IBM Retail Business Intelligence Solutions

Retail RBIS/Cognos Solutions Overview
Agenda

- Information Management Approach
- Overview of RBIS and Cognos
- Case Study
- Value Proposition
Becoming customer focused requires bringing together a “customer view” with a traditional “product” view

Traditional inside-out view is constrained by organizational silos and only product focused

Separate marketing plans by channel

No access to inventory availability; staffing based solely on cost

Inventory management doesn’t span channels

Mass market approach to promotions

Assortment planning doesn’t reflect customer needs

What the Customer Sees

“I see different promotions online and in the store for the same item”

“I can’t find clothing items that fit my particular lifestyle or needs”

“I wasn’t able to reserve an item from the website and then go pick it up in the store”

“I can never find anyone to help me and if I do they can’t tell me whether a product is in stock or not”

“The emails I receive from this store are usually a waste of time”

Adding the ‘Customer View’ creates a cross organizational common view of the customer and business

Marketing plans coordinated across channels

Inventory management across channels

Promotions and offers tailored to each customer segment

Inventory availability provided to associates; staffing balances cost with customer needs

Add & Integrate the Customer View

“What the Customer Sees”

“I can reserve items or purchase items online and pick up them up in the store”

“I can always find clothing that suits my tastes and needs”

“I can always find someone to answer my questions and tell me whether the product is in stock or not”

“The emails I receive from this store are always relevant to what I have purchased or might need”

Creating Advocates

Stop Talking Innovation.

Start Doing It.
Customer focus and detailed views of information highlight common fundamental information issues

- **Multiple versions of the truth**
  - Problems managing customer, item, vendor, and location data and interactions
  - Regulatory compliance inhibited by poor transparency

- **Lack of trusted information**
  - Incomplete, out-of-date, inaccurate, misinterpreted data
  - Difficult to understand or control how information is used

- **Too much information and not knowing what’s important**
  - Not using demand signals to drive supply chain
  - Not using customer analysis to tailor marketing and sales
  - Not leveraging valuable unstructured information

- **Lack of agility**
  - Inability to take advantage of opportunities for innovation
  - Escalating costs due to inflexible systems and changing needs
The IBM Retail Business Intelligence Approach

Diverse Information           Real-time Analysis

Expanding User Communities

Current Operational Sources

Data Consolidation & Validation

Interactive Analysis

Inventory Analysis ... Pricing Analysis ... Marketing Analysis ... Financial Analysis ...
Why do I need a data warehouse?

Retail Data Warehouse

- Enterprise Wide
- Consistent Reporting
- Reuse of extracts from Operational Sources
- Cost Effective Reporting
- Support all types of Sources & Reporting Apps
- Proven Scalability

Operational Sources

- Sales
- Purchasing
- Inventory
- Order Management
- Credit Card
- General Ledger
- HR
- Payroll
- Cash Management
- Investments
- Other Apps

Customer Management

- Corporate Finance
- Hr Payroll
- Cash Management
- Investments
- Other Applications

Product & Services Management

- Merchandising Management
- Store Operations

Customer Management

- Customer Management
- Store Operations
- Product & Services Management
Retail Business Intelligence Solution includes hardware, software and services packaged to deliver targeted retail functionality and insight.

**GBS Retail And Business Intelligence Services**

- **Retail Business Solution Templates (RBST)**
  Pre-defined Accelerators/Cubes and Reports

- **RDW Relational Model (RDWM)**
  Data Warehouse Structures and Summaries – Logical Reference Architecture

- **Retail Services Data Model (RSDM)**
  Industry Definitions, Concepts and Classifications – Metadata

**Balanced Configuration Unit (BCU)**
Retail Optimized Business Intelligence Infrastructure (integrated and performance optimized - server, storage and software)

- **DB2 Data Warehouse Edition**
- **Intelligent Miner**
- **IBM Information Server**
- **p/xSeries Server Total Storage**
  - **BCU 1**
  - **BCU 2**
  - **BCU N**
Retail Major Analytic Process Areas

Merchandising
“Maximize Merchandise”

Supply Chain
“Focus the Supply Chain”

Stores/Channels
“Revolutionize the Experience”

Customer Mgmt. and Marketing
“Motivate Shoppers”

Retail Business Intelligence

- Assortment
- Allocation
- Inventory
- Physical Merch
- Space Mgmt
- Pricing
- Promotion

