

CRM, Technology and the BMO Financial Group

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Person-to-Person Technology Executive Council
IBM Software Group | DB2 Information Management Software
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Presentation Overview

- **About BMO**
- **CRM Vision: The Customer Experience**
- **CRM Roadmap**
- **Technology View**
- **Benefits**
- **Futures View**

Who is Bank of Montreal Financial Group

Founded in 1817, Canada's first bank, made up of:

- Personal and Commercial Client Group
- Private Client Group
- Investment Banking Group
- Assets \$258 billion as of July 31, 2003
- 34,000 employees

Personal and Commercial Client group

- 7.5 million personal and commercial customers
- 1,100 branches
- 2,000 automated banking machines
- Contributed 53% to net income year-to-date

Private Client Group

- Total assets under management and administration and term investments of \$245 billion as of July 31, 2003.
- Poised for growth by cross-selling full range of wealth products & services

Investment Banking Group

- Challenged by weak capital markets & economy in U.S.
- \$535 million net income year-to-date
- Reduced lower return risk-weighted assets



Institute of Learning of the Bank of Montreal.

BMO Financial Group – Key Priorities

BMO's Annual Targets

Performance Measure	F2003 Target	Revised F2003	Year-to-date Performance
EPS Growth	10-15%	15-20%	28%
ROE	14-15%	15-16%	15.8%

Successful Strategy:

- Invest in Core Canadian Franchise
- Expand selectively & substantially in the U.S.
- Build on our longstanding strengths

Longstanding Strengths:

- Strong credit risk management
- Strong dividend track record
- Industry-leading performance-based compensation initiatives

CRM Vision: The Customer Experience

Customer Relationship Management Business Strategy / Vision

“To be the only bank our customers need”

Customer Promise

- We treat you as an individual by providing personal attention and customized solutions to address all of your financial needs



Overall Objectives

- Top tier revenue growth
- Improve average productivity by 150 to 200 basis points
- Significant contribution to BMO shareholder value growth

Segment Objectives

Personal and Commercial Client Group

- Improve productivity
- Grow Market Share in personal banking and small business and commercial lending


Private Client Group

- Expand distribution network on both sides of the border
- Leverage customer relationships by providing integrated products and marketing initiatives
- Expand U.S. wealth management businesses through selective acquisitions and planned growth


Investment Banking Group

- Build on the success of the Harris Nesbitt mid-market franchise
- Build on our Canadian leadership in equity, debt, securitization, and mergers and acquisitions

We want our customers to say



I am confident that the bank is offering me the best limit & product rate.




Offers presented to me are often timely given my current situation.

The bank is aware of my dealing with other bank staff.


No matter which staff member at the bank I speak to, I always get the same message.

Offers presented to me often include the product that suits my current situation.

I do not get bombarded with offers at my home or every time I come to the branch.

