

OPTIMIZING YOUR OPERATIONAL PROCESSES THROUGH INFORMATION AND ANALYTICS

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Information Management software

InfoSphereTM
software

Trusted Information

Agenda

- I. Business Optimization and the Information Agenda**
- II. The Art and Science of Analytics**
- III. The impact and Opportunity in the Area of Operations**

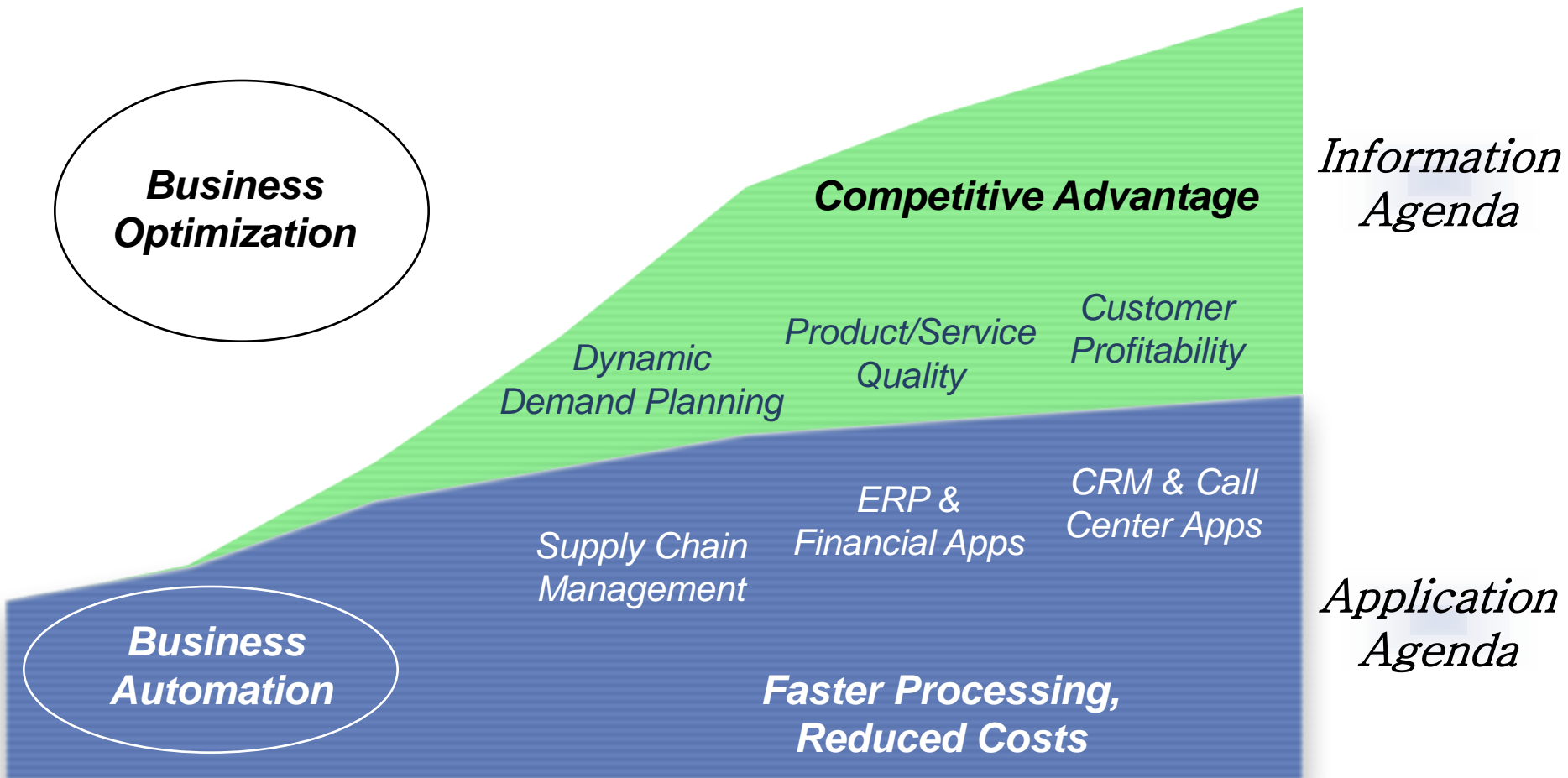
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Shift from Automation to Optimization



The Key: Trusted Information as a Strategic Asset

Current State
Information
Intensive
Projects

*Highly
justified
projects*

*...transform information into a
trusted strategic asset that can be
rapidly leveraged across
applications, processes and
decisions for **sustained** competitive
advantage...*

Information Based
Enterprise

*...an enterprise with an
Information agenda*

Desired State
Flexibility
& Speed

*Sustained
competitive
advantage*

InfoSphere Portfolio

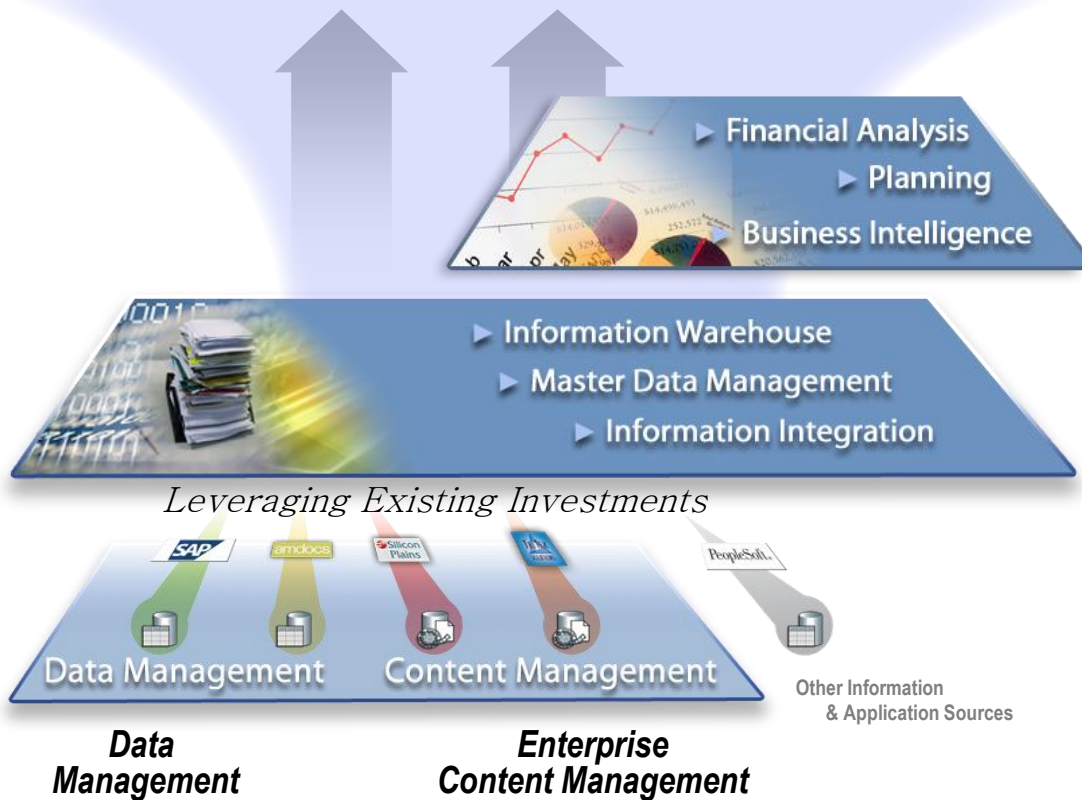
Financial Workforce Dynamic
Customer & Product Risk Insight Optimization Supply Chain Multi-Channel
Profitability Marketing

