



IBM Performance 2011

Scenarios for Predictive Analytics

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Business Analytics Solution Architect



The Predictive Advantage



Predict &
Act

Deploying Predictive Models

- Leverage current and historical data
- Make robust predictions on current and future cases
- Embed in business processes to transform decision making and drive better outcomes

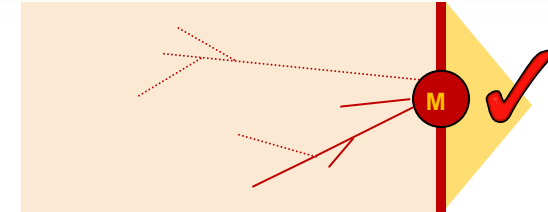
Predictive Analytics:

- Algorithms automatically discover significant patterns
- Deliver deep insights to improve strategic and operational decision making
- “Learn” from historical data – create *predictive models*

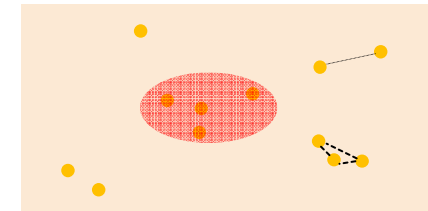
Traditional BI and Conventional Analysis:

- Insight, metrics, etc. up to this point in time
- User initiative to explore aggregate data

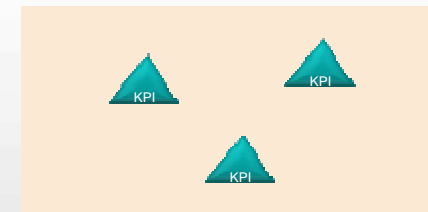
Sense &
Respond



↑
“NOW”



↑
“NOW”



↑
“NOW”



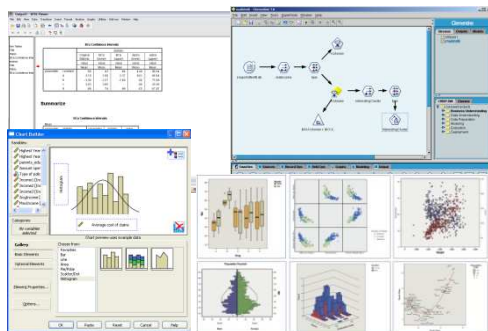


The Predictive Analytics Process: Iteration for Success and Innovation

Analyze data to provide insight and predict the future

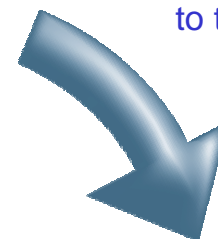


Predict



Predictive Analytics

Recommend the most appropriate action to take

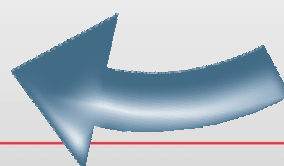


Act

- Improve customer retention
- Grow share of wallet
- Minimize risk
- Increase customer satisfaction
- Enhance market share

Dashboards
ATM Systems
CRM
CM Apps
Branch Apps

Decision Optimization



Capture



Read new data on customers, events, etc. for continuous improvement

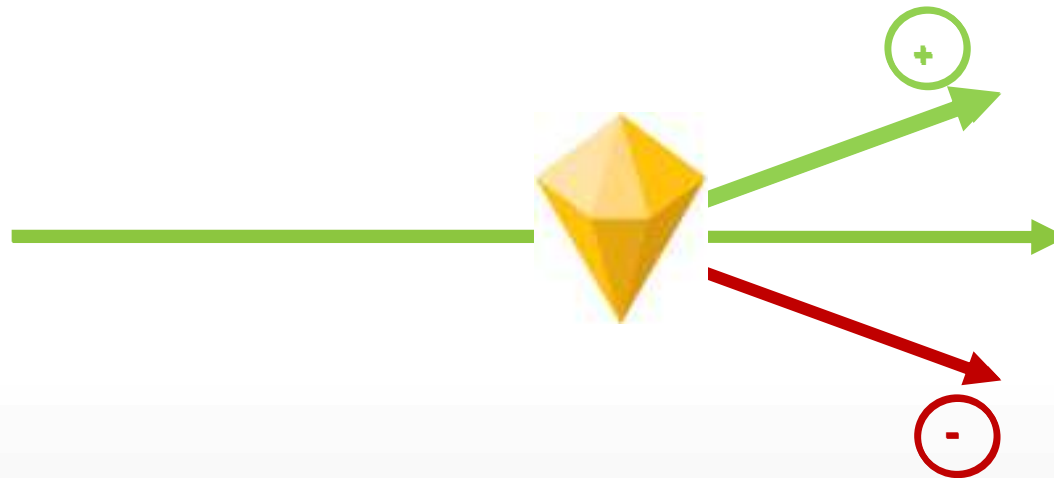
Enterprise Data Sources



Delivering ROI through improved decision making



- Inserting “intelligence” at key decision points in business processes to improve outcomes – and automate decisions



Deployment = Action based on Analytics



▪ **Attract**

- Analytics: What is the likelihood a prospect will respond?
- Action: Send customer x a mailing for y.

▪ **Grow**

- Analytics: What is the mostly likely next product for each customer?
- Action: Offer customer x a discount for product y when they are on your web site.