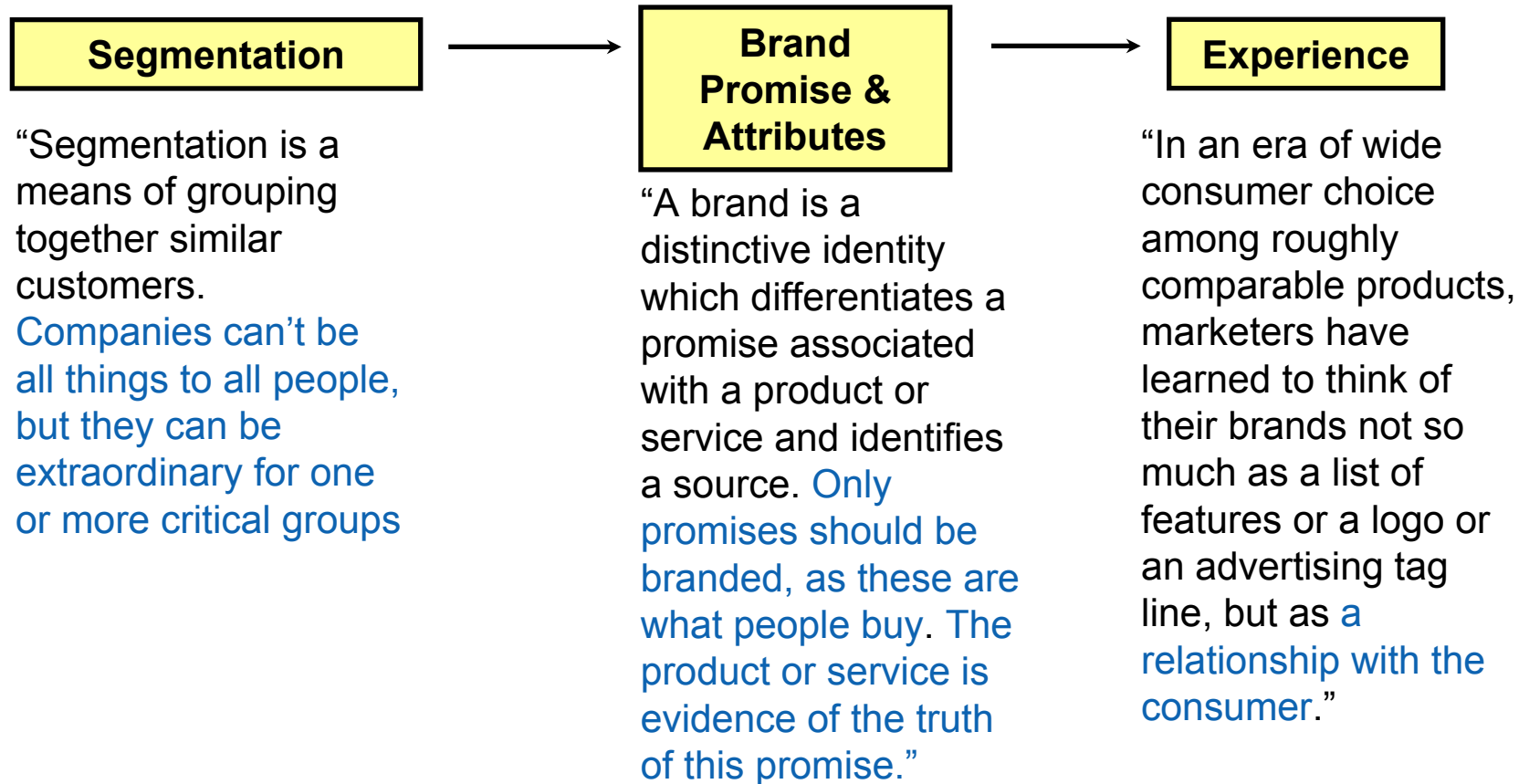


I find applying for and subsequently taking an offer to be a much simpler and quicker process.



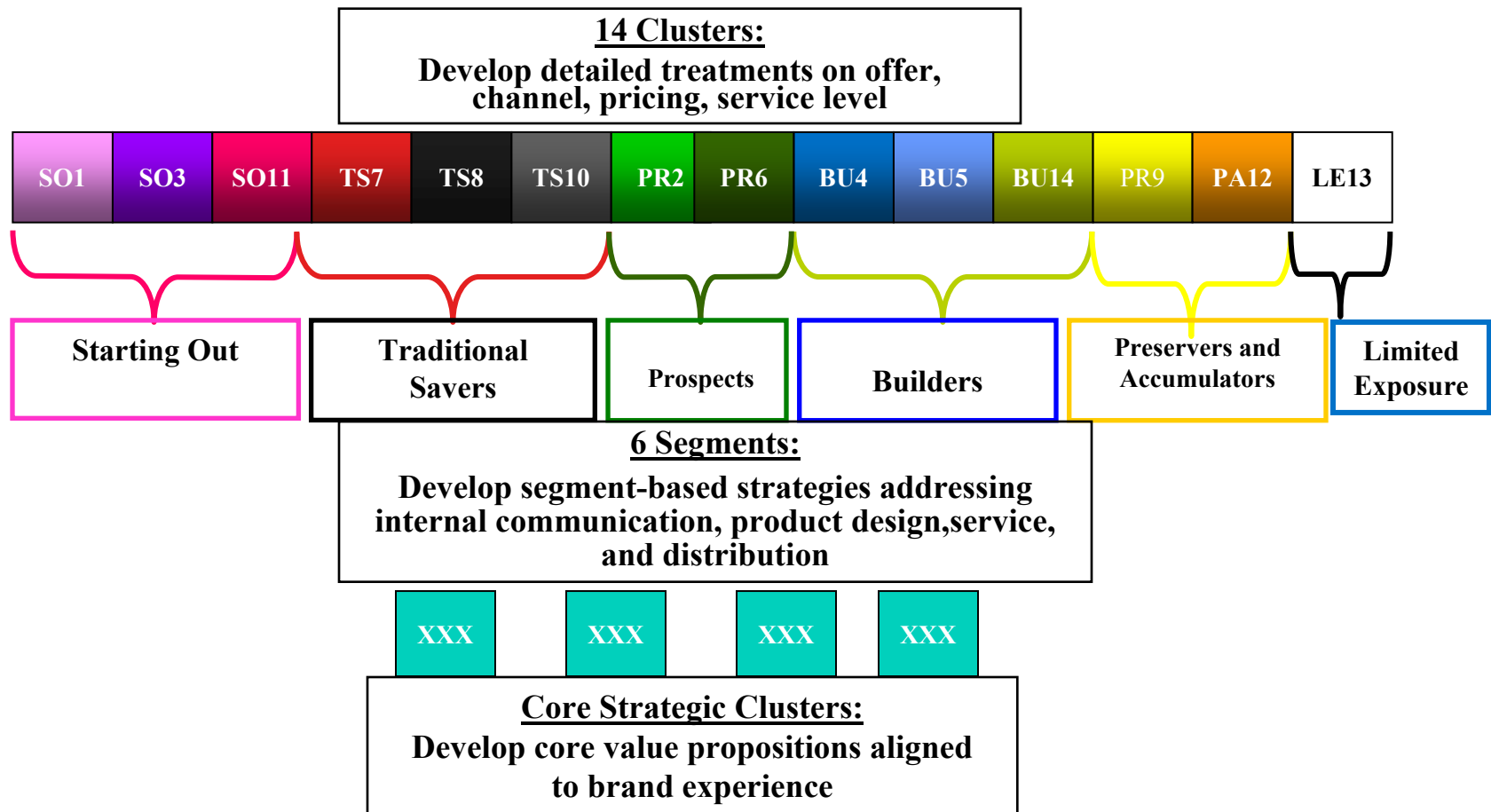
I am sometimes made an offer which I don't need today, but realize I will need in the near future.

