Capitalize On The Power Of An IBM Solution

Create New Intelligence With
IBM Information Management Solutions

Without New Intelligence Business Decisions Can Be Suspect…

The mortgage line of business is doing well. Our late payment rates are very low.

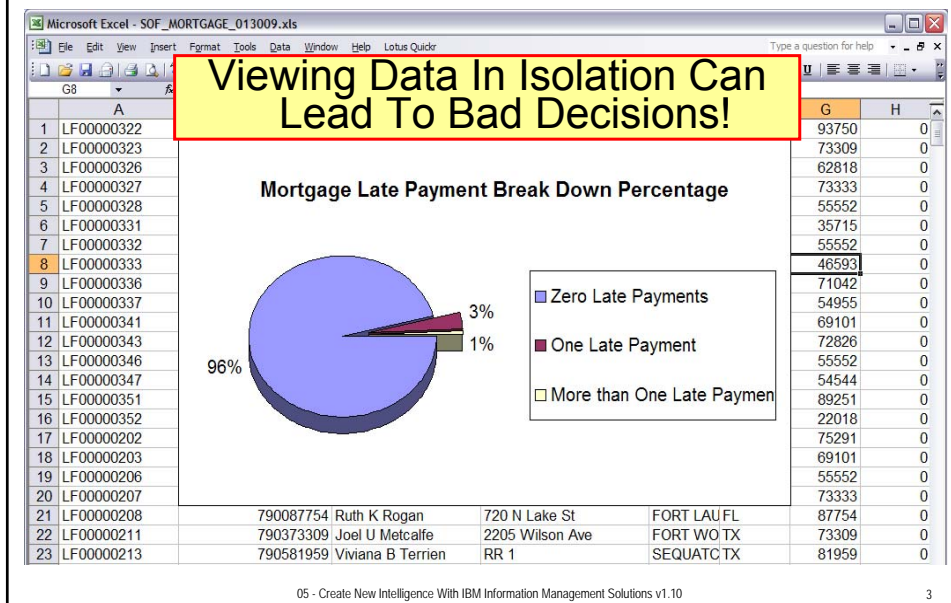Then why are other areas of our business seeing problems…

Mortgage Line of Business VP

Service Oriented Finance CEO

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Isolated Customer Information Leads To An Incomplete View Of The Business

Viewing Data In Isolation Can Lead To Bad Decisions!

Mortgage Late Payment Break Down Percentage

- Zero Late Payments
- One Late Payment
- More than One Late Payment

96% 3% 1%

Service Oriented Finance Needs A Complete View Of Their Customers

- **Problem**: Segmented lines of business store their data in isolated silos
  - ▶ Banking, Credit Cards, Mortgage, Consumer Loans

- **Requirement**: Identify customer trends faster by viewing data from across all areas of business

- **Solution**: Create new intelligence by building an enterprise data warehouse containing a complete view of customer information

Create New Intelligence With IBM Information Management Software On Power

Cognos 8 Business Intelligence

InfoSphere Warehouse 9.7

InfoSphere Information Server 8.1

Analysis Reports

Data Warehouse

Extract Transform Load

Savings

Credit Cards

Checking

Mortgages

Loans

Collect Historical Data

Operational Data Source

Analysis Tools

ETL Processing

Scalable Database

Connections
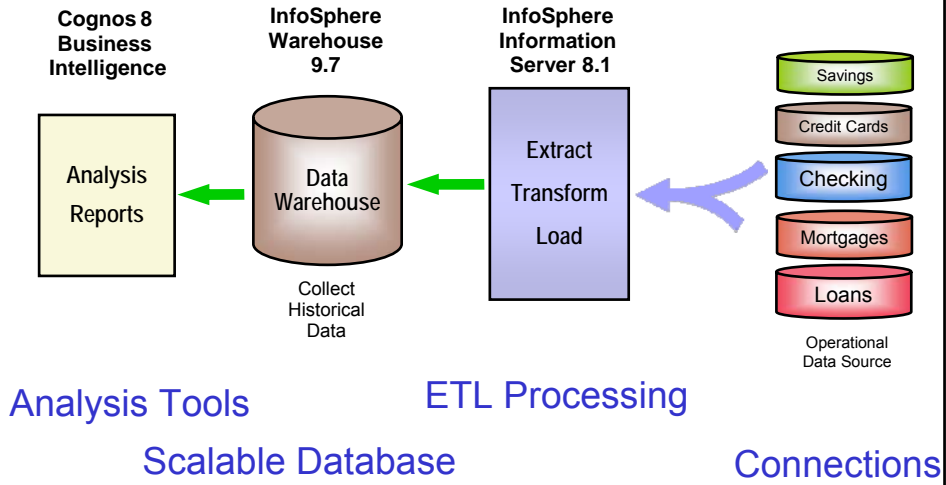
Industry Data Models Help You Get Started

Where do we start?

IBM industry data models can help you get started quickly.