Business Optimization

Optimization

End-to-end Capabilities

Automation



Business Intelligence & Performance Management

Better understand & optimize business performance

Information Integration, Warehousing & Management

Single version of the truth, managed over time, flexible architecture

Establish & manage data and content over its lifecycle

People, Process and Technology

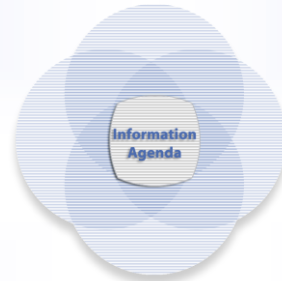


Foundational Tools

Software to help you convert your information into a trusted strategic asset

Information On Demand Competency Centers

Services to help you build information centers of excellence

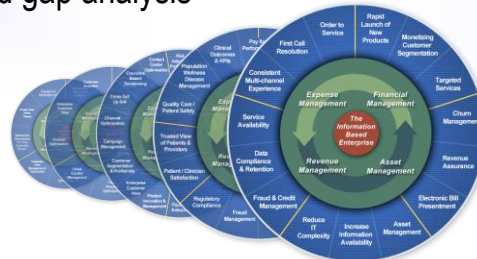


Information Agenda Guides & Workshops

Industry tailored sessions to guide future state design, identification of key information requirements and gap analysis

Information Accelerators

Industry specific assets to speed deployment



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Definitions

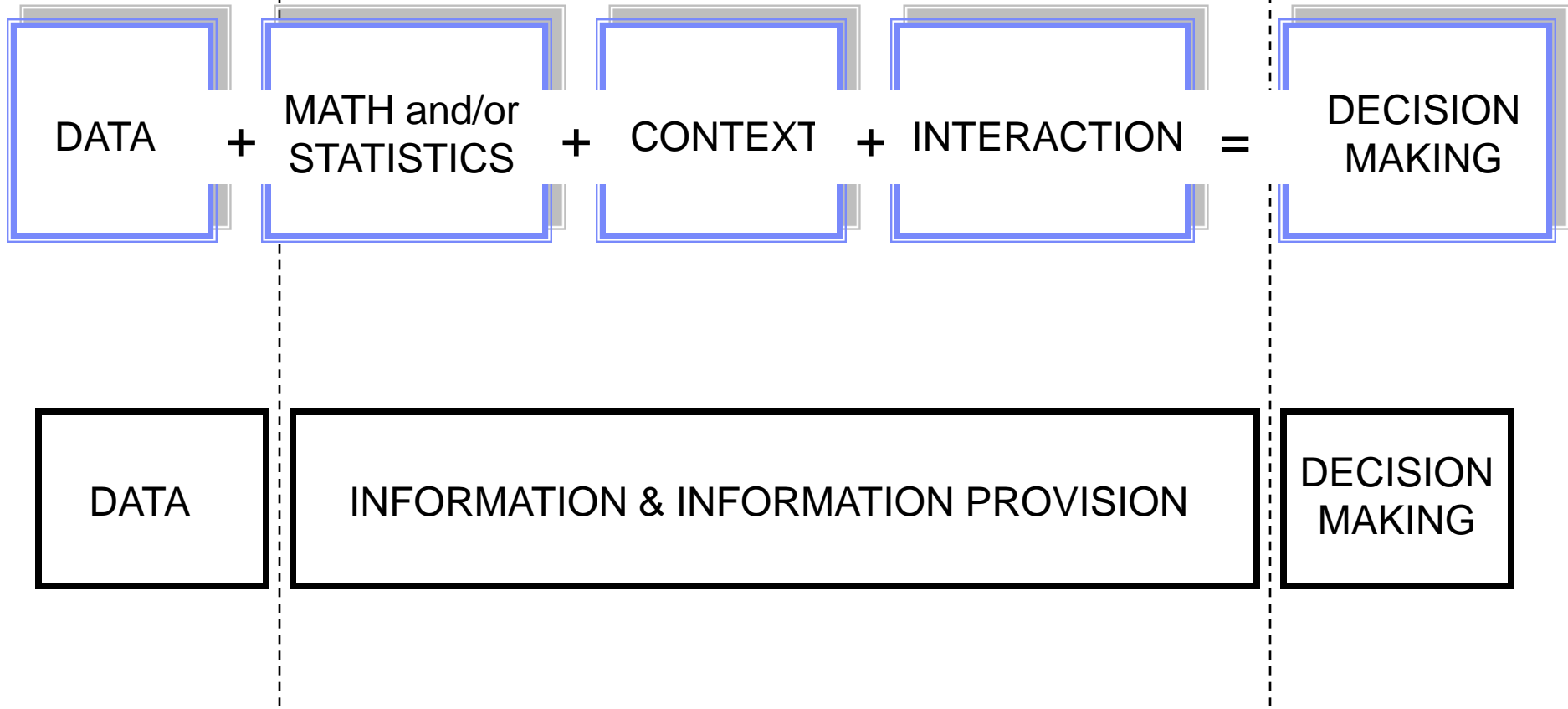
- **Analysis** is the process of breaking a complex topic or substance into smaller parts to gain a better understanding of it.
- **Analytics** is "the science of analysis." How a business arrives at an **optimal or realistic decision based on existing data**. Business managers may choose to make decisions **based on past experiences** or rules of thumb, or there might be other **qualitative aspects** to decision making; but unless there is **data involved** in the process, it would not be considered analytics.
- **Business analytics** is how organizations **gather and interpret data** in order to make **better business decisions and to optimize business processes**. Analytics are defined as the extensive use of **data, statistical and quantitative analysis, explanatory and predictive modeling, and fact-based decision-making**. Analytics may be used as input for human decisions; however, in business there are also examples of fully automated decisions that require minimal human intervention.