Building the Customer Experience

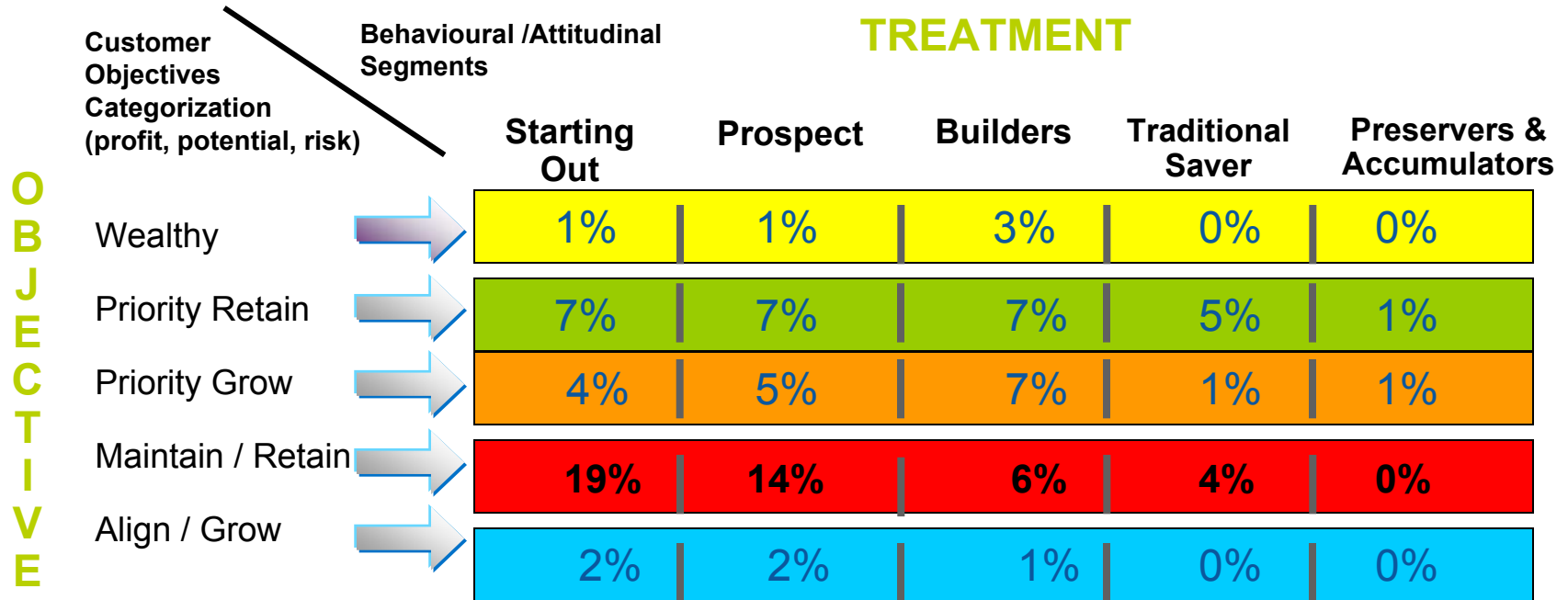


It’s all about the execution

Making Segmentation Actionable

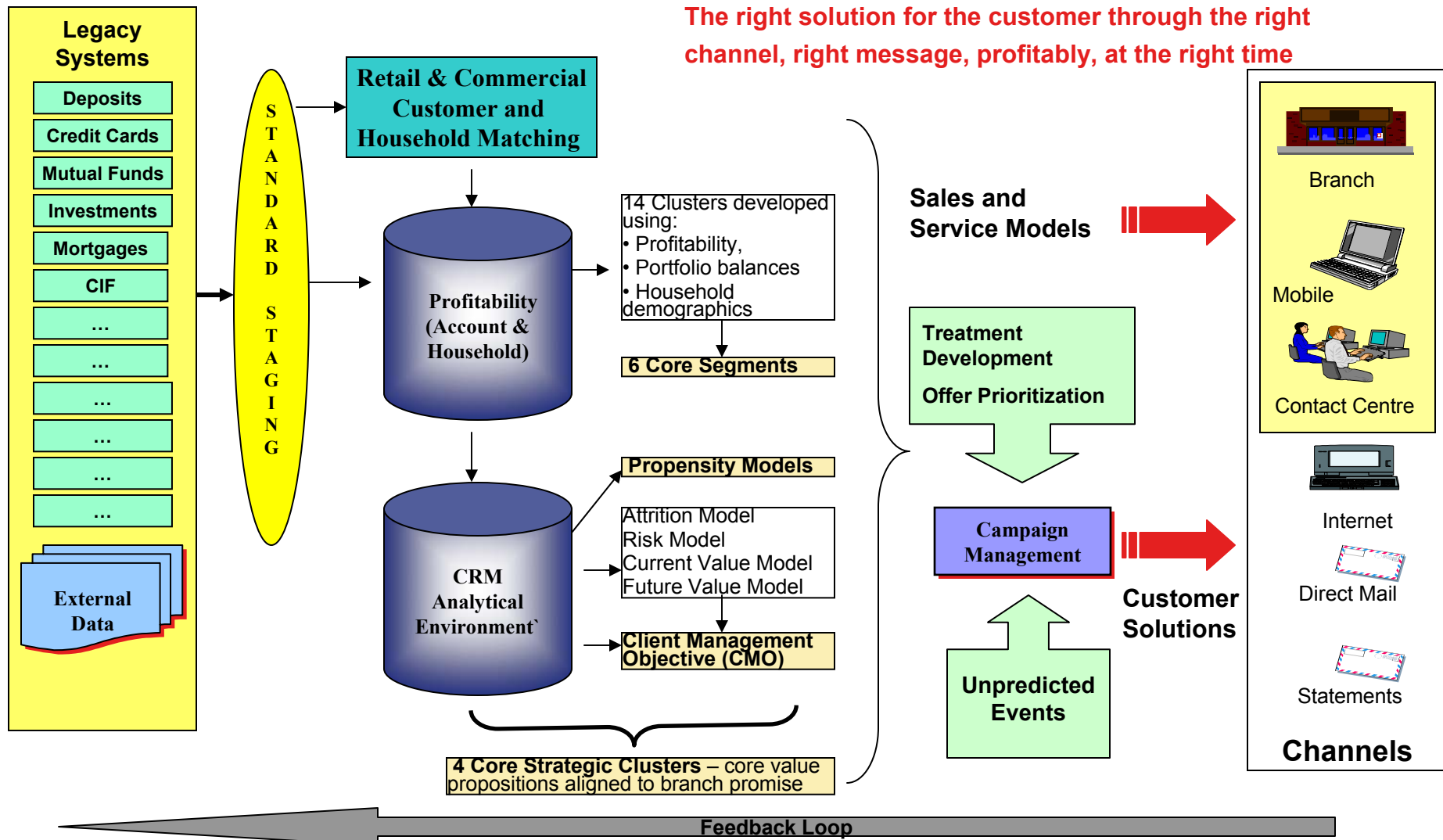


Segmentation, when combined with Client Management Objectives, creates a framework for the systematic approach to anticipating and meeting client needs



Percentage of all Customers

Enabling the Customer Experience



The right solution for the customer through the right channel, right message, profitably, at the right time

CRM Roadmap

CRM Roadmap

	Customer Sales and Service Touch Points	Preferences	Operational Customer Data	Offer Creation, Campaign Management	Analytical & Data Mining	Data Consolidation	Legacy	MIS	Strategy and Planning Architecture
Year 2050	<ul style="list-style-type: none"> Real Time Consistent channel experience Covers BMO Financial Group Personalized across all channels 	Client access is: <ul style="list-style-type: none"> Online Real time 	<ul style="list-style-type: none"> All customer prospects 99% accuracy Real time 	<ul style="list-style-type: none"> Real Time creation Life value-based optimization 1:1 Fully closed loop Right product @ Right Time 	<ul style="list-style-type: none"> Real Time Scoring and Event Processing 	<ul style="list-style-type: none"> Real Time Point-in-time (weekly/monthly) 2 Years Detailed History 	<ul style="list-style-type: none"> Real Time Fully integrated operational systems 	<ul style="list-style-type: none"> Real Time Point-in-time Fully consistent Reconciled with financials 	<ul style="list-style-type: none"> Clear vision and alignment of business and technology Continuously refreshed
Best of Class (2003)	<ul style="list-style-type: none"> Web usage Data consolidation (implied intent) 	Client preferences by: <ul style="list-style-type: none"> Product Channel Privacy 	<ul style="list-style-type: none"> Real time All products 99% accurate 	<ul style="list-style-type: none"> CM Software Campaign Planning Life-time value based offer optimization Batch – weekly 	<ul style="list-style-type: none"> Monthly scoring Daily Events 	<ul style="list-style-type: none"> Daily transactions to warehouse 2 years detailed history 		<ul style="list-style-type: none"> Daily call reports Weekly MIS Monthly reconciled 	