▪ **Retain**

- Analytics: Which customers are likely to leave?
- Action: Offer customer x a new product that will incent them to stay when they call your call center.

▪ **Identify fraud**

- Analytics: What activities are likely to be fraudulent?
- Action: Send claim to SIU or fast track the claim when they file the claim.

▪ **Mitigate risk**

- Analytics: Which cases are normal or outliers?
- Action: This case should be investigated or sent to a specialist.

▪ **Operational Excellence**

- Analytics: Which production lines are likely to fail?
- Action: Send maintenance order to specialist with recommend action.

Predictive Analytics journey



...but where to start?

Business Scenarios



Home

Capabilities

Business
Objectives

Business
Functions

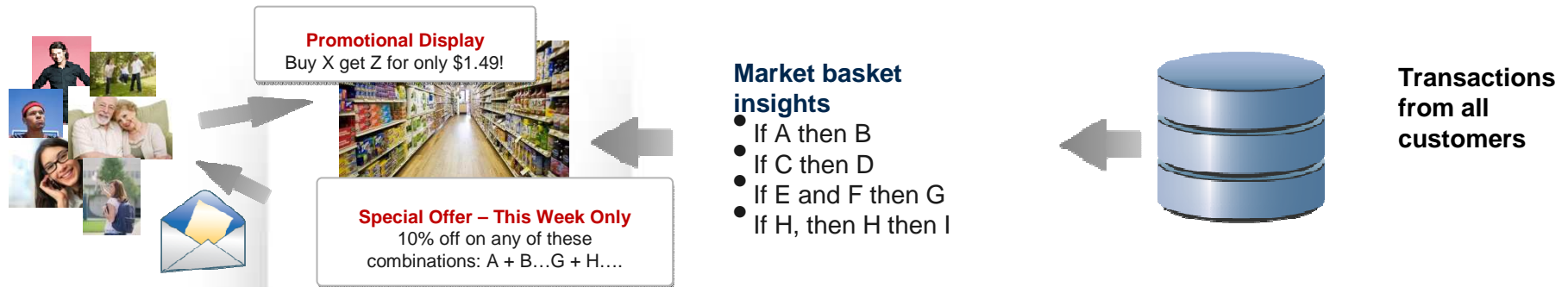
Analytical
Process

Data

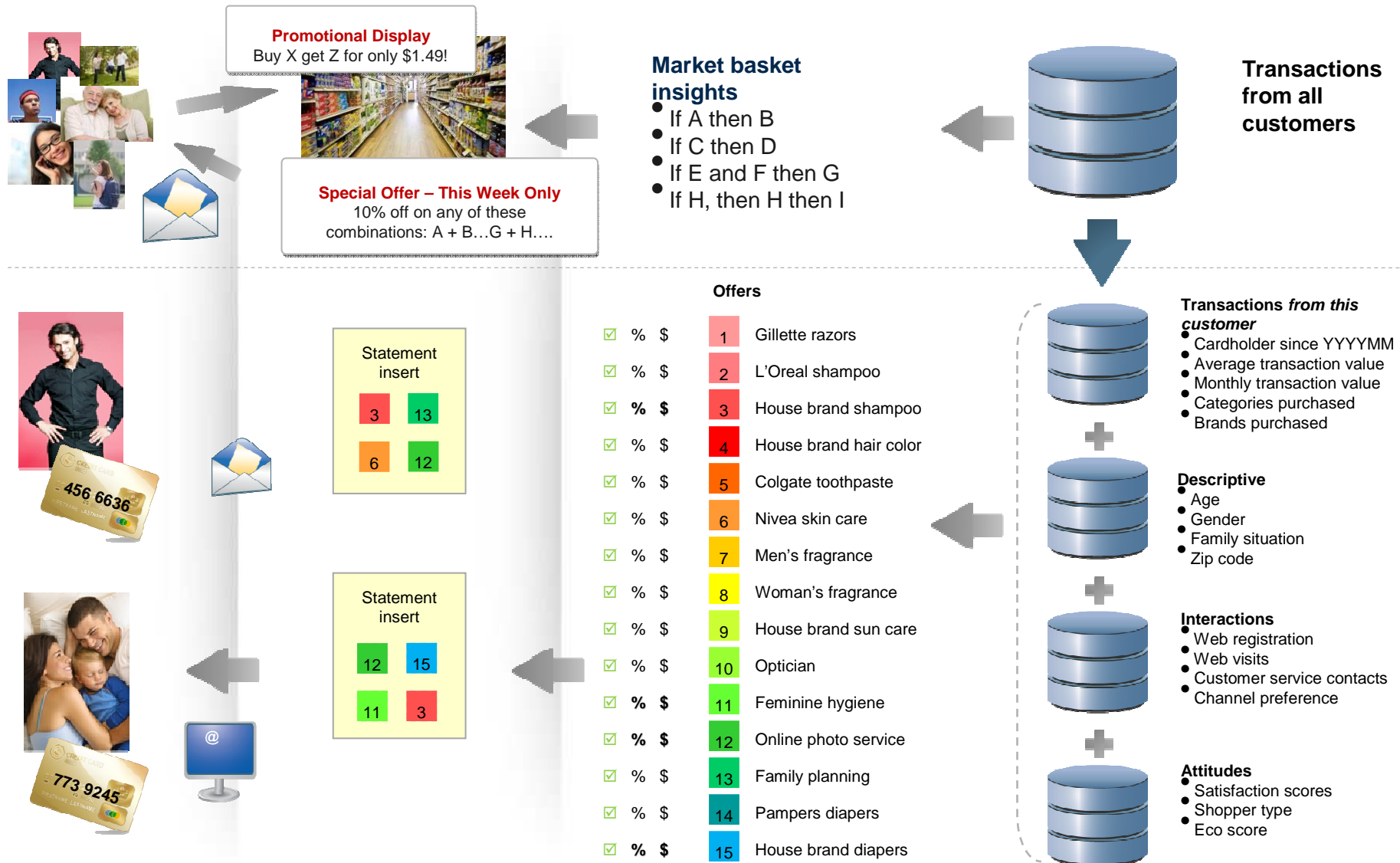
Journey

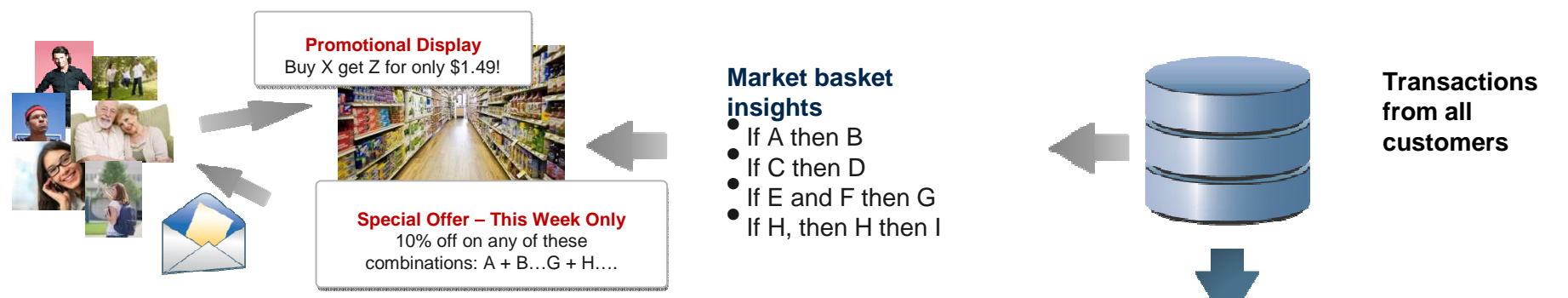
- Home High-level overview of the solution
- Capabilities What kind of capabilities will be needed for the solution?
- Business Objectives What Business objectives does the solution support?