Definitions

- **"Analytics leverage data in a particular functional process (or application) to enable context-specific insight that is actionable"**
- ***Predictive Analytics* leverage data in a particular functional process (or application) to enable context-specific insight *into the future* that is actionable**

- Gartner

Requirements



Success Factors



DATA

- **Explosion of data**

- *281 Exebytes in 2007 (281 billion GB)*
- *988 Exebytes projected for 2010*

- **Types of data**

- *Growth*
- *Operational*
- *Compliance*
- *Nuisance*

- **Quality of data**

- *<5% missing is acceptable*
- *5-15% missing requires management*
- *+15% raises serious questions*

Success Factors

MATH and/or
STATISTICS

- **Descriptive and Prescriptive**
- **First Level Functions**
 - *Retrieve Value*
 - *Filter*
 - *Compute Derived Value*
 - *Find Extremes*
 - *Sort*
 - *Determine Range*
 - *Characterize Distribution*
 - *Find Anomalies*
 - *Cluster*
 - *Correlate*
- **Second Level Functions**
 - *Algorithms*
 - *Expert systems*
 - *Business specific*

Success Factors



CONTEXT

- **Industry Models**
- **Master Data**
- **Functions within an Organization**
 - *Executive*
 - *Operations*
 - *Human resources*
 - *Marketing*
 - *Finance*
 - *Regulatory*

Success Factors



INTERACTION

- **“Prove it”**

- *Query and Look-up*
- *Applications*

- **Develop a hypothesis**

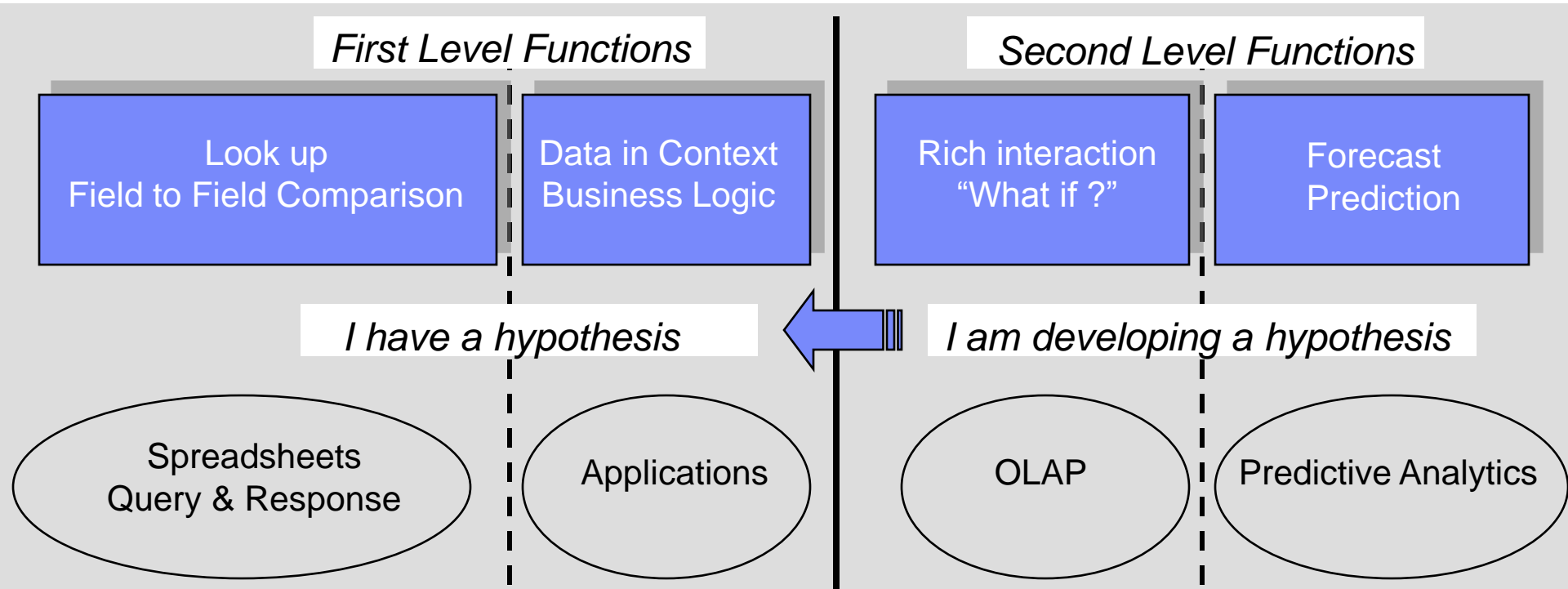
- *OLAP*
- *In-line*
- *Predictive*

- **Second level objectives**

- *Complex decision making under uncertainty*
- *Learning a domain*
- *Identification of a trend*
- *Forecast and predict*