Service Oriented Finance CIO

IBM

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IBM Industry Data Models Accelerate Your Data Warehouse Solution
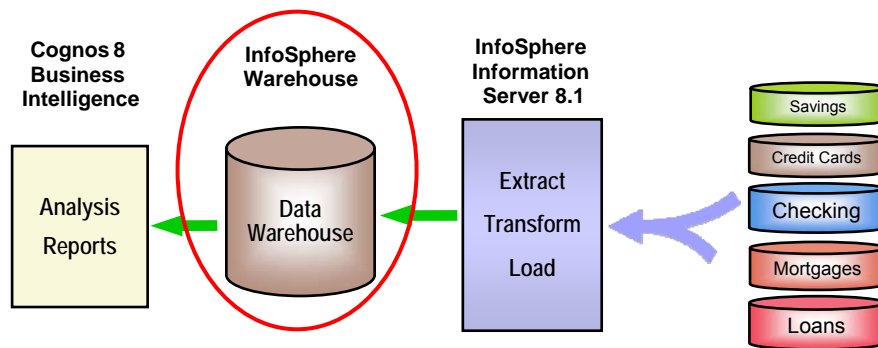
- Industry Data Models are:
  - ► Best practices from over 400 IBM clients
  - ► Built on InfoSphere Information Server and InfoSphere Data Architect

- Industry Data Models include:
  - ► Enterprise Data Warehouse (EDW) Model
  - ► Business Terminology Data Model
  - ► Business Solution Templates (BST)

- Industry Data Model Business Benefits
  - ► 83% report their Data Warehouse is better aligned with business needs
  - ► Over 50% report that businesses are now getting the information they want

- Industry Data Model Development Benefits
  - ► 15-20% cost savings to build the warehouse
  - ► 20-25% decrease in the time spent in design phase
  - ► 30-40% decrease in time spent in the modeling phase

- Source Hurwitz

At The Heart Of New Intelligence Is A Data Warehouse

Cognos 8 Business Intelligence

InfoSphere Warehouse

InfoSphere Information Server 8.1

Analysis Reports

Data Warehouse

Extract Transform Load

Savings

Credit Cards

Checking

Mortgages

Loans

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Use IBM InfoSphere Warehouse To Build Your Data Warehouse on Power Systems

- InfoSphere Warehouse is built on DB2
  - ▶ Inherits DB2's features, performance, scalability, and specialized integration with IBM Power Systems hardware

- Manage large-scale data warehouses using advanced data partitioning features
  - ▶ Warehouse tables can be spread across multiple physical systems
  - ▶ Parallel execution across nodes is transparent to incoming queries

- Save money with data compression
  - ▶ Reduce your warehouse data storage footprint, often by as much as 60% - or more!

- Uncover new opportunities using embedded analytics
  - ▶ Use integrated OLAP, data mining, and text analysis capabilities without copying data outside of the warehouse
  - ▶ Cubing Services OLAP engine creates virtual cubes accessible via standard protocols supported by IBM and 3rd party analysis tools (MDX, ODBO, XMLA)

- Eclipse tooling to design data models, OLAP cubes, mining models, and more

- Manage service levels with integrated workload management

Consolidate Oracle Database Applications Within InfoSphere Warehouse Version 9.7 NEW!

- Run Oracle workloads in DB2 9.7 without porting or rewriting code
  - ▶ Native compatibility with 90 to 99% of Oracle specific statements
  - ▶ Reuse your existing applications and skills

What Needs To Change With InfoSphere Warehouse 9.7?		
Oracle	→	**DB2**
Oracle Concurrency Control	→	Native support
Oracle SQL	→	Native support
Oracle PL/SQL	→	Native support
Oracle Data Types	→	Native support
Oracle Functions and Built-in packages	→	Native support
JDBC	→	Native support
SQL*Plus Scripts	→	Native support

InfoSphere Warehouse 9.7 Includes Many New Features To Lower Your Costs

- Enhanced compression features compress more types of data (index, XML, temp, LOB, …)

- Enhanced analytics including new data mining and cubing services features

- Enhanced support for XML data in warehouse environments
  - XML now supported in range partitioning, DPF, MDC, and more

- Simplified workload management with a graphical administration interface

- Improved packaging and competitive pricing with new departmental edition

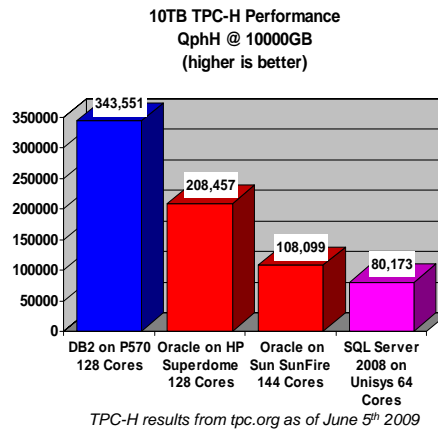# InfoSphere Warehouse Is Optimized For Both Power Systems and IBM Total Storage

- InfoSphere Warehouse and Power Systems integration benefits
  - Deep integration between AIX Workload Management (WLM) and DB2 WLM
    - Helps meet service levels and maintain predictable performance
  - Recovery Integration
    - DB2 recovery process with Power Systems autonomic computing technologies
  - Dynamic Reconfiguration
    - Add or remove processors, memory and I/O adapters on running LPARs