Stretch	<ul style="list-style-type: none"> Push solution to web Event driven via branch, cc 	<ul style="list-style-type: none"> Full automation of minimum preferences 	<ul style="list-style-type: none"> Add Brokerages 	<ul style="list-style-type: none"> Campaign Planning Tool 					
Threshold	<ul style="list-style-type: none"> Pull: at Branch, Call Centre Pull retail customer view Content Mgmt Scripts 	<ul style="list-style-type: none"> Storage of preferences Social Insurance Number Share Do not solicit 	Existing customers <ul style="list-style-type: none"> <5% drop Key items like tel #, name, address 80% accuracy All retail products 	<ul style="list-style-type: none"> Industry leading package to replace existing software Monthly 	<ul style="list-style-type: none"> Monthly Scoring Improve time to market Event Processing < 72 hrs 	<ul style="list-style-type: none"> Customer level - Cleanup multiple extracts Documentation Begin capture of history Storage of external feeds 	<ul style="list-style-type: none"> Quarterly extracts 	<ul style="list-style-type: none"> Monthly reconciled reporting access to Siebel 	

CRM Principles & Priorities

The initiative selection process was driven by the group's desire to address the following high-level needs:

1. Revenue generation

- Drive revenue quickly leveraging existing CRM infrastructure

2. Speed of delivery to field

- Pace the delivery of initiatives to the field to ensure sales and service force effectiveness

3. Length of decision production time

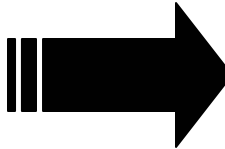
- Shorten production decision cycle in order to aid in the timely delivery of information

4. Understanding customer needs

- Better understand our customer's needs by leveraging our MIS capabilities and improving quality and accessibility of our customer information

5. Economics of attaining CRM end state

- Attain CRM end state in economically sensible manner
- Improve alignment of Retail & Wealth organizations to create better banking solutions




Prioritizing the building blocks was essential!