Use Cases

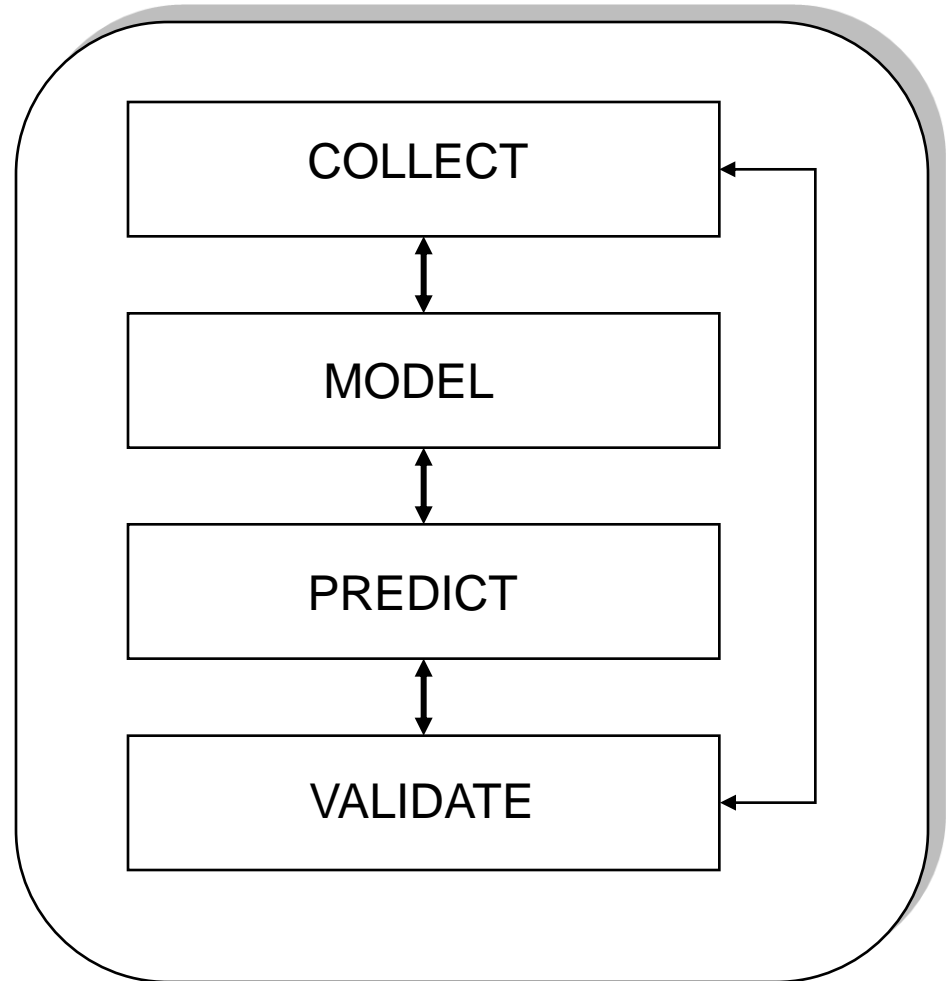
- ***Right tool for the right job***
- ***Importance of the business case***
- ***Parallels with real time***
- ***“Slide to the left”***