- InfoSphere Warehouse and IBM Total Storage integration benefits
  - I/O Priority
    - IBM TotalStorage DS8000 can favor AIX/DB2 workloads
  - Cooperative Caching
    - Enables more efficient use of memory resources in host and storage systems
    - Warehouse and storage exchange information to optimize use of memory in database buffer pools and the storage system's cache
  - Leverages IBM Total Storage data mirroring
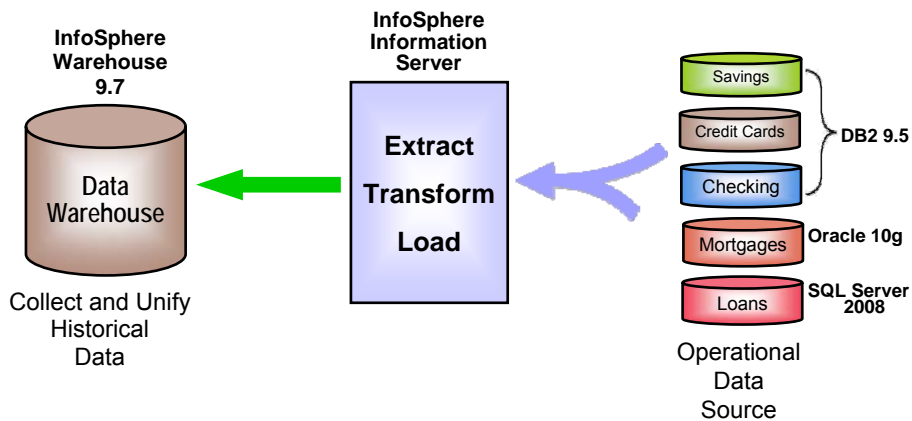   - Protects against loss of entire storage subsystem

The Competitors Can't Match IBM InfoSphere Warehouse On Power Systems

- Integration of IBM InfoSphere Warehouse, AIX, and Power Systems hardware gives IBM an advantage
- Oracle on HP or SUN can't beat IBM
  - ▶ Oracle is designed to run on commodity servers
  - ▶ No optimization specifically for HP servers
- SQL Server on Intel can't beat IBM
  - ▶ Microsoft SQL Server is restricted to the Windows platform
  - ▶ Some portions of SQL Server run in the windows kernel

10TB TPC-H Performance QphH @ 10000GB (higher is better)

DB2 on P570 128 Cores	343,551
Oracle on HP Superdome 128 Cores	208,457
Oracle on Sun SunFire 144 Cores	108,099
SQL Server 2008 on Unisys 64 Cores	80,173

TPC-H results from tpc.org as of June 5th 2009

InfoSphere Scales Bigger and Performs Better than Competitors

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InfoSphere Information Server Can Load Your Data Warehouse

InfoSphere Warehouse 9.7

Data Warehouse

Collect and Unify Historical Data

InfoSphere Information Server

Extract Transform Load

Savings
Credit Cards
Checking
} **DB2 9.5**

Mortgages **Oracle 10g**

Loans **SQL Server 2008**

Operational Data Source

Extract, Transform, and Load (ETL) Jobs Map Data From Sources To Targets

A few simple examples:

Mapping source columns to targets

Different column names and order

Generating new column values

Converting data types and formats

PROD ID	CUST ID	SOURCE ID	QTY	BAL	SALEDATE
000 101	100	01	1	$10,000.00	2007-02-28
000 121	100	01	3	$500.50	2007-02-28
000 102	101	01	1	$ 20,000.00	2007-03-01

Target: Data Warehouse

000 101   100   01   3 $20,000.00   2007-02-28

Transform

A successful data integration project requires a detailed specification for the business goals and technical requirements!

PRODUCT	QTY	CUSTNO	BALANCE	DATE
101	01	100	10000	02-28-2007
121	03	100	500.50	02-28-2007
102	01	100	20000	03-01-2007

Source: Operational Data

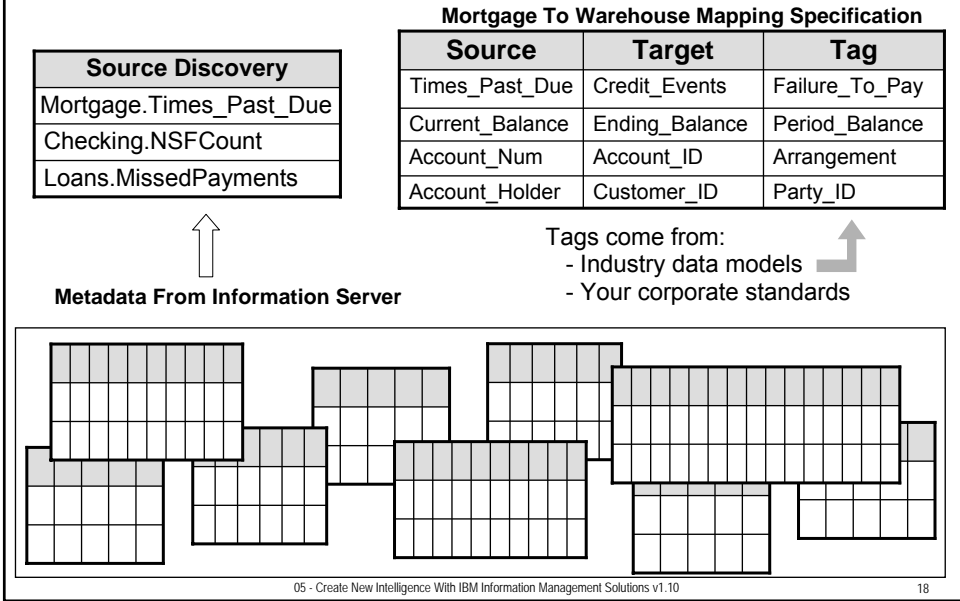# InfoSphere FastTrack Creates Data Maps And Specifications For Your Data Integration Projects