- Business Functions Which Business Functions are targeted by the solution?
- Analytical Process How does the analytical process look like?
- Data What kind of Data is needed for the solution?
- Journey How does the journey look like and what are potential future steps?

Business Scenario: Retail Market Basket Analysis



Business Scenario: Retail Market Basket Analysis





Statement insert

3	13
6	12



Statement insert

12	15
11	3

- Offers**
- ✓ % \$ 1 Gillette razors
 - ✓ % \$ 2 L'Oreal shampoo
 - ✓ % \$ 3 House brand shampoo
 - ✓ % \$ 4 House brand hair color
 - ✓ % \$ 5 Colgate toothpaste
 - ✓ % \$ 6 Nivea skin care
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 - ✓ % \$ 12 Online photo service
 - ✓ % \$ 13 Family planning
 - ✓ % \$ 14 Pampers diapers
 - ✓ % \$ 15 House brand diapers



- Transactions from this customer**
- Cardholder since YYYYMM
 - Average transaction value
 - Monthly transaction value
 - Categories purchased
 - Brands purchased



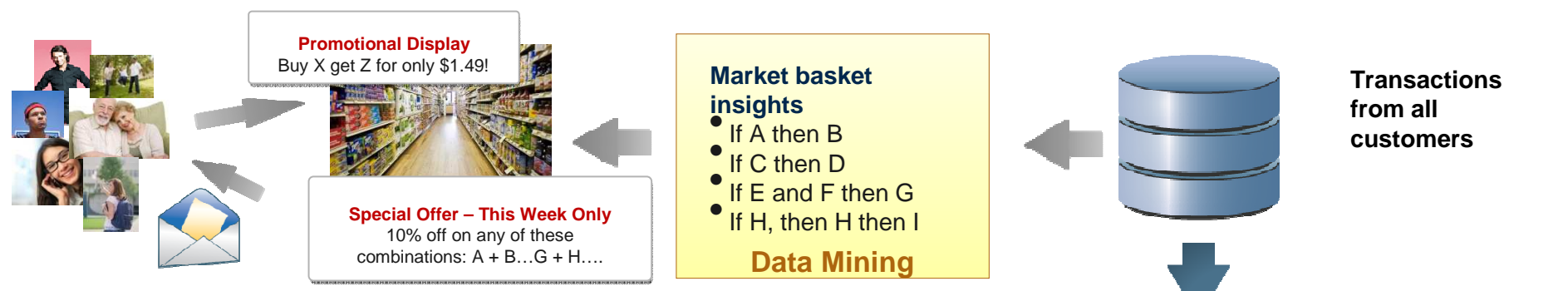
- Descriptive**
- Age
 - Gender
 - Family situation
 - Zip code