Limitations

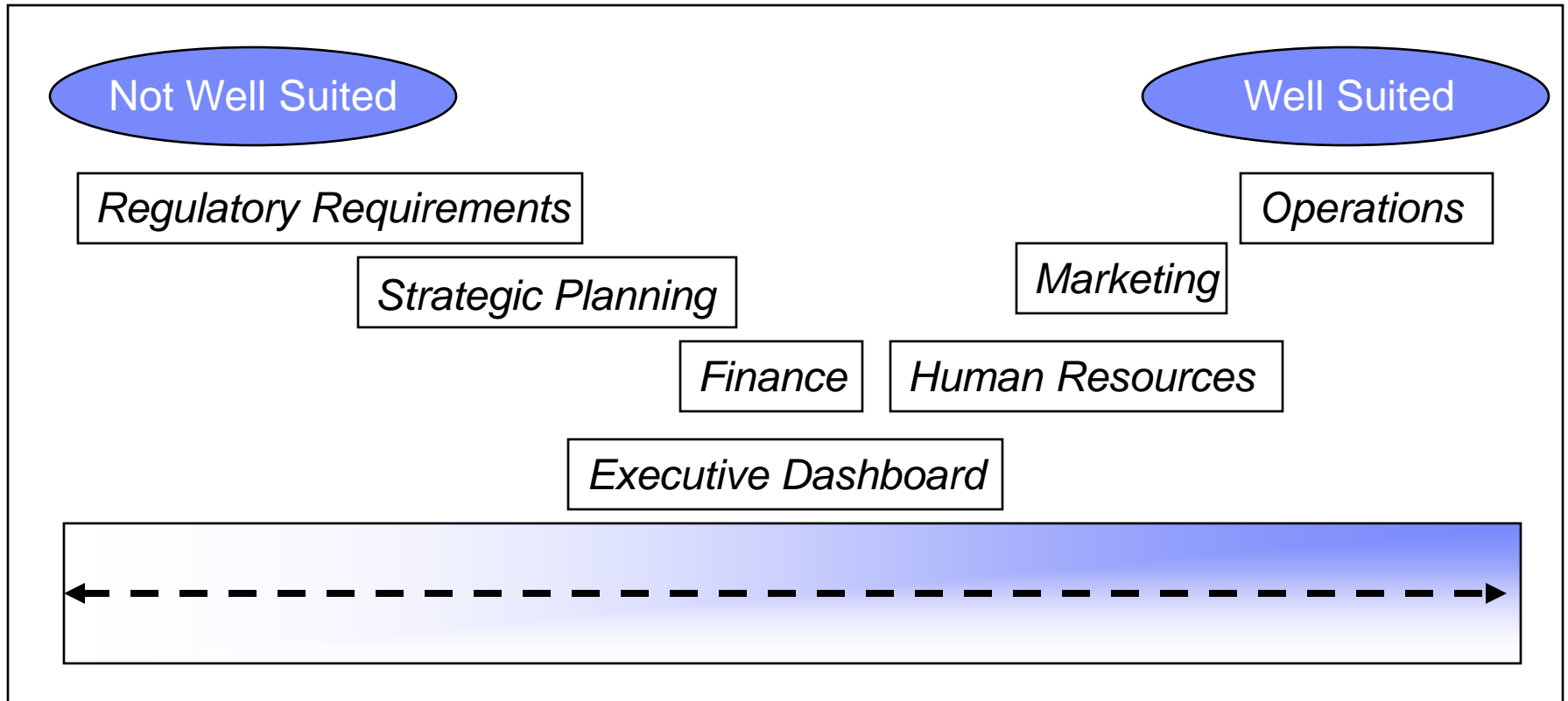
Right Side Factors

- *Ability to measure*
- *Lower risk*
- *Resident expert*
- *Closed loop*



Limitations

Best suited for right side activities

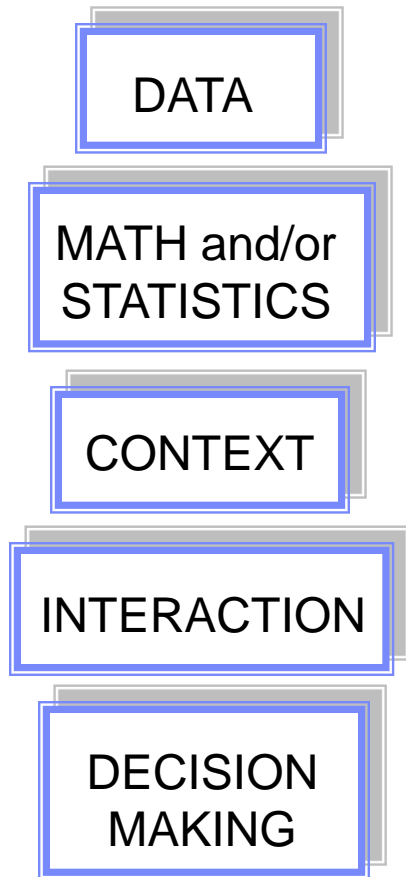


Agenda

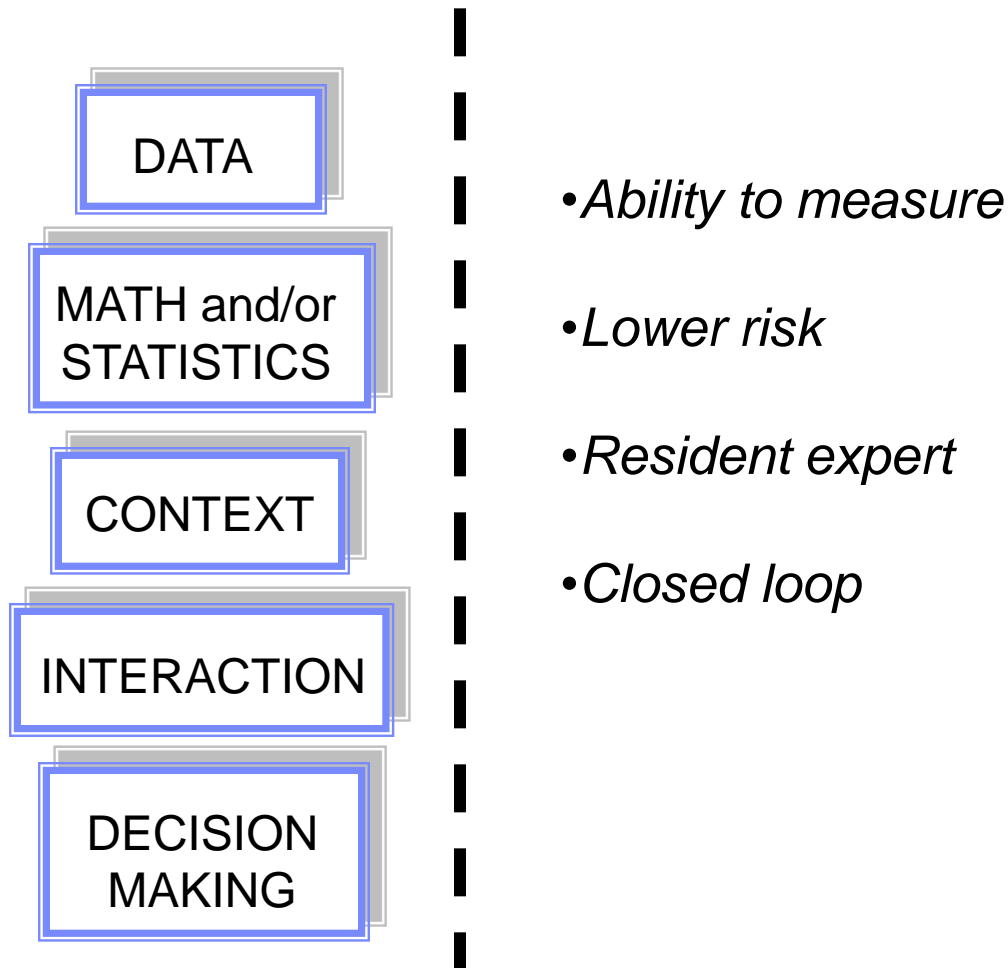
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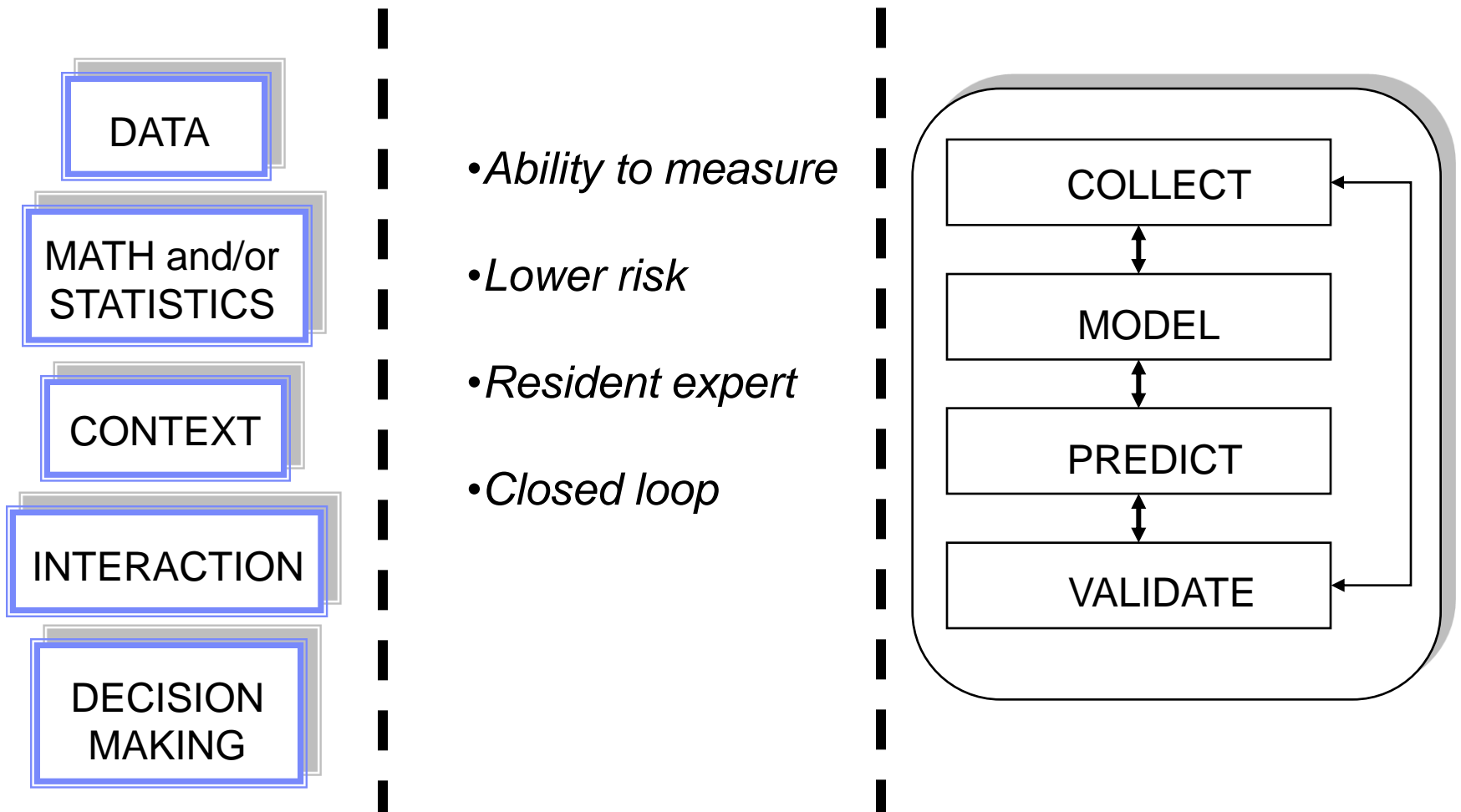
Operations as a prime candidate