1. Data Quality
2. CRM Infrastructure
3. Analytics & Decision Environment
4. Campaign Management
5. Product Decisioning
6. Event Triggers

1. Data Quality

Data Quality	Issue	Resolution
Information Stewardship	<ul style="list-style-type: none"> • Lack of governance over data • No data ownership 	<p>Leadership team established to ensure on-going governance process</p> <p>Working group established to ensure customer information considerations are being addressed across enterprise</p>
Customer Information Quality	<ul style="list-style-type: none"> • Information not treated as an asset • No explicit accountability as current environment is product-centric 	Defined and communicated guiding principles regularly
Information Standards	<ul style="list-style-type: none"> • No standards for data definitions available • Each system developed own standards 	<p>23 Key data elements defined as starting point</p> <p>Established common definitions, business rules, populated into central metadata repository</p>
Customer Information Architecture	<ul style="list-style-type: none"> • Fragmented customer information 	<p>Customer data inventory taken; collected and linked data from all CIF systems</p> <p>Defined statements aligned with business goals</p>
Customer Contact	<ul style="list-style-type: none"> • Duplicate customer records • Minimal validation of customer data in some sales & services processes 	<p>Developing proactive approach to removing duplicates and improving accuracy of data</p> <p>Implementing approaches to change attitudes and behaviour</p> <p>Central change point for all general customer information</p>
Data Quality & Metrics	<ul style="list-style-type: none"> • Extent of data quality issues not quantified • Source of data quality issues not well documented 	<p>Established a baseline of current quality to measure future progress</p> <p>Root cause elimination & data remediation efforts to address most serious problems</p>

2. CRM Infrastructure

CRM Infrastructure	Issue 	Resolution
CRM Organization	<ul style="list-style-type: none"> • No clear business and technology owner • Building new organization while leveraging the old 	<p>Established program office with single point of contact for business and technology who had accountability and authority to make timely decisions</p> <p>Established CRM Sustaining organization that coordinated change prioritization and management across multiple business functions</p>
Relationship Management, Workflow, Sales and Service Infrastructure	<ul style="list-style-type: none"> • Inconsistent business functions, minimal process integration 	<p>Siebel CRM Solution introduced and branded as “Optimizer”</p> <ul style="list-style-type: none"> • Optimizer currently services ~ 2,000 business banking and 1,400 users in contact centers and support services. • Optimizer will be available to all appropriate branches, contact centers, support and headquarters employees (approx. 17,000) by early 2004. • Optimizer Key Features <ul style="list-style-type: none"> • Access prospect and customer information, including real-time account balances • Track, qualify and manage opportunities • Track activities and service/ information requests • Manage contacts, calendar and workload • Run campaigns • Access to auto loan decision system, intranet and internet • View sales pipelines at any time • Access timely & insightful customer information

3. Analytics & Decision Environment

Analytics & Decision Environment	Issue	Resolution
Customer Information	<ul style="list-style-type: none"> No central repository for customer information Customer information fragmented through out product centric legacy systems 	Built Analytical Environment that has ~ 3,000 data elements at customer level for analysis, data mining, segmentation, etc.
Predictive Modeling	<ul style="list-style-type: none"> Models were <i>ad hoc</i>; point in time Data begged, borrowed and stolen Limited Reuse Expert statisticians spending too much time sourcing/ extracting data 	Built centralized Decision Environment where all BMO customers are scored monthly using data from Analytical Environment Built new models to move from profit view of customer to combination of current value + attrition risk + future value; Built new Propensity to Buy models to support targeted marketing campaigns
Customer Segmentation	<ul style="list-style-type: none"> Too product centric – find the right customer for the product Customer received inconsistent treatment by channel 	Developed and deployed numerous segmentation models – Client Management Objectives, Sales and Service Segments <ul style="list-style-type: none"> Within each marketing segment, we now have model-based direction on how we should be engaging with each customer
Feedback Loop	<ul style="list-style-type: none"> Customer response and feedback not available in a timely manner 	Established feed back loop from Operational systems and Siebel to allow for overnight batch update of customer activity
MIS	<ul style="list-style-type: none"> No centralized environment for reporting on customer data and feedback 	Via Analytical Environment established MIS infrastructure that allows users to access information in a timely and user friendly manner

