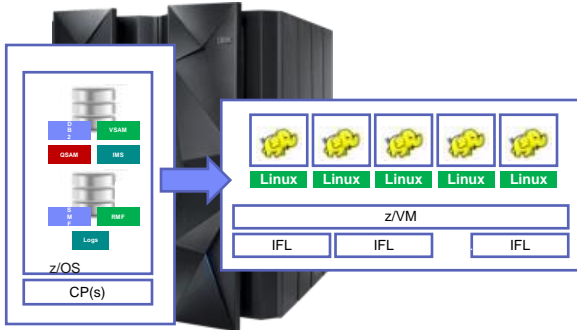
**IBM and Veristorm are collaborating on
tighter product integrations for System z
customers**



Use Case 1 - What makes sense when?

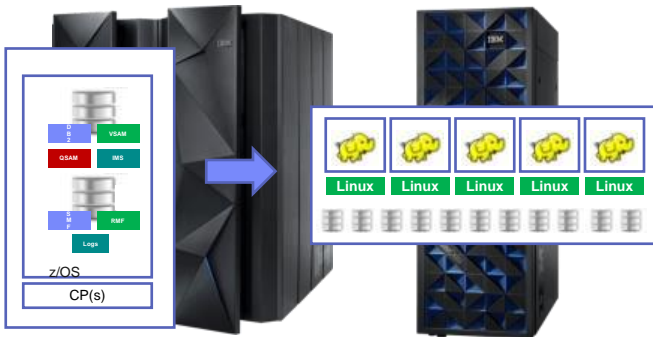


Hadoop on the Mainframe



- Data originates mostly on the mainframe (Log files, database extracts)
- Data security a primary concern
- Clients will not send data across external net
- Relatively small data – 100 GB to 10s of TBs
- Hadoop is valued mainly for richness of tools
- Z governance and security models needed

Hadoop off the Mainframe



- Data originates mostly from distributed
- Security less of a concern since data is not trusted anyway
- Very large data sets – 100s of TB to PBs
- Hadoop is valued for ability to manage large datasets economically
- Desire to leverage cheap processing and potentially cloud elasticity



Use Case 2: “Augmented Analysis”

- **Very large amounts of non-relational data originate outside System z**
 - e.g. e-mails sent by customers, tweets, posts to company Facebook page
- **Analyze sentiments and identify customers who are dissatisfied with company**
 - Words ‘cancel’, ‘terminate’, ‘switch’ or synonyms thereof
 - Names of competitors
- **Gather names and e-mail addresses of customers at risk**
- **Join these results with operational data**
 - Alert agents of at-risk customers
 - Agents work with customer and offer a promotion to stave off defection

*All of the
operational
applications &
data are here*

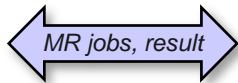


*There is also
potentially relevant
data here*



DB2 for z/OS V11 and IBM BigInsights working together

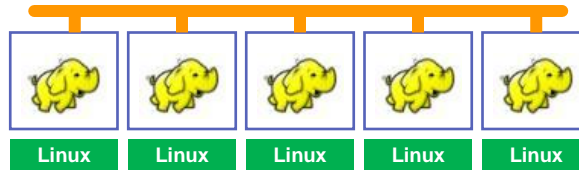
- **DB2 submits a job to BigInsights using JSON Query Language (JAQL)**
 - Here's a list of customer names, who is at risk of leaving?
- **BigInsights job runs successfully, creates a file of results in the Hadoop Distributed File System (HDFS) and terminates.**
 - These customers are at risk of leaving
- **DB2 executes a table UDF (HDFS_READ) to read the BigInsights result file.**
- **DB2 joins the result with the relevant tables and completes the analysis**
 - Agent action: contact these customers and make them a pre-emptive offer



Includes Linux on z clusters!