- Create simplified data maps and transformations using drag and drop
  - Automatically discover source and target columns
    - Uses database introspection and Web 2.0-style tagging
    - Use business terms to accurately match source to target

- Data analysts and developers share project specifications
  - Collaboration and reuse improve productivity
  - Use metadata common to all Information Server tools
  - Standard formats and centralized management for governance
    - Synchronize work across global teams

- Generate ETL code directly from job specifications
  - Reduces costs and errors in ETL job development

## Oracle and Microsoft don't offer any of these capabilities

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InfoSphere FastTrack Automatically Discovers Data Mappings Using Business Term Tags

Mortgage To Warehouse Mapping Specification

Source	Target	Tag
Times_Past_Due	Credit_Events	Failure_To_Pay
Current_Balance	Ending_Balance	Period_Balance
Account_Num	Account_ID	Arrangement
Account_Holder	Customer_ID	Party_ID

Source Discovery

Source Discovery
Mortgage.Times_Past_Due
Checking.NSFCount
Loans.MissedPayments

Metadata From Information Server

Tags come from:
- Industry data models
- Your corporate standards

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DEMO: Use InfoSphere FastTrack To Create ETL Specification For Warehouse

- Use discovery feature to find source columns matching business term tags
- Generate ETL job for InfoSphere DataStage

9
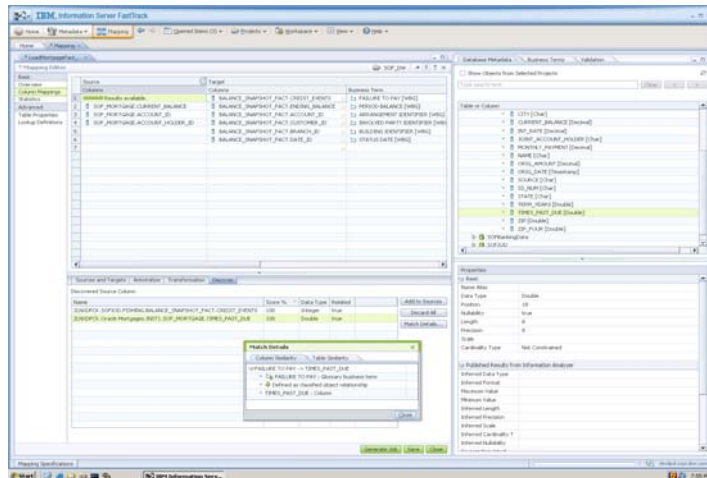
InfoSphere DataStage Creates The Technical Implementation Of Data Integration Jobs

- Creates graphical data integration jobs using hundreds of pre-built transformation and data quality functions
  - ▶ Batch & real-time operations

- Stores and retrieves metadata from Information Server
  - ▶ Allows easy reuse of integration work between projects

- Advanced parallel processing capabilities
  - ▶ Dynamic partitioning and pipelining
  - ▶ Scale jobs across additional hardware without modification

- Easily deploy data integration jobs as services for SOA
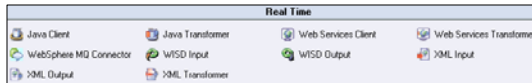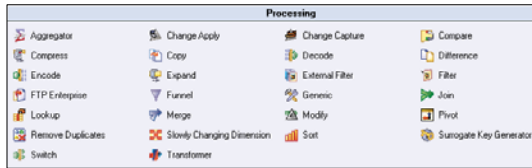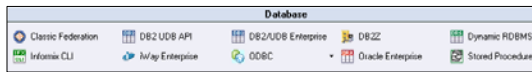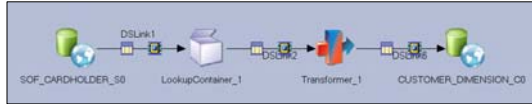
IBM InfoSphere Information Server Connects To Almost All Sources Of Data

RDBMS
DB2 (on z, I, P or X series)
Oracle
Informix (IDS and XPS)
Ingres
MySQL
Netezza
Progress
RDB
RedBrick
SQL/DS
SQL Server
Sybase (ASE and IQ)
Teradata
Universe
UniData
NonStopSQL
And more…..