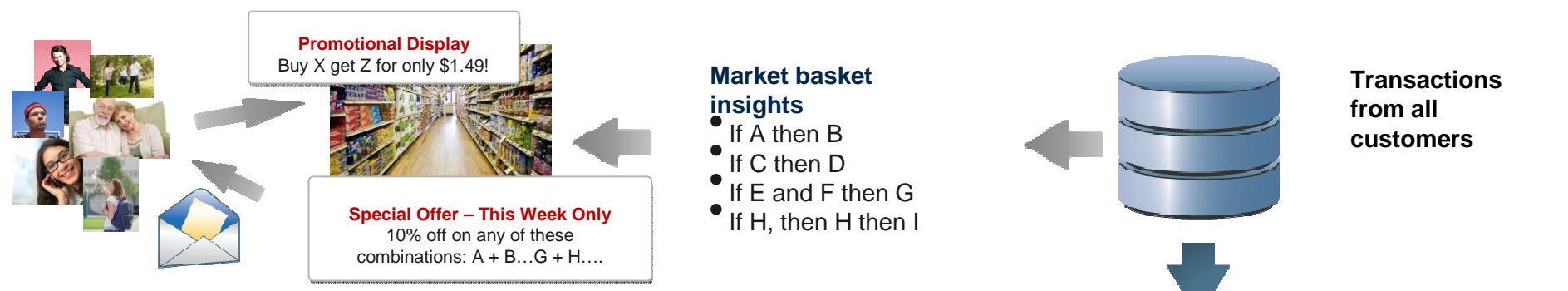


- Interactions**
- Web registration
 - Web visits
 - Customer service contacts
 - Channel preference



- Attitudes**
- Satisfaction scores
 - Shopper type
 - Eco score





Statement insert

3	13
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Statement insert

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Predictive Modeling

Offer	Category	Item
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$

Offers

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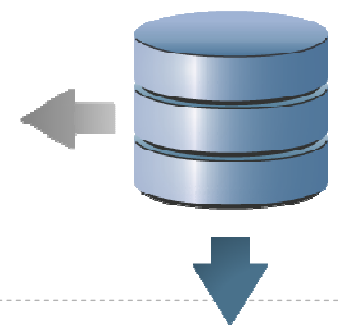
Attitudes

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Market basket insights

- If A then B
- If C then D
- If E and F then G
- If H, then H then I



Transactions from all customers



Decision Optimization

Statement insert

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Statement insert

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✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
✓	%	\$
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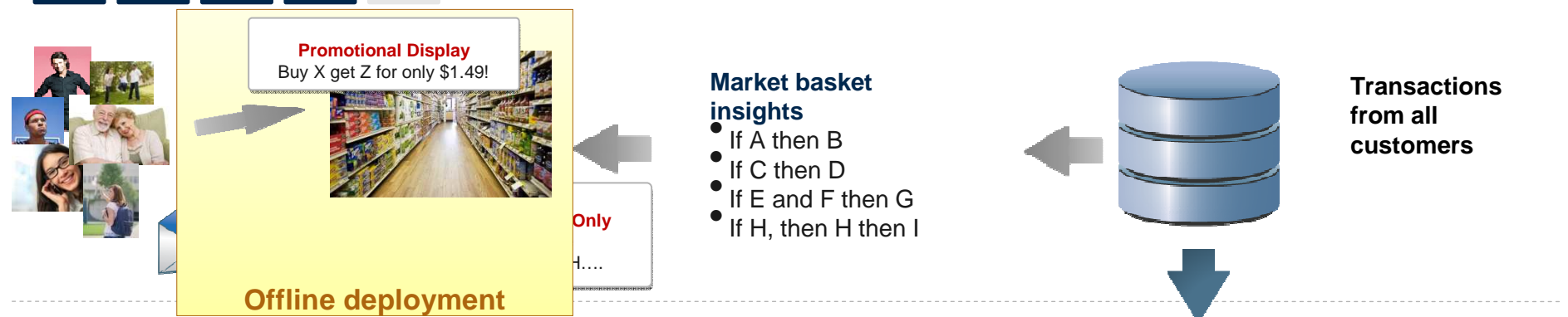
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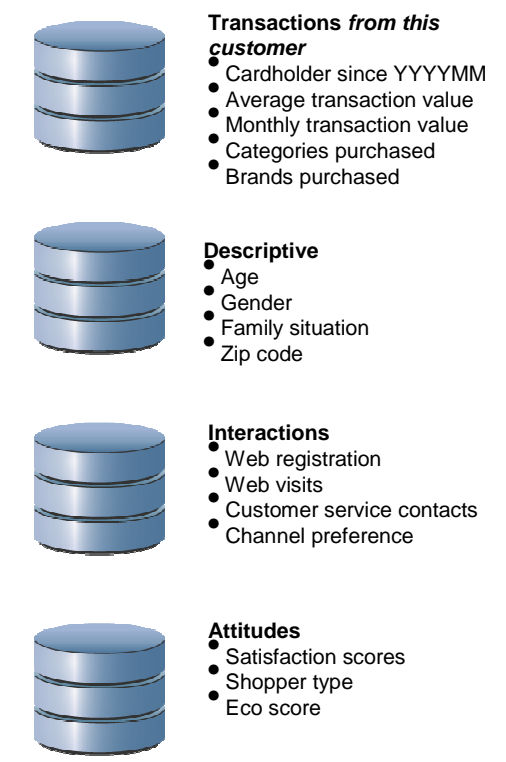


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Offers

✓	%	\$	1	Gillette razors
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✓	%	\$	14	Pampers diapers
✓	%	\$	15	House brand diapers



Promotional Display
Buy X get Z for only \$1.49!