4. Campaign Management

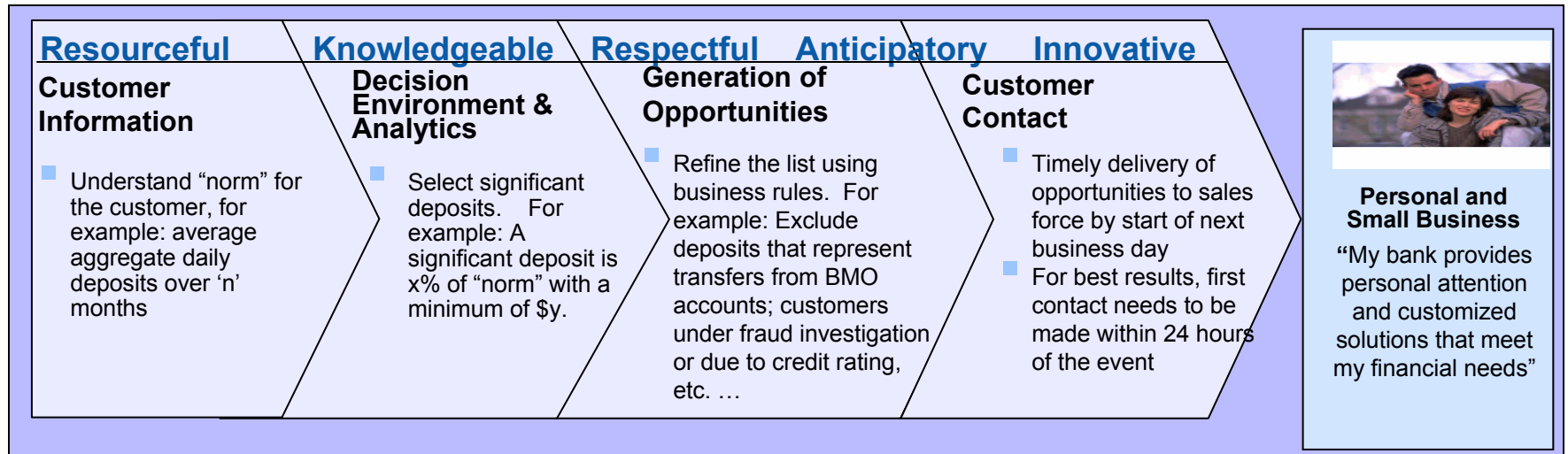
Campaign Management	Issue	Resolution
Campaign Management Infrastructure	<ul style="list-style-type: none"> • 12 year old antiquated proprietary campaign management system • Limitation of tool only allowed BMO to target two levels, i.e. account and customer • Slow cycle time to create & execute campaigns, embed feedback (55 – 60 days) 	<p>Implemented and operationalized Unica Affinium- a state-of-the-art campaign management system that integrated well into the CRM infrastructure</p> <p>Provided campaign management at as many level as required – account, customer, household</p>
Marketing Database	<ul style="list-style-type: none"> • Creation & updates of marketing database were outsourced; Proprietary database did not readily accommodate changes • Database was a snapshot at a certain point in time and did not contain customer history 	<p>Repatriated marketing database from outsourced vendor and integrated into the Analytical environment.</p>
Customer Solutions	<ul style="list-style-type: none"> • Customer received inconsistent treatment by channel • Mass market value proposition 	<p>With richer customer information, segmentation, deeper models each customer was given 3 individualized offers per month; Relevant bundling of products and services based on need</p>
Campaign Measurement	<ul style="list-style-type: none"> • Measurement process was tedious; required manual processes to combine data from various sources 	<p>Automated and integrated measurement processes with analytical environment</p> <p>Implemented measurement analytics to address customer, campaign and offer level metrics</p>

5. Product Decisioning

Products	Issue	Resolution
Pay – No Pay Decisioning (automated overdraft)	<ul style="list-style-type: none"> • Customer overdrawn in one account were penalized despite relationship with bank. • Increased customer complaints and attrition due to charge for non sufficient funds 	Automated overdraft decisions implemented based on customer's comprehensive portfolio, relationship to bank and segmentation
Pre-Approvals for personal lending products	<ul style="list-style-type: none"> • Lack of customer information and customer's relationship with bank limited decision making process. • Minimal interaction and/or lack of timely input on product decisioning with campaign management systems 	Developed and implemented a strategic capability to anticipate customer need for new revolving credit and implement via pre-approval.
Relationship Pricing	<ul style="list-style-type: none"> • Manual input by users based on data from source systems and reports. • Time consuming process to perform what-if analysis on pricing, to assess credit profile and develop final proposal. 	Integrated the existing Relationship Pricing methodology with existing client/ product and customer data as inputs, in order to determine the relative profitability of Business customers and facilitate appropriate pricing decisions. Delivered quality, actionable information to the line , enabling them to conduct richer sales discussions with their customers, and drive more profitable, long-term relationships by facilitating appropriate pricing decisions.