Offering more connectivity than Oracle and Microsoft

General Access
Sequential File
Complex Flat File
File / Data Sets
Named Pipe
FTP
Compressed / Encoded Data
External Command Call
Parallel/wrapped 3rd party apps
EMC InfoMover
Web logs
Unstructured: e-mail, docs, etc.
Content Management Systems
Life Sciences

Enterprise Applications
JDE/PeopleSoft EnterpriseOne
Oracle Applications
PeopleSoft Enterprise
SAS
SAP R/3 and BI
SAP XI
Siebel
JDA
Ariba
Manugistics
I2
And more…

Standards and Real Time
WebSphere MQ
Java Messaging Services (JMS)
Java
XML and XSL-T
EBXML
Web Services (SOAP)
Enterprise Java Beans (EJB)
EDI
FIX
SWIFT
HIPAA

CDC / Replication
DB2 (on z, I, P, X series)
Oracle
SQL Server
Sybase
Informix
IMS
VSAM
ADABAS
IDMS
NonStopSQL
Enscribe

Legacy
Allbase/SQL
C-ISAM
D-ISAM
Datacom/DB
DS Mumps
Enscribe
Essbase
FOCUS
IDMS/SQL
ImageSQL
Infoman
KSAM
M204
MS Analysis
Nomad
Nucleus
RMS S2000
Supra
TOTAL
TurboImage
Unify
And many more….

DEMO: Use InfoSphere DataStage To Load The Data Warehouse

1. **Show the DataStage ETL job generated by FastTrack**
2. **Run the DataStage Job to populate the data warehouse fact table**
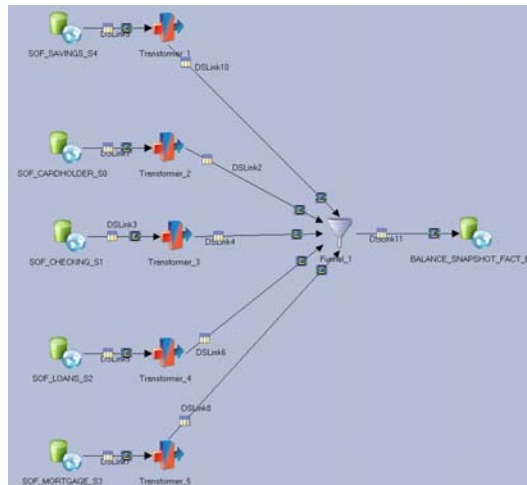
IBM Leads In Data Integration

- Only InfoSphere Information Server delivers unified metadata across all tools for collaboration and reuse
  - ▶ Oracle has no integration of metadata across products
  - ▶ Manual import/export required

- Model-driven design with FastTrack and DataStage speeds development
  - ▶ Neither MS or Oracle offer tools that provide these functions

- InfoSphere Information Server works in heterogeneous environments
  - ▶ InfoSphere gathers, processes, and cleanses more data from more sources than Oracle and Microsoft

"FastTrack enables our analysts to capture more complete business requirements. The ability to translate this information directly into DataStage jobs with up to 70 percent of the code completed will significantly shorten our development lifecycle."

- Roderich Hofmann, project manager, WAVE, IT-Solutions provider of Bank Austria and member of UniCredit Group

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Using New Intelligence Creates New Business Opportunities

If we can identify our risky mortgage assets, we can work to remove them from our books.

We can identify risky mortgage customers by watching their activities in other business areas
- ▶ Bounced checks
- ▶ Missed credit card payments
- ▶ Missed loan payments.

Service Oriented Finance CEO

Mortgage Line of Business VP

Create New Intelligence With IBM Cognos On Power Systems

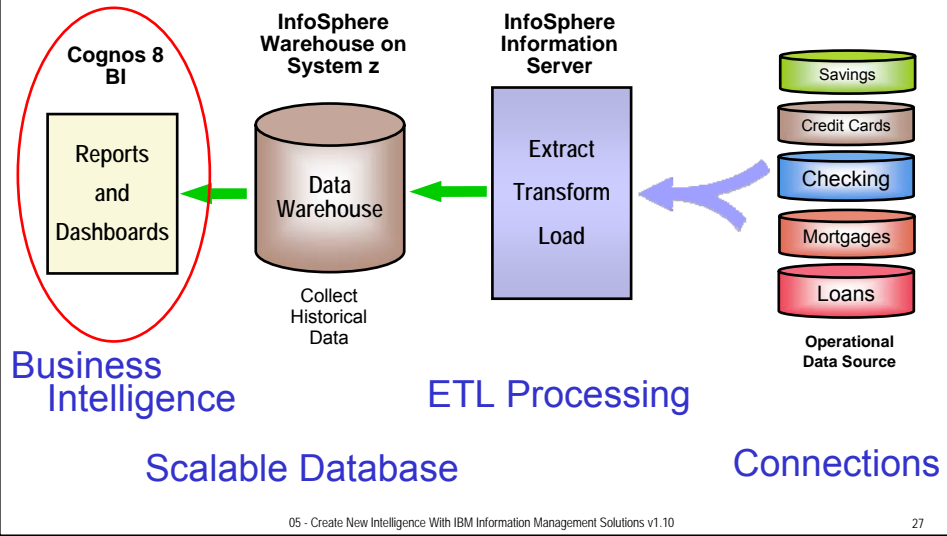Now that you have a data warehouse, you can create this new intelligence using IBM Cognos 8 BI.