IBM InfoSphere BigInsights
cluster





Scenario: Claiming disability allowance



"Unable to work"

Work Status



"Dude - awesome vacation"

Facebook Post

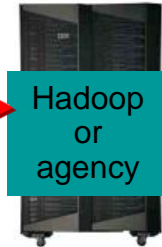


Make payment or investigate



Deterrent for fraudsters - Cost Savings for the business

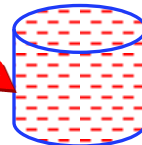
Data from Social Media sites analyzed with Text analytics



Hadoop or agency

Refined Search parameters from OLTP environment

Result Set for further processing



z Systems



Result set uploaded or directly imported into OLTP DBMS



Scenario: Claiming disability allowance

Step by Step

- **The claimant submit a transactional request to claim for disability.**
- **Later a batch application identifies all entitled parties for a disability payment.**
 - This complex query could benefit of the DB2 Analytics Accelerator.
- **We add in this batch a “fraud detection” step as a request for information on claimants from an Hadoop cluster or an amalgamator agency.**
 - A z/OS based Apps on z/OS kicks off a Hadoop job by using a SQL query.
- **Information on claimants is gathered from social media and other sources – and the results set fed back into Hadoop or presented in an agreed format by the agency.**
 - IBM BigInsights, the IBM Hadoop Solution ingests data that usually is not ingested by established structured data analysis systems like DB2 for z/OS, .e.g. email from all clients sent to an insurance company, facebook, ...
 - Analytics can search for family of words, can identify customer sentiment from key words in emails or based on comments in social media.
 - IBM BigInsights job runs successfully and creates a file of results.
- **Data is sent back to DB2 for z/OS in a predefined format and can be “joined” to the claimants main record.**
 - The z/OS based apps can read thru DB2 the BigInsights result file using a User Defined Function (UDF).
 - Then it can decide what to do as Next Best Action.



Agenda

- Introduction
- Focus On Analytics & Decision Management
- Focus on IDAA with your IMS Data
- Focus on Hadoop
- Use Cases





Use Case - Rapid Acceleration of Business Critical Queries

New Business Opportunities

Cost Reduction

Productivity Improvement

Business Value:

- Dramatically improve query response - up to 2000X faster to support time-sensitive decisions
- Empower frontline users with new analytics capabilities
- Rapid delivery of reports to increase end user productivity
- Meet growing business demand for analytical reports based on trusted data

Technical Value:

- Savings for workload that executes on DB2 Analytics Accelerator
- Less time analyzing, tuning and testing queries
- DB2 Analytics Accelerator is non-disruptive and easy to implement
 - No application changes required and totally transparent to end users

Client Example:

- SwissRe: Insurance – provide fast, accurate analysis to set the right premiums (up to 70% faster)
- Large South American Bank – reports that used to run for hours now return in seconds helping to better detect fraud





Use Case - Derive business insight from z/OS transaction systems

New Business Opportunities

Cost Reduction

Productivity Improvement

Business Value:

- Derive additional business insight directly from z/OS transaction systems and data
- Deliver new business functions based on near real-time analytics
- Extremely fast ad-hoc reporting against original production data in near real-time
- Cross selling and up selling which drives incremental revenue and profit
- Reduced fraud which drives incremental revenue and profit

Technical Value:

- Reduce time-to-market
 - Leverage existing transactional data
 - Don't have to wait to design and build DWH and/or data mart
- Improved price/performance for analytic workloads
- Reduce costs with infrastructure simplification (e.g. eliminate data marts, fewer copies of data, reduce ETL costs)