Special Offer – This Week Only
10% off on any of these combinations: A + B...G + H...

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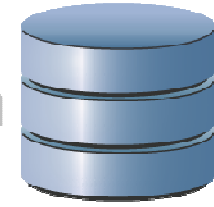
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Integration with operational systems/processes

Market basket insights

- If A then B
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Transactions from all customers



Offers

% \$	1	Gillette razors
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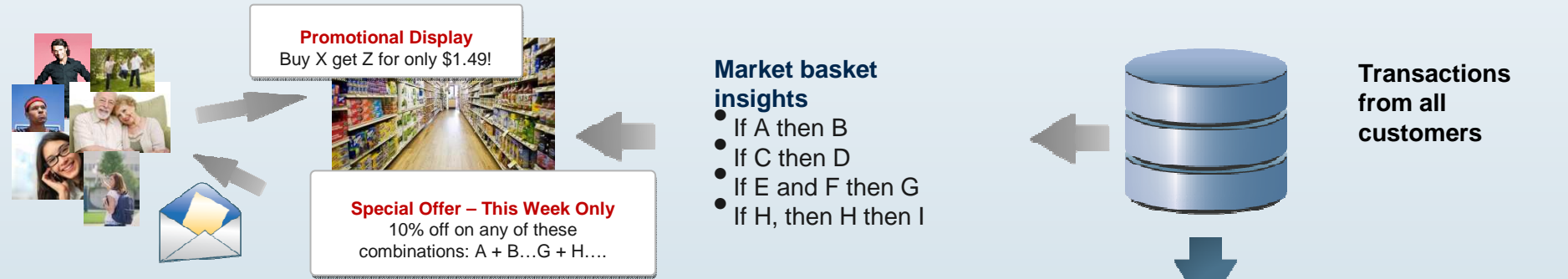
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Attitudes

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Grow customer value

Offers

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Transactions from all customers

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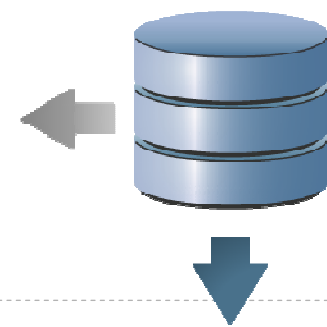
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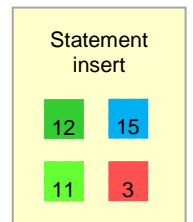
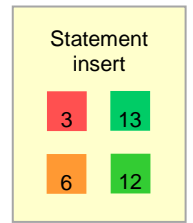


Market basket insights

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Transactions from all customers



Offers

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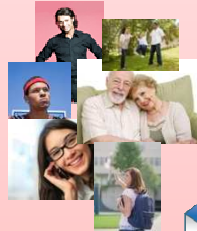


- Interactions**
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Marketing



Special Offer – This Week Only
10% off on any of these combinations: A + B...G + H....



Statement insert

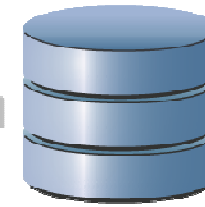
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Statement insert

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Offer	Item
✓	% \$ 1 Gillette razors
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Transactions from all customers



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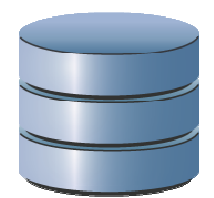
Interactions

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Attitudes

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POS Transaction Data



Demographics



Interactions



Attitudes

Capture



Association detection



Customer Analysis

- Segments
- Profiles
- Scoring models
- ...

Predict



In-store promotion decisions



"Blanket" marketing



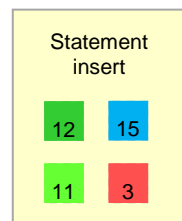
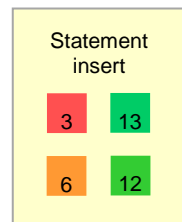
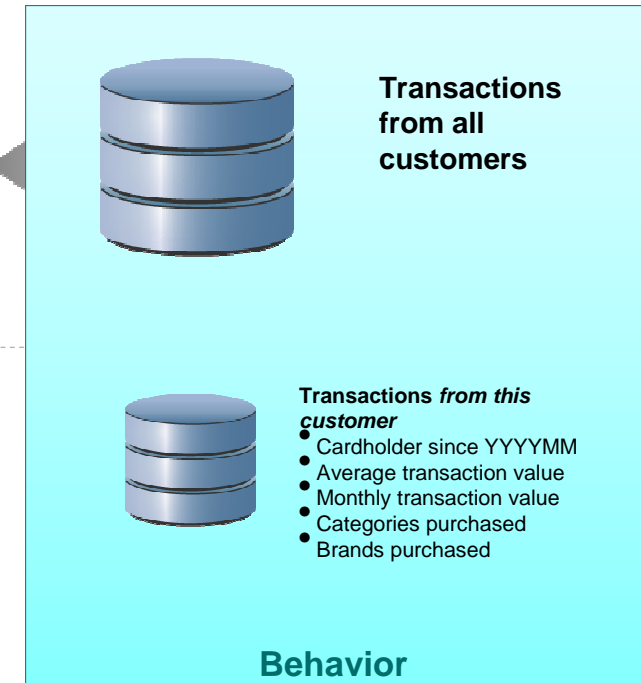
Targeted marketing