IBM

Use IBM Cognos 8 BI To Optimize Business Decisions

Cognos 8 BI

Reports and Dashboards

InfoSphere Warehouse on System z

Data Warehouse

Collect Historical Data

InfoSphere Information Server

Extract
Transform
Load

Savings

Credit Cards

Checking

Mortgages

Loans

Operational Data Source

Business Intelligence

ETL Processing

Scalable Database

Connections

DEMO: Identify Risky Mortgage Accounts Using Cognos 8 BI

1. Show report generated in Cognos Report Studio in PDF format
2. Report identifies high-risk mortgages by looking at negative credit events in customers other SOF accounts (CC, Checking, etc…)
3. Report uses both structured and unstructured data (link to mortgage data stored in FileNet)
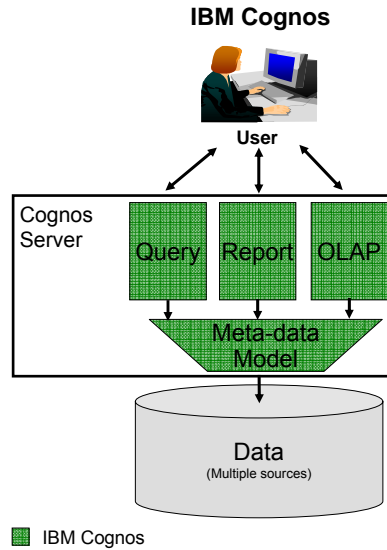
That report is just what we need!
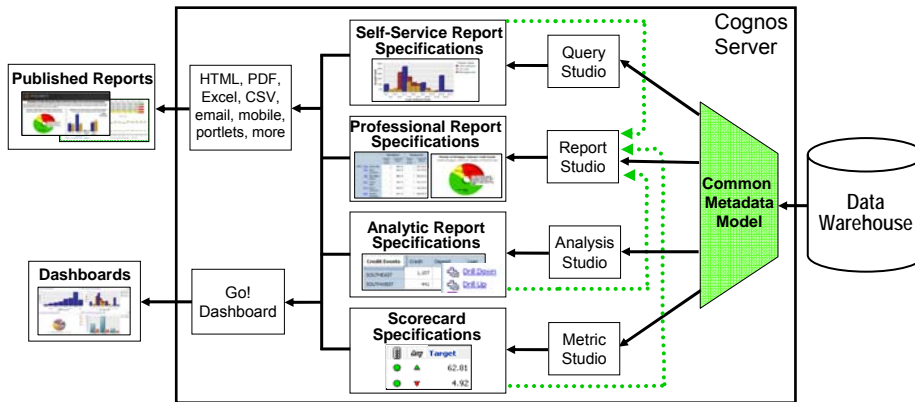
Mortgage Line of Business VP

- At risk customers are identified and contacted to refinance
- Risky mortgages can be sold

IBM Cognos Is An Integrated Platform Built On SOA

- Implemented in Java, runs on WebSphere
- 100% browser based access
  - ▶ Server side business intelligence
  - ▶ Users can access new intelligence from anywhere
- Easiest for IT to deploy and manage
  - ▶ Scales up and out across heterogeneous hardware and operating systems
  - ▶ Unified security
  - ▶ Unified administration
- Consistent user interface across tooling
  - ▶ Greater user satisfaction and increased business agility with lower IT costs
- Common meta data model
  - ▶ Author new intelligence assets once, consume anywhere
  - ▶ Common view enables open data strategy
  - ▶ Supports Unicode and multilingual features without recreating reports

IBM Cognos

User

Cognos Server

Query Report OLAP

Meta-data Model

Data
(Multiple sources)

▦ IBM Cognos

Reuse Trusted New Intelligence Assets Across the Cognos 8 Platform

Cognos Server

Published Reports

HTML, PDF, Excel, CSV, email, mobile, portlets, more

Self-Service Report Specifications

Professional Report Specifications

Analytic Report Specifications

Dashboards

Go! Dashboard

Scorecard Specifications

Query Studio

Report Studio

Analysis Studio

Metric Studio

Common Metadata Model

Data Warehouse

- **All new intelligence assets share a common metadata model and common report specification**
- **Author Once – Consume Anywhere**
- **Ensures consistent information and enables reuse across platform functions**

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Include Any Data Source In Your New Intelligence With the Cognos 8 Platform
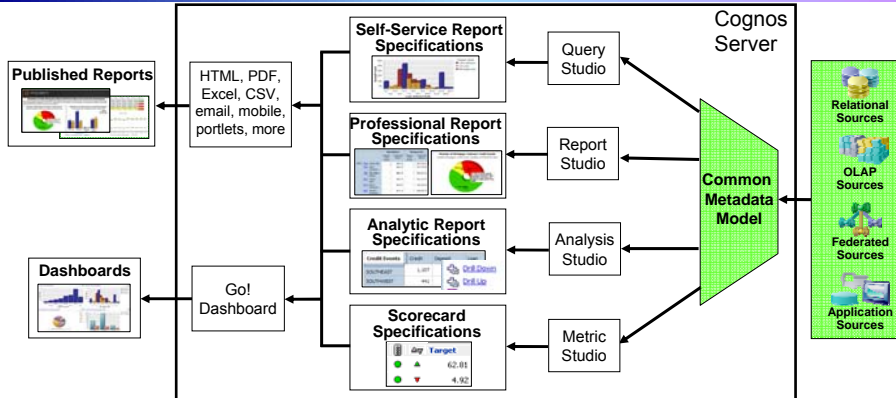
- **Open data strategy enables a common view across a variety of data sources**
- **Support for application data sources such as SAP ERP**
- **Combine relational, OLAP, federated, and other data sources in any tool**