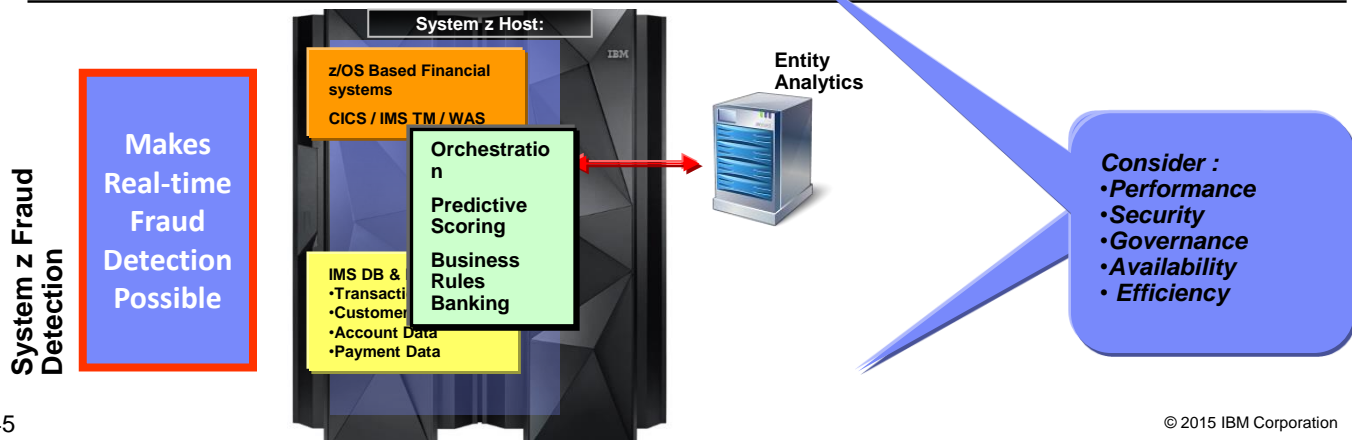
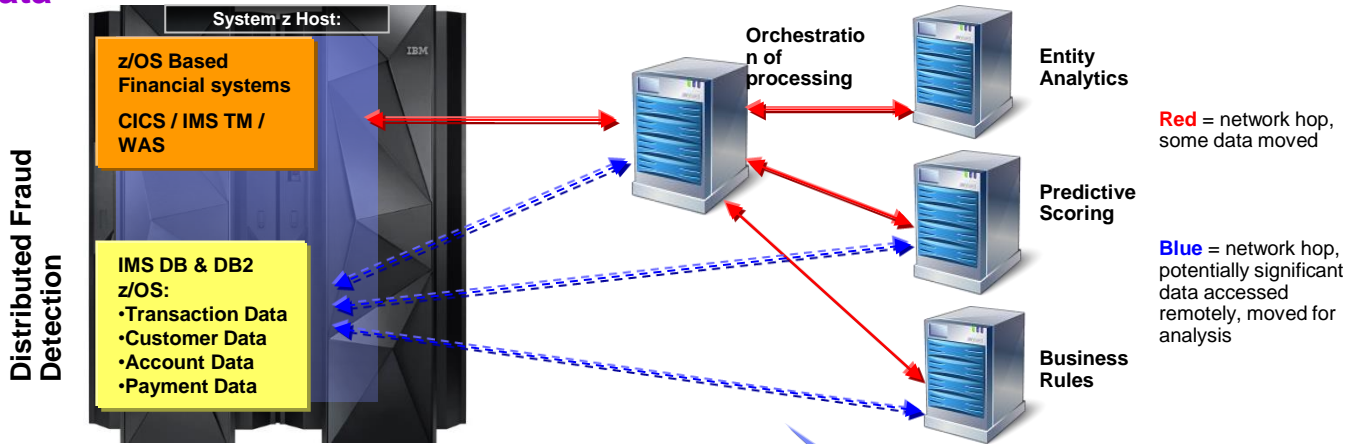
Customer Examples:

- NLB: Banking – Better support for retail e-banking
- Swiss Mobiliar: Insurance – Provide timely insight to a growing user community while keeping compute costs flat





Example: Fraud Detect & Prevent Scenario for z/OS-based Critical Apps & Data

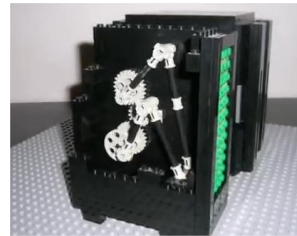




Example: Fraud Detect & Prevent Scenario - Video For Fun

Smarter banking featuring Fraud Detection

– <http://www.youtube.com/watch?v=aZbEMIUIFm0>



Decision Management on System z

– https://www.youtube.com/watch?v=F2p4_GbOXEs

IBM Client Center - Montpellier

The new SBSLoan application

Objectives

- The SBSLoan application illustrates how decision management helps lenders to make an online decision for loans approval.