Act



Market basket insights

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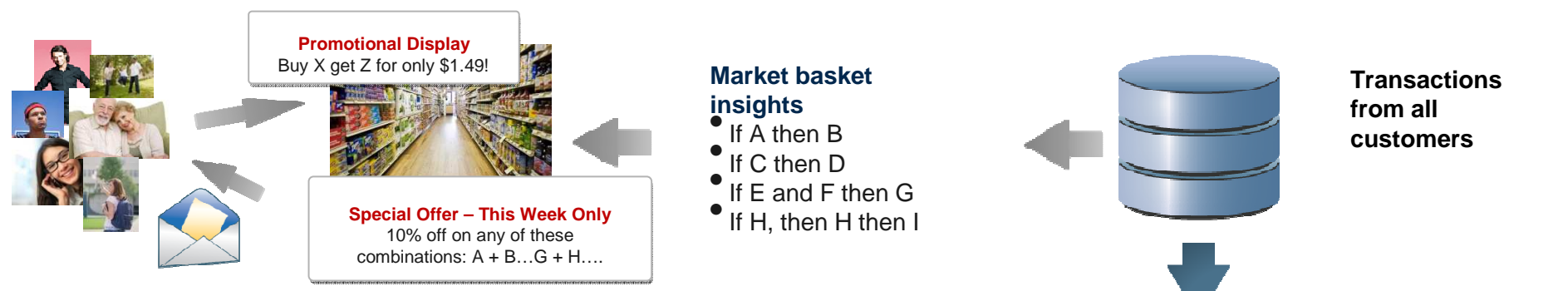


Offers

- | | | | | |
|---|---|----|----|------------------------|
| ✓ | % | \$ | 1 | Gillette razors |
| ✓ | % | \$ | 2 | L'Oreal shampoo |
| ✓ | % | \$ | 3 | House brand shampoo |
| ✓ | % | \$ | 4 | House brand hair color |
| ✓ | % | \$ | 5 | Colgate toothpaste |
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| ✓ | % | \$ | 9 | House brand sun care |
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| ✓ | % | \$ | 12 | Online photo service |
| ✓ | % | \$ | 13 | Family planning |
| ✓ | % | \$ | 14 | Pampers diapers |
| ✓ | % | \$ | 15 | House brand diapers |

Behavior

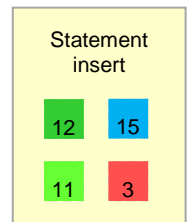
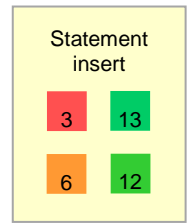
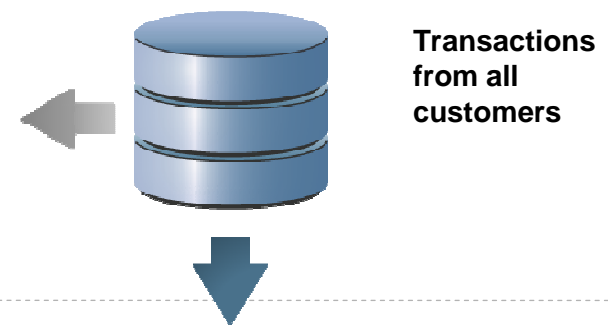
- Family situation
 - Zip code
- Interactions**
- Web registration
 - Web visits
 - Customer service contacts
 - Channel preference
- Attitudes**
- Satisfaction scores
 - Shopper type
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Market basket insights

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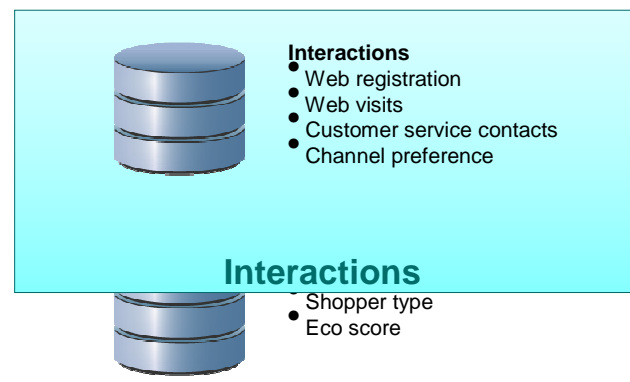
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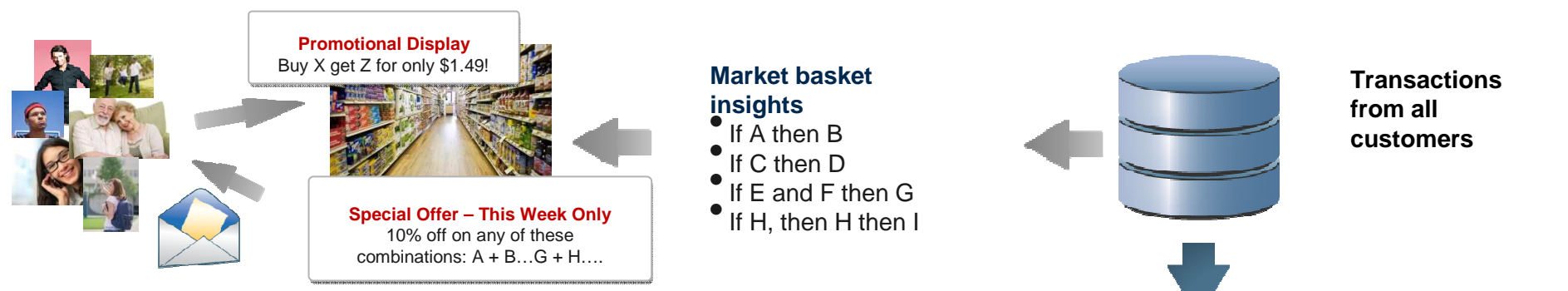