- **All capabilities access a trusted set of information defined in the common metadata model**
- **As sources change, metadata model can control and identify impacts to report specifications**

Cognos Go! Dashboard Enables You To Monitor Business Operations

- Cognos report specifications can be incorporated into dashboards using Cognos 8 Go! Dashboards

- What goes into a dashboard?
  - ▶ Self service reports
  - ▶ Professional reports
  - ▶ Analytical reports
  - ▶ Scorecards
  - ▶ RSS feeds, HTML, search, more

- Users can create their own dashboards from existing Cognos report assets

- Everything you need to monitor multiple areas of the business at the same time

- Provides dynamic and visually appealing capabilities by using Adobe Flash
  - ▶ Everything runs in a browser – only Adobe Flash is required
 - ▶ Easily change chart types and color palettes
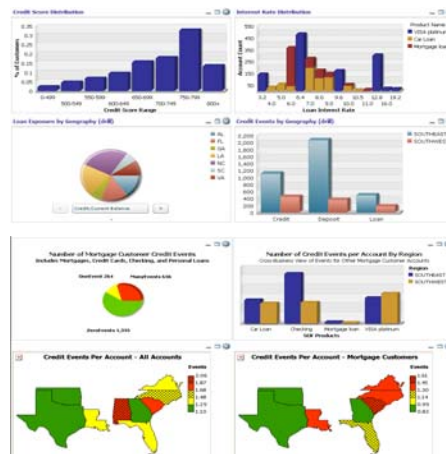
Users Can Create The Reports They Need Using Cognos 8 BI

- Query Studio is an easy to learn self-service reporting tool requiring minimal reporting knowledge
  - ▶ Helps alleviate report authoring backlog
  - ▶ Use existing self-service reports to create a new report
  - ▶ Modify the style and layout of self-service reports

- Report Studio is a professional reporting tool to create any style of report
  - ▶ Invoices, financial statements, inventory, payroll, etc
  - ▶ Provides "pixel-perfect" formatting with absolute control over visual layout
  - ▶ Library of lists, crosstabs, charts, maps, operators, constants, functions, filters, more
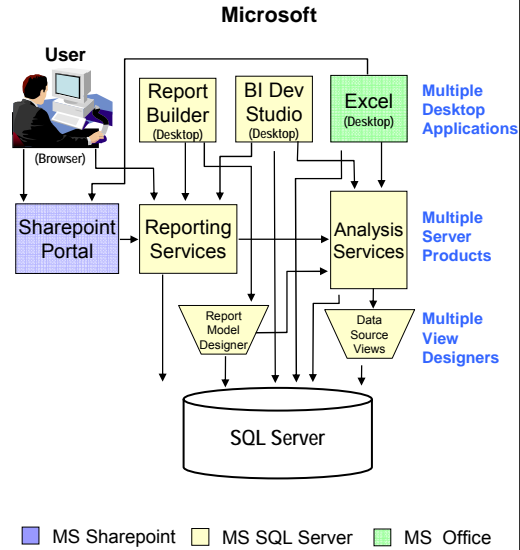
Demo: Gain Business Insight Through IBM Cognos 8 BI and Go Dashboard

- Use Go! Dashboard to quickly monitor the business operations
- Use Cognos Query Studio to customize an existing report
- Open the original "risky mortgage" report in Cognos Report Studio
- Show how elements of report specifications created in different Cognos functions can be included in a single dashboard
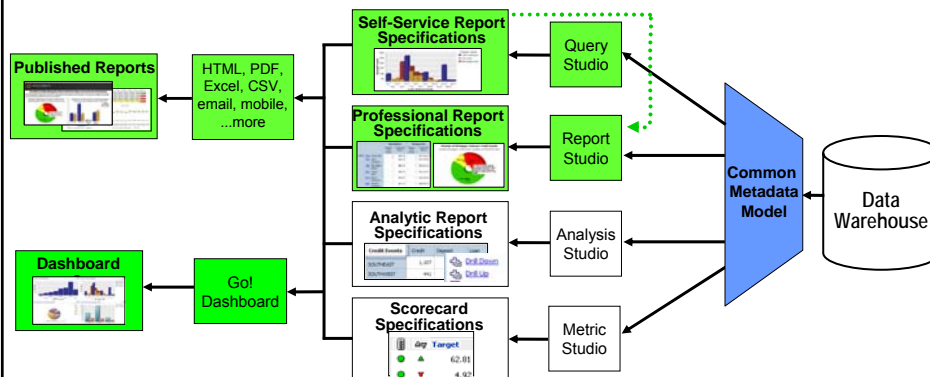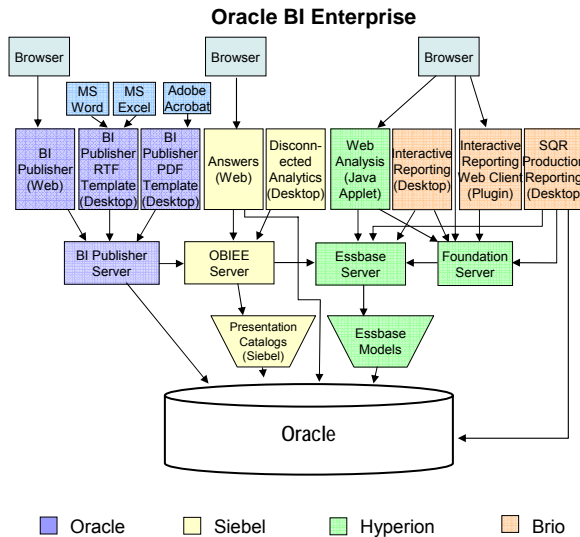
Microsoft Has Separate Unintegrated Products And Desktop Applications