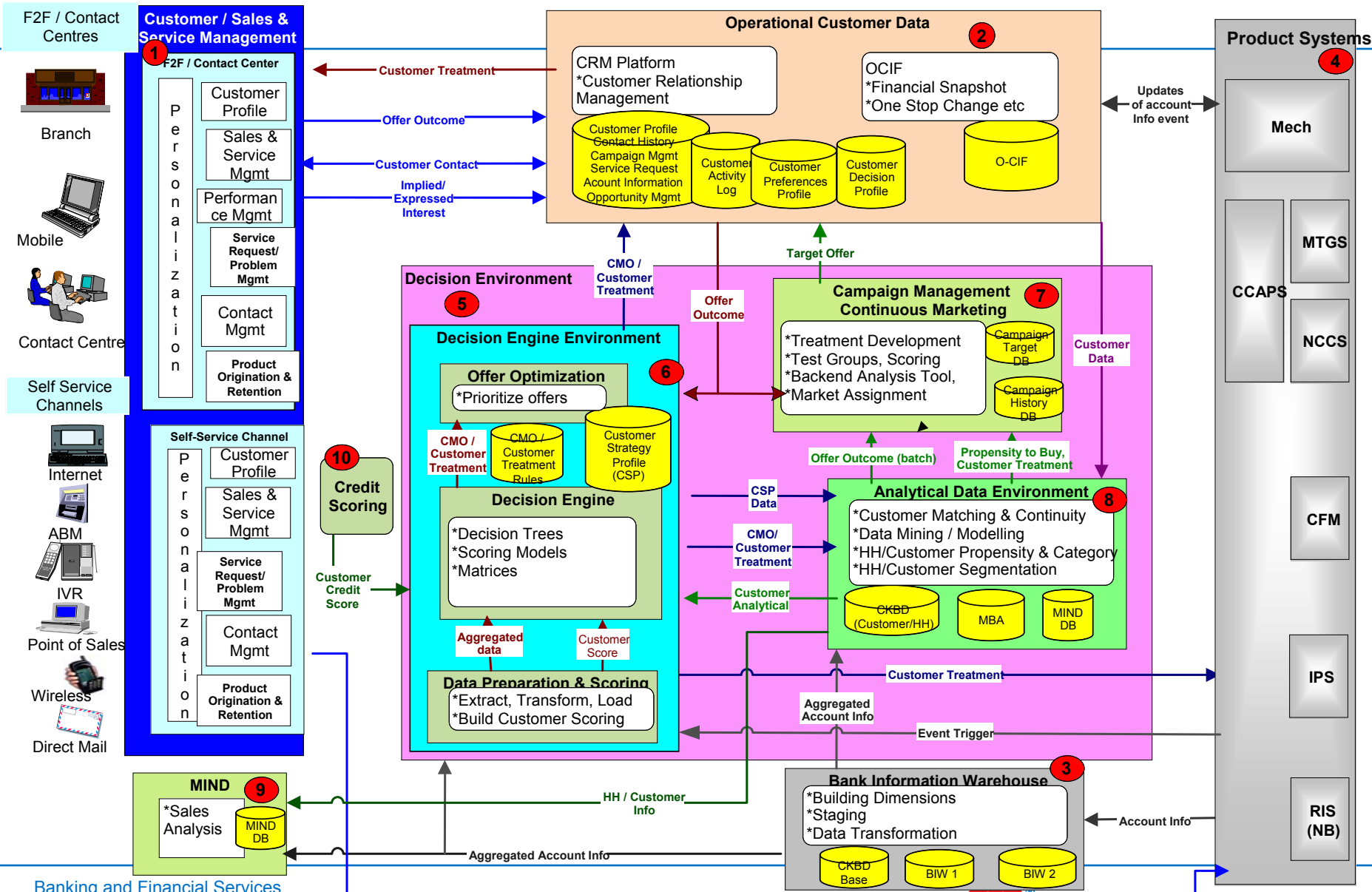
6. Event Triggers

Event Triggers	Issue	Resolution
Opportunities	<ul style="list-style-type: none"> Lost opportunities as existing marketing databases and profitability systems did not capture granular transactional information 	Brought detailed transaction information on a daily basis to enterprise warehouse and analytical environment
Event Detection	<ul style="list-style-type: none"> Product systems detected large transactions to monitor fraudulent behaviour; paper reports sent to branches and relied on staff to take action 	Implemented batch overnight detection process using Unica Affinium that combined customer information from analytical environment to send meaningful leads to front line



Technology View

CRM Target Environment

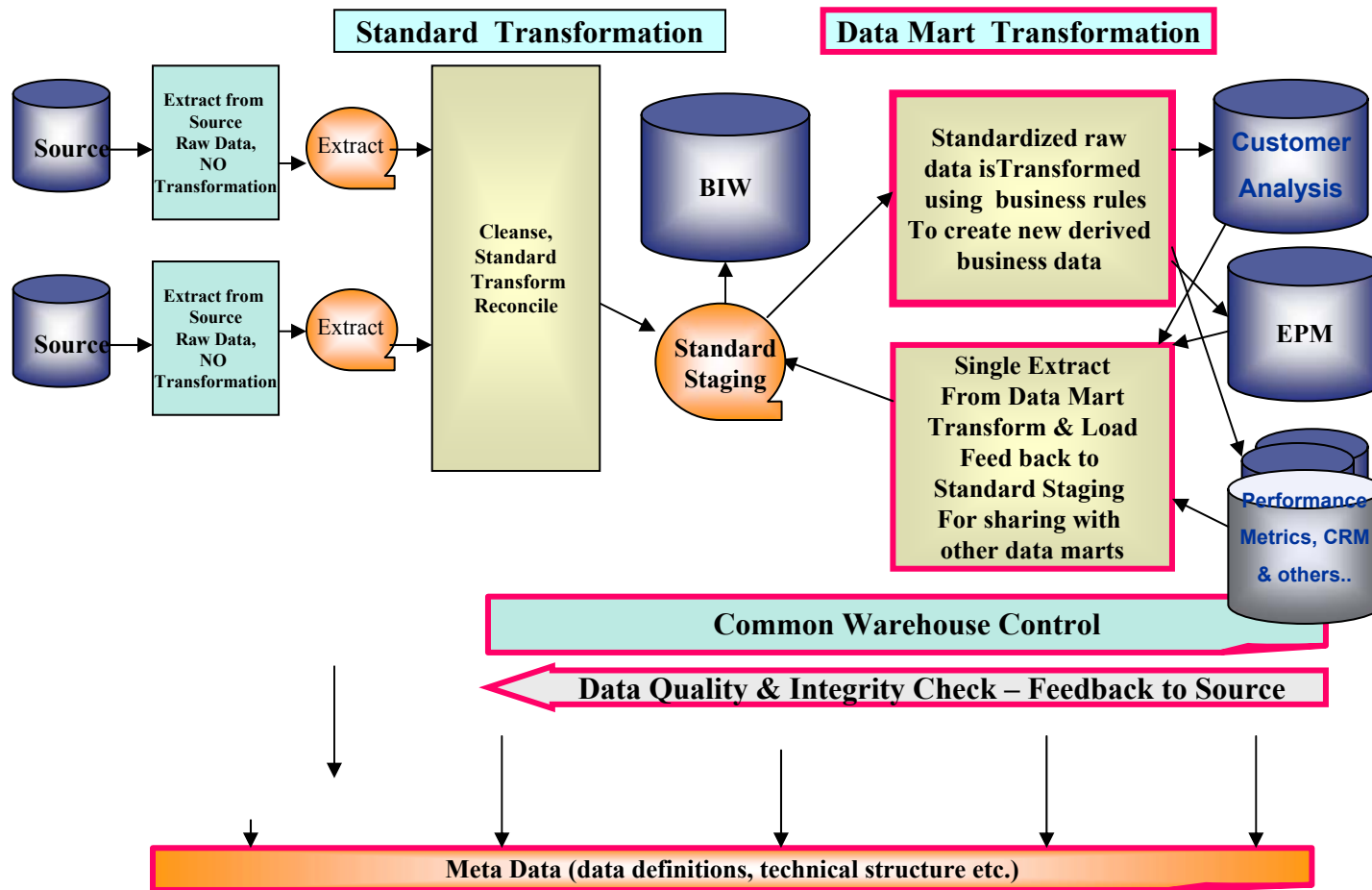


Banking and Financial Services
January 19, 2004


Legend: Component Automated Feed ← Databases

Our integrated Data Warehouse architectural vision captures our logical MIS strategy