- Business Performance
- Planning
- Forecasting
- Product profitability

- Store Location
- Store Optimization
- Suspicious Activity
- Activity Based Costing
- Location Exposure
- Location profitability
- Loss Prevention

- Campaign & Promotion
- Cross Purchase Behavior
- Cross Sell
- Cust Attrition
- Cust Complaints
- Cust Credit Risk Profile
- Cust Delinquency
- Cust Interaction
Embedded mining used to get deeper insights

Market Basket Analysis
- Avoid OOS for associated items during promotions
- Shelf/Web/Flyer… layout
- Increase high margin item pull

Next Logical Purchase
- Promotion Targeting
- “Easy” way to predict purchases

Store Segmentation
- Individual view of store for category managers.
- Automatic planogram creation
- New store assortment

Customer Segmentation
- Target marketing
- Define offerings to attract desirable segments
- Tiered loyalty
- Programs to migrate customers to more profitable segments
BST’s and Report Templates

Purchase Profiles BST
• Product Group Average Sales Quantity per Transaction
• Product Penetration (to Geography, geo-demographic mix)

Customer Profiles BST
• Customers Attribute report
• Percentage Sales by Customer Segment report
• Product Purchasing Recency, Frequency & Quantity
• 6 Month Customer Age Group Segment RFQ

Business Performance Analysis BST
• Vendor Performance – sales reports by vendor
• Vendor Compliance - billing, delivery

Product Analysis BST
• Product Performance by Store, Geography report
• Product Category Performance report & Drill Down

Physical Merchandising/Space Management
• Demographic Response to different Layouts
• Category Profitability to Physical Presence
• Optimization of Linear Footage to total store
• Section elasticity / adjacency

Campaign & Promotion Analysis BST
• Sales Performance by Campaign Response

Target Product Analysis BST
• Average Transaction Quantity & Value
• Customer Acquisition & Defection report
• Segment Migration Comparison report

Market Basket Analysis (Clienteling)
• Cross Merchandising (what’s in a basket)
• Demographic profile to market basket

Inventory Analysis BST
• On Order V On Hand
• Days of supply
• Out of Stock .. by Product
• Slow moving inventory report
• Assortment / Allocation Analysis BST
• Product Affinity
• Product to Customer Profiles

Pricing Analysis BST
• Markdown Trend report
• Price Elasticity report
How do I get Started?

• Reporting is Typical First Agenda Leading Business Intelligence Initiatives
• Reporting-led business intelligence initiatives provide a proven, pragmatic approach to implement Performance Management
• Initial focus is on meeting the organizations’ reporting needs
• Most organizations are still in stage 1 or 2 in their journey but recognize the need to move to 3 and 4
Introducing IBM Cognos Business Intelligence

• Complete range of BI capabilities in a single product, on a single proven Web services architecture
• Zero-footprint, Web interface for all users
• Standardizes the delivery of information to accelerate and improve decision-making
• Foundation for performance management

Business Intelligence Capabilities

Why?
  - Reporting
  - Analysis

How are we doing?
  - Dashboards
  - Scorecarding

Web  Office  Mobile  Search
Breadth and Depth of Reporting
Managed Reporting

“…the ability to create standard reports every quarter for our account managers, branches and regions….”

Bank of Austria Creditanstalt
Managed Reporting

“We cannot keep up with the user requests”

- Requirements
  - “One to many reporting…”
  - Flexible prompting and bursting

- Users
  - Professional author design
  - Distribution across the enterprise

- Primary Data Sources
  - Data Warehouse
  - Operational Stores

Example: Sales Report By Region

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<tr>
<th>Division</th>
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Business/Ad Hoc Reporting

“End users no longer have to wait for IT to build a report. Instead they can author their own reports at any time.”

Mold Masters
Business / Ad Hoc reporting

"We get a lot of last minute requests and scramble to deliver answers"

- **Requirement**
  - Interactivity & flexibility
  - Self service design
  - Financial information

- **Users**
  - Information worker
  - LOB manager

- **Primary Data Sources:**
  - Data Warehouse
  - Relational
  - OLAP

Example: Inventory Level Product “X”
“…we register more than 46,000 transactions every day and the sheer quantity of data makes it essential for us to know exactly where follow-ups are needed ….”