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- Descriptive**
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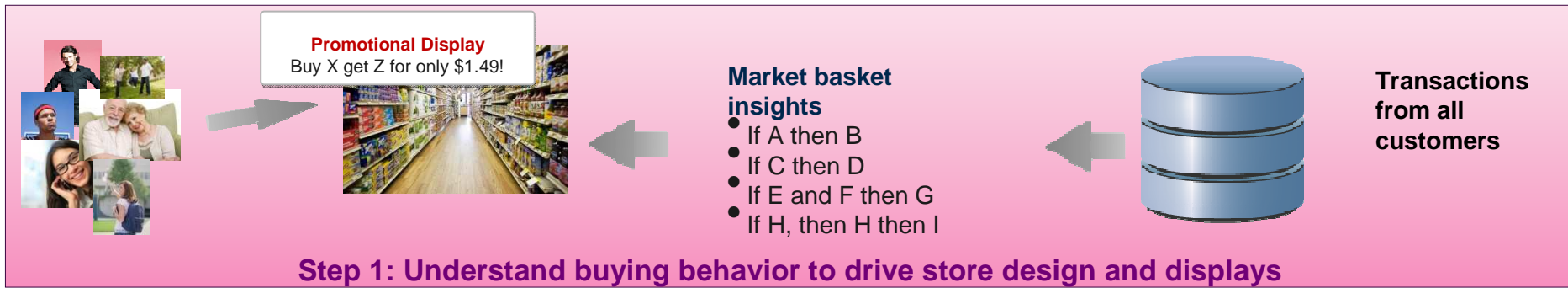
Interactions

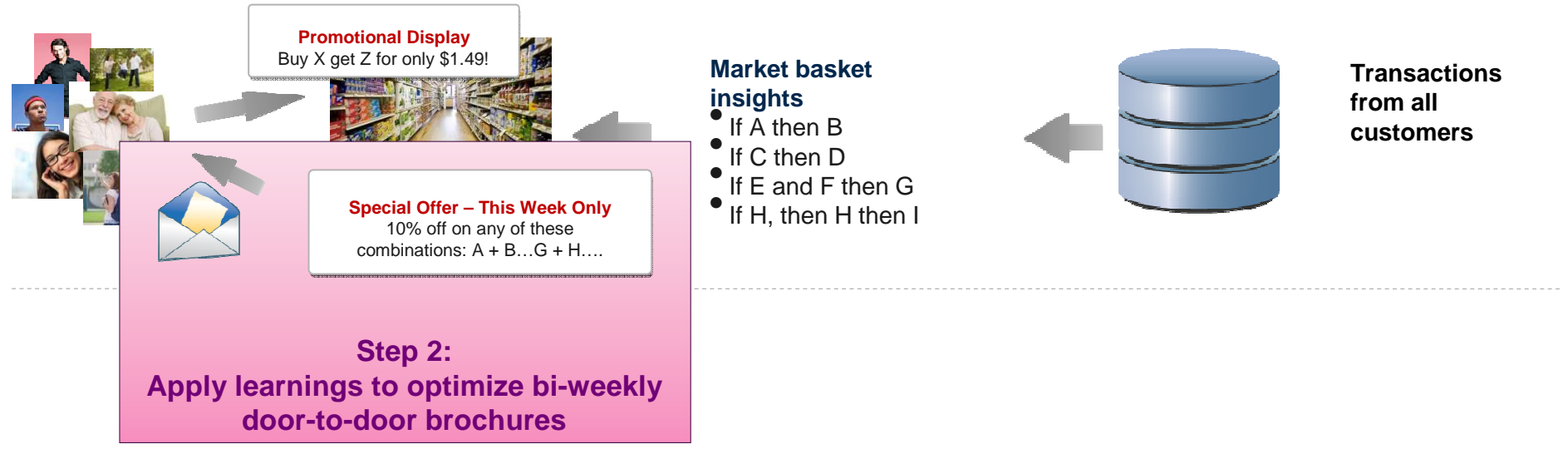
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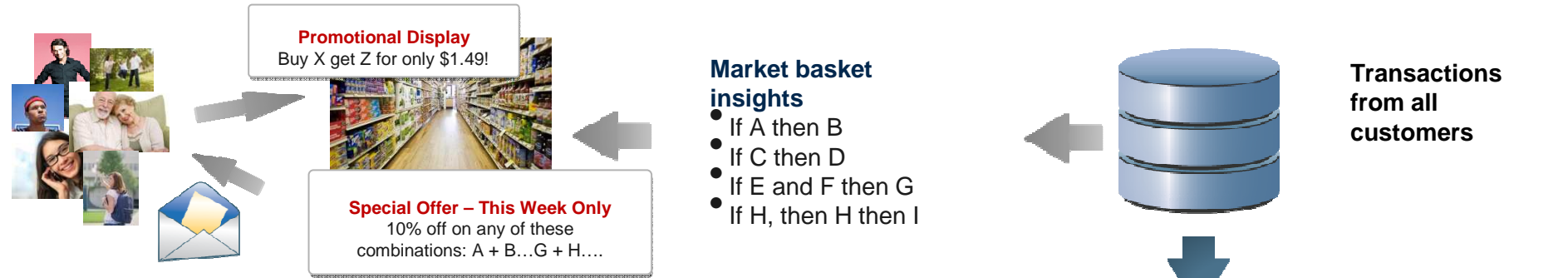
Attitudes