Functional Description

- Manage loan approval through
 - A set of Business Rules
 - An in transaction, in database real-time scoring

Validation

- Validation amount
- Validation interest

Scoring

- Eligibility
 - Minimum credit score
 - Minimum income
 - Requirement and assets

Decision

- Approval
- Rejection

Performance Metrics

Metric	Value
Approval rate	95%
Rejection rate	5%
Processing time	10s
Customer satisfaction	90%

IBM Operational Decision Manager

- Business Rules & Scenarios

Key Features:

- Natural language rules can be easily read by business people
- Externalized rules are easy to author, change, simulate and govern
- Centralized rules enable reuse and consistency



Use Case - Online access to historical data and lower storage costs

Business Value:

- Make more data accessible to end users so decisions can be made from larger samples
- Reduce storage costs while cost-effectively maintaining large amounts of historic information for analytics
- Extremely high performance analysis against online and historical data

Technical Value:

- Reduce the cost of host storage by up to 95%
- Retain same high-speed query access transparently through DB2
- Add more data to the analytic solution – most System z customers have limited the amount of historical data they save and analyze due to cost
- Cost reductions: less tablespace/indexspace storage and utility processing savings
- Online/Always available archive – no delays

Customer Examples:

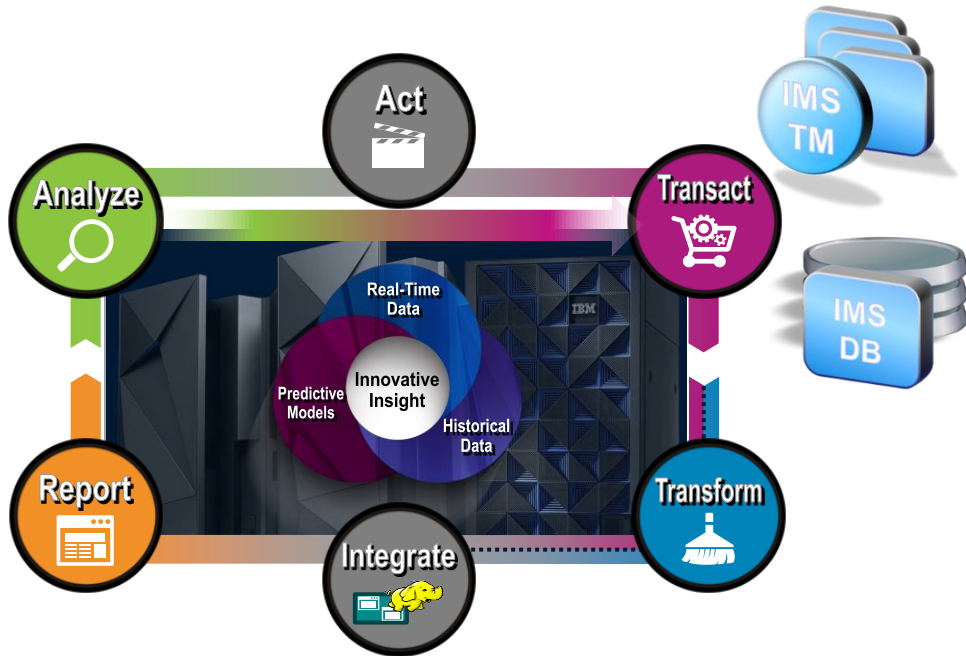
- US Financial Institution: better fraud detection with high-performance analysis against larger data pool
- European Bank: improved customer satisfaction with account insight available immediately vs. a 1-day delay



Historical Data:
Doesn't require updating – move to Accelerator only



z Systems: vision, strategy and technology to fuse transactions and analytics to support enterprise decisions



Best of class integrated data life cycle management for: Generating customer insights, fighting fraud and financial crimes, ...