Data Governance - Adherence to ETL/ Data Warehouse Methodology, Metadata Standards and Documentation Requirements



Technology Initiatives

Technology	Issue 	Resolution
CRM Platform	<ul style="list-style-type: none"> Multiple sales and service platforms 	<p>Closed the technology gaps by replacing all platforms with one new robust platform. All branches were revamped within one year.</p> <ul style="list-style-type: none"> Standard hardware (IBM), operating system (Windows 2000), directory (Active Directory), browser (Internet Explorer) Robust centralized systems management (Tivoli+) Network bandwidth upgrades New teller application (one to replace many)
Data Quality	<ul style="list-style-type: none"> Data quality issues caused re-runs of processing cycles 	<p>Developed "Common Warehouse Control"; a user-friendly application that automated validation of data quality and process control tests</p> <p>Thresholds and acceptance level identified by user to trap errors and halt processing</p>
Model Scoring & Deployment	<ul style="list-style-type: none"> Models were ad hoc; point in time Models were based on sample of customer base 	<p>Partnered with IBM to deploy Intelligent Miner for Data Scoring Services; all BMO customers are scored every month via centralized decision environment</p>
Campaign Management Infrastructure	<ul style="list-style-type: none"> 12 year old antiquated proprietary campaign management system 	<p>Implemented and operationalized Unica Affinium- a state-of-the-art campaign management system that integrated well into the CRM infrastructure and bank's architecture</p>

Technology Initiatives cont'd

Technology	Issue 	Resolution
Customer and Household Matching	<ul style="list-style-type: none"> Household Matching outsourced and performed on a quarterly basis; information was up to 6 months old Operational CIF continued to address gaps due to data quality issues 	<p>Implemented Trillium to perform household matching for retail customers on a monthly basis; commercial customers on 2004 plan</p> <p>Enhanced customer matching performed to augment gaps in operational CIF – Marketing Customer View created</p>
System Availability	<ul style="list-style-type: none"> Processing cycles required down time for the users 	<p>Implemented innovative Off-line Processing Facility that enabled users to have on-going access to data – 98% of time</p> <p>Benefits:</p> <ul style="list-style-type: none"> Users are isolated from operational problems Enables monthly processing to be completed faster
Metadata	<ul style="list-style-type: none"> No standards for data definitions available Lack of centralized documentation on data definitions, data transformations, etc. 	<p>Implemented Computer Associates corporate wide repository & metadata</p>

Benefits

CRM Benefits

✓ Revenue Generation: multi-million \$ benefits achieved over 3-5 years

- Overdraft handling (based on Client Management Objectives + additional credit analytics)
- Event Triggers
- Siebel CRM benefit
- Various Segmentation driven initiatives

✓ Speed of Delivery to Field

- Reduced from a 55 - 60 day lapse time to 30 days; in the case of Event Triggers – leads are delivered next business day
- Customer information and customer treatments delivered through Siebel interface

✓ Improved length of decision production time

- Householding and customer matching reduced from quarterly to monthly cycle
- Over 40 models are run against full volume of customer base in two days
- Unica campaign management system allows for more sophisticated treatment development in short period of time

✓ Data Quality

- Consolidation of customer data in Analytical Environment, household and customer matching processes provided key input to Customer data quality metrics; facilitated quick hits on CIF data remediation

Futures View

Futures Business View

- **Move out of “Program” mode and into business as usual**
 - CRM will not be a program in 2004

- **Measurement**
 - Leverage improved environments to establish a common Performance Management infrastructure
 - Fundamentally change our information driven management capability

- **Analytics**
 - Leverage analytics to create revenue generating programs

- **Align CRM and other initiatives within a new 5 year umbrella program**
 - Integrating suite of projects currently underway
 - Instill new processes & technologies enabling Client centric delivery
 - Leverage technical underpinnings of Branch, Call Centre, Internet & ABM delivery channels

- **Marketing Operations Management**
 - Establish higher degrees of process standardization and automation to drive greater efficiency and productivity
 - Marketers need to dedicate more time and effort to higher-value marketing processes

Futures Technical View

➤ PMML Vision

- Great improvements in speed to market will be facilitated through much shorter time frames for model development and deployment
- Beta Testing: Deployment of SAS Enterprise Miner PMML based output in IBM DB2 Intelligent Miner Scoring to provide a competitive parallel scoring solution with real time analytic capabilities

➤ Real Time vs. Right Time Event Triggers

- Near real time and real time analytics will enable the detection and quick response to customer attrition threats and identify cross-selling opportunities

➤ Active Data Warehousing

- Active Data Warehousing is driven by increasing demands to support service levels in the areas of performance, availability, and data freshness
- Support real-time analytics to assist in managing the customer relationship at any and all touch points and in understanding the customer as an individual

Questions?

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