DHL Worldwide
Production Reporting

“We need to provide high quality detailed reports both internally & externally”

- Requirement
  - Large volumes
  - High fidelity formatting
- Users
  - Designed by IT developer
  - Consumed by customers, suppliers
- Data Sources:
  - Transactional sources
  - e.g. Operational data stores

Example: Invoice for Purchases
“… “Managers can slice and dice this information to reveal key trends such as changes in average wage per store year-over-year and productivity per sales associate hour”

American Eagle Outfitters
Analytical Reporting

“We have users who need to see the trends at a macro level”

- Requirement
  - Slice and Dice
  - Predictable performance

- Users
  - LOB managers
  - LOB analysts

- Data Sources
  - Data warehouse,
  - Relational
  - OLAP sources

Example: Revenue by geography by date by sales person
Operational & Transactional Reporting

“... “Our customers want immediate access to their records & profiles to help make financial decisions...”

Blue Cross Blue Shield Tennessee
Operational & Transactional Reporting

“We have many requests for up to the minute data”

- **Sweet Spots**
  - Integration & Access to core systems
  - Leverage enterprise architecture
- **Users**
  - Designed by professional authors
  - Distribution across the enterprise
- **Primary Data Sources**
  - Transactional
  - Financial Systems (P/L reports)

**Example: List of Product Transactions**
All BI Capabilities in One Product

- Full range of BI capabilities needed to improve decision-making and manage performance

**Cognos 8 BI**

- Query
- Reporting
- Dashboarding
- Analysis

- Scorecards
- Event Management
- Planning

Eliminates need for multiple BI tools, lowering costs and easing standardization
Query

- Browser based self-service reporting for end users who like to create their own reports or collaborate with others
Reporting and Dashboarding

- Fastest time to create and deliver any report and full report coverage including business, production, dashboard and personalized reports
Analysis

- Guided multidimensional exploration as well as comparative capabilities for faster more manageable analysis.
Scorecarding

- Align individuals on the key business metrics and drive users to understand what is happening, who is accountable and who is taking action
Event Management

• Alerting and Process Integration for automatic management and fastest time to action
Planning Integration with Cognos 8

- All BI capabilities against all planning data
  - Live plan, published plan, workflow
- Standardized delivery of planning information
- Planning data united with all other enterprise data sources

Cognos 8 BI provides the foundation for performance management
Microsoft Go! Office

- Extend the reach to business users who live in Microsoft Office through a live and smart client application
Cognos Go! Mobile

• Provides users with the ability to make decisions in context, anytime, anywhere
One Product, One Architecture

USER
Zero Footprint
Task-Based Interfaces

WEB, OFFICE, MOBILE, SEARCH...

REPORTING  QUERY  ANALYSIS  DASHBOARDS  SCORECARDS

SERVICES
Purpose-Built Web Services Architecture

INFORMATION  MANAGEMENT  FRAMEWORK

DATA
Open Data Access

Transaction Systems  Warehouses (Relational & OLAP)  Flat, Legacy or Modern
Retail Performance Blueprints

- **Store P&L Operations**
  - Revenue, Labor, Controllable Expenses, Initiatives

- **Store Development**
  - New stores, upgrades, remodels

- **Promotion Planning**
  - Marketing spend, campaigns, vendor trade fund compliance

- **Strategic Merchandise Planning**
  - Annual target setting by division, channel
  - Calendaring, spreading of targets
  - Merchandise financial planning
  - Stock valuation
### Performance Management Success in Retail

#### General Retail
- Amazon.com
- Linens-N-Things
- Saks Fifth Avenue
- Staples
- Best Buy
- Target
- Timberland
- WHSmith
- Burlington
- Stockmann
- Nordstrom
- GameStop
- Sears
- Patagonia
- TJ-Maxx
- Office Depot
- Coles Myer Ltd.
- Otto
- IKEA
- LVMH
- H&M
- Gap
- AE
- L'Occitane En Provence

#### Food & Drug
- Alliance Boots
- B&G's
- 7-Eleven
- Morrisons
- CVS/Pharmacy
- Caprabo
- 30
- K
- Stop & Shop
- Kum & Go
- Petro-Canada
- Sobeys
- Rite Aid
- Arla Foods
- Bob Evans
- Coles Myer Ltd.
- Lidl
- Pret A Manger

#### Restaurant Chains
- Quiznos
- Cracker Barrel
- Buc-ee's
- California Pizza Kitchen
- Laurel Pub Company
- Chipotle
- Red Robin
- Pizza Hut
- The Cheesecake Factory
- Noodles & Company
- Quick
- The Beer Company
- Old English Inns
- Whitbread

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STOP TALKING INNOVATION.