Operations as a prime candidate



Operations as a prime candidate



The Nature of Operations

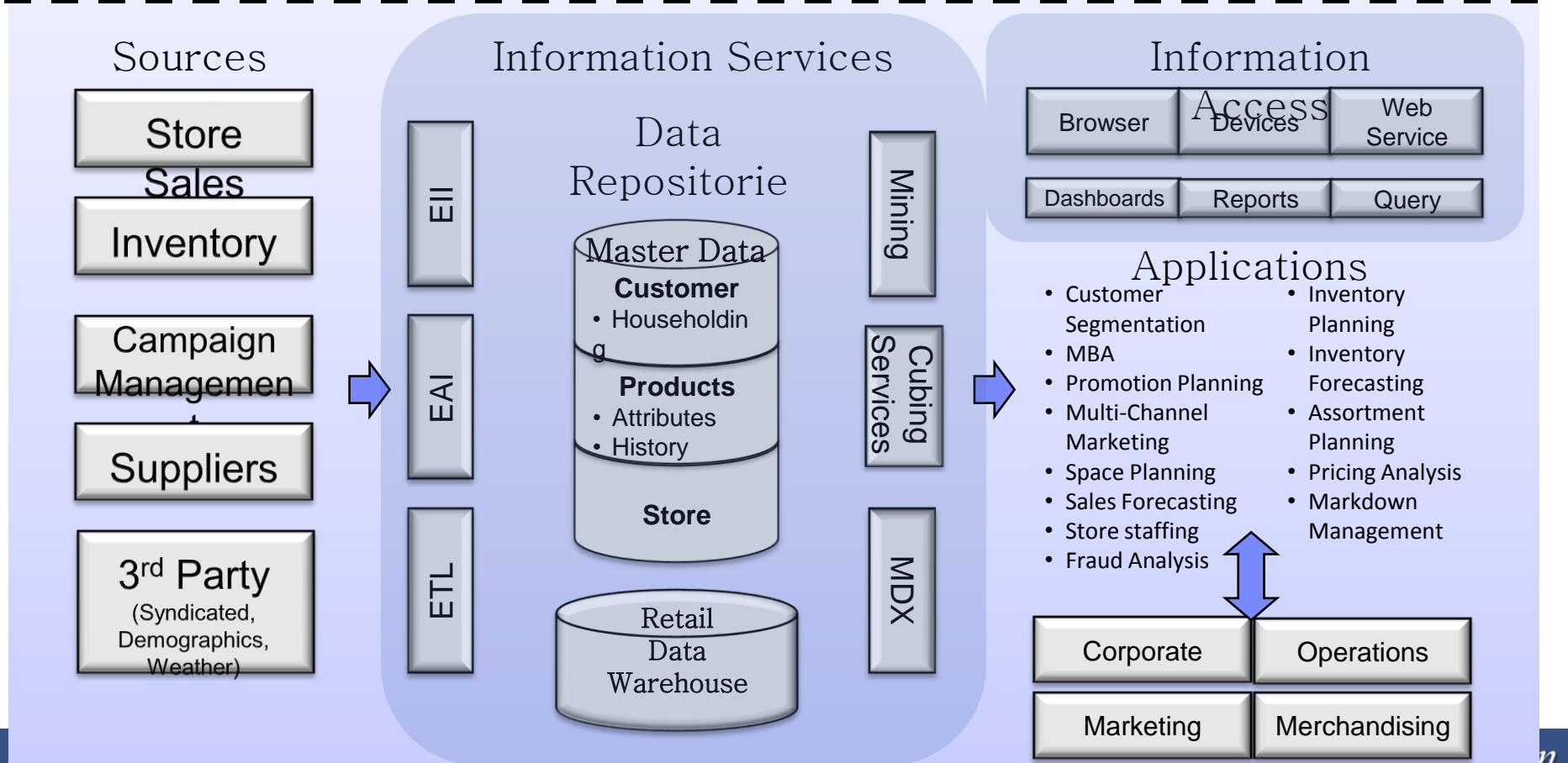
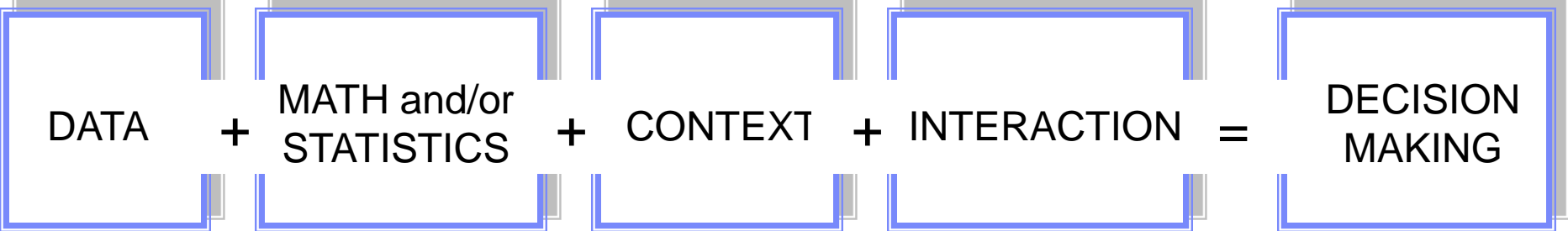
- **Ongoing and recurring activities**
- **Extract value from assets**
 - Create income
 - Increase Income (could be through lower costs)
 - Sustain and secure income
- **History of study and improvement**