- Multiple desktop tools
  - ▶ Multiple report formats
    - − Report Builder (Ad-Hoc)
    - − BI Development Studio (BIDS) Report Designer
    - − Excel
  - ▶ Fragmented metadata approach
    - − Direct query, Report Builder Models, BIDS datasets, MSAS cubes (data source views), …
    - − RDF format incompatibilities
    - − Multiple desktop tools
  - ▶ Programming required
  - ▶ MS Office required
- Creates IT Burden
  - ▶ Install, Patch, User Support all happen at the desktop
  - ▶ Not SOA – Only works with Microsoft product stacks
  - ▶ Multiple security models

Microsoft

User
(Browser)

Report Builder (Desktop)
BI Dev Studio (Desktop)
Excel (Desktop)
Multiple Desktop Applications

Sharepoint Portal
Reporting Services
Analysis Services
Multiple Server Products

Report Model Designer
Data Source Views
Multiple View Designers

SQL Server

- MS Sharepoint
- MS SQL Server
- MS Office

Oracle Business Intelligence Enterprise Edition Is Complex And Is Not Integrated

- Multiple Thick Client Tools
  - ▶ Multiple report formats
  - ▶ Multiple metadata models
  - ▶ Creates More work

- Too Many Products!

- Creates IT Burden
  - ▶ Install, Patch, User Support all happen at the desktop

Oracle BI Enterprise

Browser   Browser   Browser

MS Word   MS Excel   Adobe Acrobat

BI Publisher (Web)
BI Publisher RTF Template (Desktop)
BI Publisher PDF Template (Desktop)
Answers (Web)
Disconn-ected Analytics (Desktop)
Web Analysis (Java Applet)
Interactive Reporting (Desktop)
Interactive Reporting Web Client (Plugin)
SQR Production Reporting (Desktop)

BI Publisher Server
OBIEE Server
Essbase Server
Foundation Server

Presentation Catalogs (Siebel)
Essbase Models

Oracle

- Oracle
- Siebel
- Hyperion
- Brio

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Deliver New Intelligence Quickly With The IBM Smart Analytics System

How can we get started quickly?

The IBM Smart Analytics System provides a complete ready-to-deploy system for delivering New Intelligence.

Service Oriented Finance CIO

IBM

The IBM Smart Analytics System Is Built On Power Systems

A complete, ready-to-deploy system including hardware, software, storage, and network

- System is installed, tuned, and ready for your data
- Choose from standard configurations, add capacity with hardware and software modules
- Single point of contact for support

Analytics
- ☑ Cognos 8 Business Intelligence
- ☑ Cubing Services
- ☑ Text Analytics & Data Mining

Data Warehouse Software
- ☑ InfoSphere Warehouse
- ☑ Advanced Workload Management
- ☑ Tivoli System Automation

Hardware/OS
- ☑ **AIX 6.1**
- ☑ **IBM Power 550**
- ☑ **IBM System Storage DS5300**

Faster Time To Value
- Deploy in days instead of months
- Focus on creating business value, not installing hardware and software

Costs less than building it yourself
- Less staff and expertise required to implement, tune, and maintain

Find out more: http://www-01.ibm.com/software/data/infosphere/smart-analytics-system/

Power Systems Delivers New Intelligence From Your Business Data

New Intelligence	IBM Software Power Systems	ORACLE hp	Microsoft (intel)
Database Performance	2684 QphH/Core*	751 QphH/Core*	1252 QphH/Core*
Database Compression	Most 62%	LEAST 29%	LESS 40%
Number of Data Connectors	Most	Fewer	Fewest
100% Browser Based Analysis	Yes	No (Multiple Desktop Clients)	No (Multiple Desktop Clients)
ETL Performance	Fastest (1h 40m*)	SLOWER (18h 13m*)	SLOWEST (54h 59m*)
Reusable Report Specifications	Yes	Import/Export	Import/Export
Single Platform Deployment	Yes	No	No
Integrated New Intelligence Solution	Yes	No	No

*10TB TPC-H Benchmark http://www.tpc.org/tpch/results/tpch_perf_results.asp

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