Attitudes

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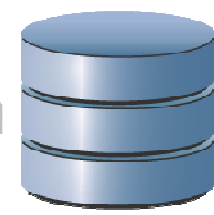
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Step 3:
Extend to loyalty program – offers included with statement

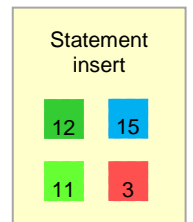
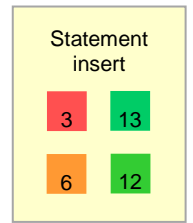


Market basket insights

- If A then B
- If C then D
- If E and F then G
- If H, then H then I



Transactions from all customers



Offers

✓	%	\$	1	Gillette razors
✓	%	\$	2	L'Oreal shampoo
✓	%	\$	3	House brand shampoo
✓	%	\$	4	House brand hair color
✓	%	\$	5	Colgate toothpaste
✓	%	\$	6	Nivea skin care
✓	%	\$	7	Men's fragrance
✓	%	\$	8	W...
✓	%	\$	9	H...
✓	%	\$	10	O...
✓	%	\$	11	F...
✓	%	\$	12	O...
✓	%	\$	13	F...
✓	%	\$	14	P...
✓	%	\$	15	H...



Transactions from this customer

- Cardholder since YYYYMM
- Average transaction value
- Monthly transaction value
- Categories purchased
- Brands purchased



Descriptive

- Age
- Gender
- Family situation
- Zip code

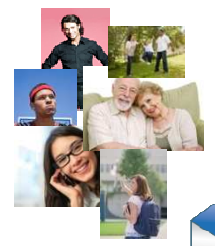
Step 4: Enrich data to increase model accuracy and increase targeting precision

Interactions

- Web registration
- Web visits
- Customer service contacts
- Channel preference

Attitudes

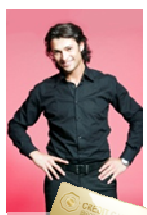
- Satisfaction scores
- Shopper type
- Eco score



Promotional Display
Buy X get Z for only \$1.49!

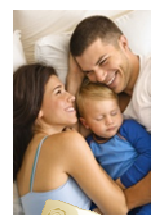


Special Offer –
10% off on combinations:



Statement insert

3	13
6	12



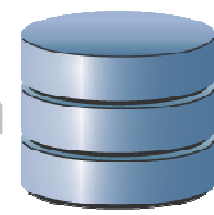
Statement insert

12	15
11	3

- % \$ 14 Pampers diapers
- % \$ 15 House brand diapers

Future Steps:

- Optimize cross-sell offers on eCommerce website
- Optimize Real time personalized offers on loyalty program website
- Merchandizing/assortment planning
- Employee retention
- Fraud/shrinkage analysis
- Store location planning
- ...



Transactions from all customers



Transactions from this customer

- Cardholder since YYYYMM
- Average transaction value
- Monthly transaction value
- Categories purchased
- Brands purchased



Descriptive

- Age
- Gender
- Family situation
- Zip code



Interactions

- Web registration
- Web visits
- Customer service contacts
- Channel preference



Attitudes

- Satisfaction scores
- Shopper type
- Eco score

Business Scenario Library



- Market Basket Analysis
- Assortment Planning
- Customer Profitability
- Credit Risk
- Campaign Insight and Optimization
- Human Capital Management
- Claims Customer Experience
- Claims Fraud
- Cross-sell
- Production Continuity
- Retention
-and many more



Solution Configuration

Start small, think big



Scope / Configuration	Small	Medium	Large
Analytics Expansion	Statistics Workbench	Modeler Workbench	Premium Analytics Server
Analytics Center of Excellence	Professional CoE	Modeler Premium CoE	Enterprise CoE
Decision Management	Departmental Application	Configured Solutions Environment	Mission Critical Real Time Deployment



Next steps

Ask your seller for detailed presentation on selected Business scenarios and start building your predictive analytics journey...

Where to Begin with Predictive Analytics

Discover the problems that will show the greatest return on an investment

Information Management Magazine, Sept/Oct 2011

James Taylor

http://www.information-management.com/issues/21_5/where-to-begin-with-predictive-analytics-10021103-1.html?portal=analytics