Applying Advanced Analytics

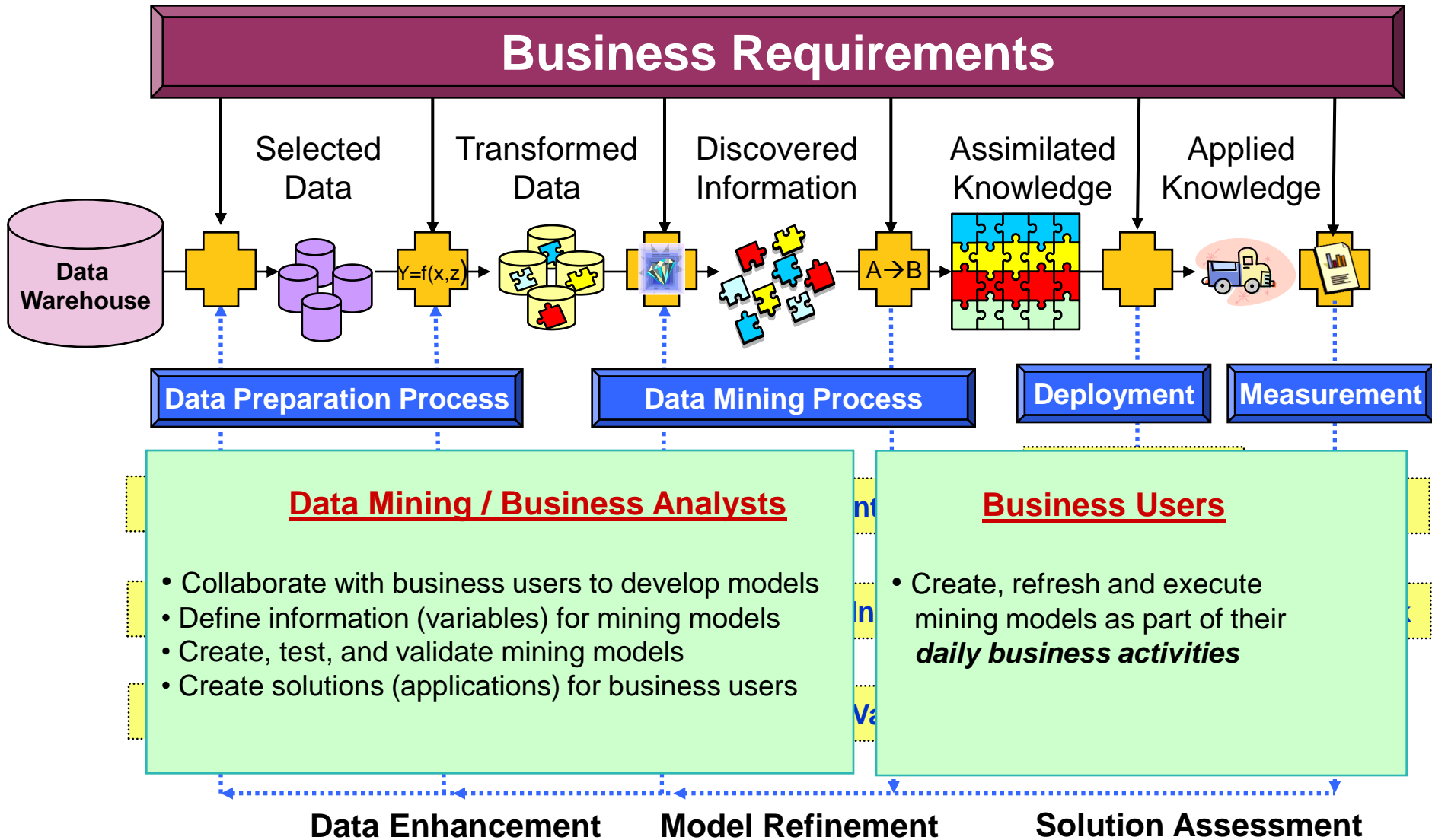
Davenport's List

- ✓ *Supply Chain*
- ✓ *Customer selection, loyalty and service*
- ✓ *Pricing*
- *Human Resources*
- ✓ *Product and service quality*
- *Financial Performance*
- *Research and Development*

Implementation



Data Mining Process Overview



Store Operations (P&L)

Retail Store Operations - Cognos Connection - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail

Cognos Connection Cognos Controller Metric Studio Event Studio Query Studio Analysis Studio Report Studio

Dan Barrett Log Off

Retail Financial Workbench Start of My Day Retail Store Operations Merchandise Dashboard Merchandise Plan Review Retail Promotions Store Development Initiatives Store Development

Retail Store Operations Portal

Store Forecast Summary Department Flash Reports

Region 11 Total Forecast

		Q1		
		Total Sales	Total Labor	Labor as % of Sales
District 1 - Region 11	Wellington	\$3,790,326	\$359,034	9.47%
	Boynton Beach	\$3,652,140	\$335,333	9.18%
	Palm Beach Gardens	\$3,633,908	\$348,639	9.59%
	Subtotal	\$11,076,374	\$1,043,006	9.42%
District 2 - Region 11	Delray Beach	\$3,381,850	\$360,927	10.67%
	Boca Raton	\$3,292,855	\$252,370	7.66%
	Pompano Beach	\$3,180,923	\$358,749	11.28%
Subtotal	\$9,855,628	\$972,046	9.86%	
District 3 - Region 11	Ft. Lauderdale	\$1,937,752	\$10,652	5.50%
	Davie	\$1,658,475	\$177,082	10.68%
	Subtotal	\$1,852,226	\$187,734	10.14%
District 4 - Region 11	Coral Cove	\$2,070,984	\$230,240	11.12%
	Weston	\$2,776,136	\$192,307	6.93%
Subtotal	\$4,847,120	\$422,548	8.72%	
Total		\$27,631,348	\$2,625,333	9.50%

Region 11 Forecast

Legend: Total Sales (Blue), Total Labor (Orange)

Department Flash Reports

Region 11 Wk 7

Home Theatre Consumer Electronics **Finish**

Select all Deselect all

Product Category	Product Line	Quantity Sold	Actual Revenue
Home Theatre	Big Screen TV	924	\$2,882,008
	Standard TV	2,136	\$6,819,194
	Speakers	7,093	\$1,215,740
	Receiver	4,126	\$1,143,365
Summary		14,279	\$12,060,307