START DOING IT.
Sample Case Study:
Retail Business Intelligence Solution at Target

**Challenge**
- Create support for and implement an enterprise data warehouse solution including:
  - CRM Analytics
  - Financials Analytics
  - Credit Analytics
  - Others (e.g. Merchandising) on the horizon

**Solution**
- IBM’s Retail Business Intelligence Solution
  - Retail Data Warehouse Model (RDW), Retail Business Solutions Templates (RBSTs), Retail Services Data Model (RSDM)
  - Consulting Services
  - DB2 Data Warehouse Edition

**Benefits**
- Integrated view across the company
- Visibility to complete profitability picture
Gartner - Magic Quadrant for Business intelligence services, 2007
### Item Affinity – What sells together

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<th>Associated Product</th>
<th>Metrics</th>
<th>Pair Frequency</th>
<th>Product Frequency</th>
<th>Support</th>
<th>Confidence</th>
<th>Lift</th>
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<td>0.87</td>
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</tr>
<tr>
<td>CONFECTIONERY</td>
<td>FRESH MEAT, SAUSAGES, FISH</td>
<td>4,459</td>
<td>22,012</td>
<td>24.27%</td>
<td>20.26%</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>CONFECTIONERY</td>
<td>FRESH MEAT, SAUSAGES, FISH</td>
<td>4,459</td>
<td>22,012</td>
<td>24.27%</td>
<td>20.26%</td>
<td>0.68</td>
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</tr>
<tr>
<td>BEVERAGES, ALCOHOL, FREE DRINKS</td>
<td>MILK, CHEESE, EGGS</td>
<td>2,771</td>
<td>15,259</td>
<td>15.69%</td>
<td>24.71%</td>
<td>0.65</td>
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<tr>
<td>BACKED GOODS</td>
<td>MILK, CHEESE, EGGS</td>
<td>3,882</td>
<td>10,152</td>
<td>11.20%</td>
<td>38.24%</td>
<td>1.01</td>
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### Days of Supply Drill Down

**Days Of Supply**

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<tr>
<th>Product Department:</th>
<th>Sub-Department:</th>
<th>Class:</th>
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<tr>
<td>ELECTRONICS</td>
<td>TAPES CASSETTES</td>
<td>CASSETTE AUDIO VIRGIN</td>
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**Measurement Period**: 2004

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<thead>
<tr>
<th>Store</th>
<th>CDR TDK</th>
<th>MD74</th>
<th>SONY DISC MINI</th>
<th>5X SHP 60 LPACK</th>
<th>80 32X SLIM TDX CDR</th>
<th>80 PHILIPS CAKEBOX 25 CDR</th>
<th>80 IMATION CDR</th>
<th>SONY 5C-60 PACK</th>
<th>3MC-60 SONY MIKE</th>
<th>MC 90B SONY MIKE</th>
<th>CDR 80MG/SL 6 MASTER</th>
<th>1C-90 ZX1 + 2C-60 SONY CASS</th>
<th>650 SONY/REW CDR</th>
<th>CDR 74 6X SAMS</th>
<th>PACK LC 10X SHP-P</th>
<th>C DRIEFCA</th>
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<tbody>
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<td>30</td>
<td>31</td>
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<td>31.143</td>
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<td>33</td>
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<tr>
<td>1 Delivery Week</td>
<td>27</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>30</td>
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<td>30</td>
<td>31</td>
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<td>33</td>
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</tbody>
</table>
Where clients see value

• Targeted analysis for Merchandising, Supply Chain, Multi-Channel and Store Applications

• Faster Time to Value
  – Retail Model, Pre-built BSTs and implementation methodology are proven accelerators
  – Mining capabilities are embedded in the DB and thus do not need 3rd party tools

• Lower TCO – Look at all costs and over a 3 – 5 year time horizon
  – Open standards & Industry Standards
  – Expanding ecosystem of Application tool providers

• Solution Performance
  – DB2 and System P at the core are proven, scalable products
  – Hardware and Software have been optimized for data warehousing

• Long Term Viability – Competitors have numerous distractions (spin-offs, IPO, etc.)
  – IBM has invested over $1.5B in Information Management in the last 18 months