	Revenue	Rank	% Revenue
Standard TV	\$6,819,194	1	56.54%
Big Screen TV	\$2,882,008	2	23.90%
Speakers	\$1,215,740	3	10.08%
Receiver	\$1,143,365	4	9.48%

Cognos Navigator

Retail Store Operations Blueprint

Entries: 1 - 6

- Drill Through Reports
- Store Operations Planning
- Department Snapshot
- Profit and Loss
- Retail Store Operations
- Total Forecast

Financial Merchandise Planning

Merchandise Dashboard - Cognos Connection - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Cognos Connection

Dan Barrett Log Off

Retail Financial Workbench Start of My Day Retail Store Operations Merchandise Dashboard Merchandise Plan Review Retail Promotions Store Development Initiatives Store Development

Profit and Loss Period by Division

DIVISION 1 TOTAL						
Per 2 - 2007						
	Original Forecast	Current Year Actuals	Variance \$	Prior Year Actuals	\$ Comp	% Comp
Gross Sales	\$275,843,855	\$296,566,679	\$20,722,824	\$256,511,404	\$40,055,274	15.62%
Returns	\$28,459,601	\$31,900,417	\$3,440,816	\$28,892,007	\$3,008,410	10.41%
Markdowns	\$41,311,791	\$42,972,742	\$1,660,951	\$32,909,940	\$10,062,802	30.58%
Promotions	\$41,597,458	\$43,202,446	\$1,604,988	\$40,931,085	\$2,271,360	5.55%
Net Sales	\$164,475,006	\$178,491,074	\$14,016,069	\$153,778,372	\$24,712,702	16.07%
Cost of Goods Sold	\$122,638,659	\$125,843,352	\$3,204,692	\$118,732,039	\$7,111,312	5.99%
Gross Margin	\$41,836,346	\$52,647,723	\$10,811,376	\$35,046,333	\$17,601,390	50.22%
Shrinkage	\$11,472,437	\$14,225,405	\$2,752,969	\$13,071,936	\$1,153,469	8.82%
Supply Chain Costs	\$17,095,852	\$20,794,306	\$3,698,455	\$19,169,688	\$1,624,618	8.47%
Gross Profit	\$13,268,058	\$17,628,011	\$4,359,953	\$2,804,709	\$14,823,302	528.51%

Department YTD Gross Sales Spring 2007

- Division 1 Home Theatre
- Division 1 Entertainment M...
- Division 1 Lifestyle Products
- Division 1 Home Office
- Division 1 Consumer Electro...
- Division 1 Household Products
- Division 1 Home Furnishings
- Division 1 Home Decor

Division 1 Electronics Spring 2007

Comp Sales by Product by Week in \$000's

Weekly Department Sales in \$000's Spring 2007

- Division 1 Electronics
- Division 1 Books and Music
- Division 1 Cosmetics/Fragrances
- Division 1 Candy/Snacks
- Division 1 Cards and Stationery

Division	Period	Category	Top-Down Forecast	Current Forecast	Variance
Division 1 Home Theatre	Per 4 - 2007	Gross Sales	\$19,631,544	\$20,502,511	4.25%
		Gross Profit	\$4,808,253	\$5,189,596	7.35%
Division 1 Entertainment Media	Per 4 - 2007	Gross Sales	\$19,825,177	\$19,825,177	0.00%
		Gross Profit	\$3,165,862	\$3,165,862	0.00%
Division 1 Lifestyle Products	Per 4 - 2007	Gross Sales	\$20,099,577	\$20,099,577	0.00%
		Gross Profit	\$662,190	\$662,190	0.00%
Division 1 Home Office	Per 4 - 2007	Gross Sales	\$20,322,842	\$20,322,842	0.00%
		Gross Profit	\$667,013	\$667,013	0.00%

Dashboard Reporting

Entries: 1 - 9

- Merchandise Financial Plan
- Comp Sales by Product and Week
- Merchandise Dashboard
- Period Inventory Analysis

Done Local intranet

Promotion Planning

Retail Promotions - Cognos Connection - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Cognos Connection | Dan Barrett | Log Off

Retail Financial Workbench | Start of My Day | Retail Store Operations | Merchandise Dashboard | Merchandise Plan Review | **Retail Promotions** | Store Development Initiatives | Store Development

Cognos Viewer

2005

Period 11

Monday	Tuesday	Wednesday	Thursday	Friday
Week 45 Promotion Start Date(s)				
Nov 7th Senior Discount... Duration Days 28 Cost 18,045 Period Promotio...	Nov 8th Special Mens Da... Duration Days 13 Cost 41,189 Deli Specials S...	Nov 9th Game Boy Duration Days 45 Cost 43,930 Kickin Up Some...	Nov 10th Intimates Sale ... Duration Days 43 Cost 38,975 Dresses 25	Nov 11th Deli Specials S... Duration Days 45 Cost 43 Mens Cologne S...

Cognos Viewer

% of Budget Heat Map by Quarter

Cognos Viewer

Average Sales Lift Percent

Cognos Viewer

Total Marketing Spend Actuals vs. Plan

Cognos Viewer

Pioneer - Vendor Summary

Vendor Deal Type	Year	Period	Total Vendor Funds	Total Sales Lift
Slotting Fees	2007	Period 5	\$4,196	\$9,750
	2007	Period 6	\$2,098	\$3,380
Slotting Fees - Subtotal			\$6,294	\$13,131
Volume Incentives	2007	Period 7	\$5,819	\$10,385
	2007	Period 8	\$19,427	\$29,216
	2007	Period 10	\$16,000	\$4,230
Volume Incentives - Subtotal			\$40,246	\$44,531
Pioneer - Total			\$46,540	\$57,661
Summary			\$46,540	\$57,661

Cognos Navigator

Dashboard Reporting

Entries: 1 - 9

- Name @
- % of Budget Heat Map by Quarter
- Average Sales Lift Percent Chart - Dashboard
- Current Year Marketing Spend - Dashboard - Analysis Studio
- Historical Promotions - Dashboard
- Retail Promotions Calendar - Dashboard
- Retail Promotions Calendar - Dashboard Saved Output
- Retail Promotions Planning
- Total Marketing Spend Actuals vs Plan
- Vendor Summary - Dashboard

Done | Local intranet

Wrap Up

- **Trusted Information**
- **Portfolio Approach: Right tool for the right job**
- **Apply with *Confidence***