Appendix A: Generic Project Planning Management

In this appendix, we will look at an application of Business Resilience System (BRS) for one simple application in a banking enterprise, where BRS is driving customer relationship management (CRM) for retaining existing customer or attracting new customers to become customer.

A.1 Introduction

Customer relationship management (CRM) is a term that refers to practices, strategies, and technologies that companies use to manage and analyze customer interactions and data throughout the customer life cycle, with the goal of improving business relationships with customers, assisting in customer retention, and driving sales growth. CRM systems are designed to compile information on customers across different channels—or points of contact between the customer and the company—which could include the company’s web site, telephone, live chat, direct mail, marketing materials, and social media. CRM systems can also give customer-facing staff detailed information on customers’ personal information, purchase history, buying preferences, and concerns.

Today’s CRM have customer data analytics (CDA) built in them that can reap significant financial rewards for your organization’s sales, marketing, and customer service departments. With so much data to contend with, companies often struggle with making sense of information from customers, public records, and external databases. Luckily, the new software in CRM evaluates the newest sales and marketing tools, making the process easier for IT managers and sales executives.

Today, many businesses such as banks, insurance companies, and other service providers realize the importance of customer relationship management (CRM) and its potential to help them acquire new customers retain existing ones and maximize their lifetime value. At this point, close relationship with customers will require a
strong coordination between IT and marketing departments to provide a long-term retention of selected customers. This paper deals with the role of customer relationship management in the banking sector and the need for customer relationship management to increase customer value by using some analytical methods in CRM applications.

CRM is a sound business strategy to identify the bank’s most profitable customers and prospects and devotes time and attention to expanding account relationships with those customers through individualized marketing, repricing, discretionary decision-making, and customized service—all delivered through the various sales channels that the bank uses. Under this case study, a campaign management in a bank is conducted using data mining tasks such as dependency analysis, cluster profile analysis, concept description, deviation detection, and data visualization. Crucial business decisions with this campaign are made by extracting valid, previously unknown, and ultimately comprehensible and actionable knowledge from large databases. The model developed here answers what the different customer segments are, who more likely to respond to a given offer is, which customers are the bank likely to lose, who most likely to default on credit cards is, and what the risk associated with this loan applicant is.

Finally, a cluster profile analysis is used for revealing the distinct characteristics of each cluster and for modeling product propensity, which should be implemented in order to increase the sales.

In this process, we present series of workflow per use cases.

A.2 Relationship Management that Pays Dividends

Turn Prospects into Clients and Harness the Power of 360° Customer and that is Equal to $$$$ 

• Many CRM solutions on the market today are a little more than electronic Rolodexes, offering no intelligence whatsoever. That’s why we need to build our business around a resilience relationship management platform capable of handling our day-to-day operation with the most optimized and profitable way and in the most efficient way to maintain customer retention and return on investment (ROI) for enterprise.

• Streamline your sales process with Business Resilience Services (BRS) relationship tracking technology that intelligently centralizes multiple prospect communication streams, giving you a holistic view of how your relationship has progressed and where it’s headed.

• An intelligent BRS not only drives an intelligent CRM, it also helps to have an intelligent BCM and BPM and all turn into $$$$ and increase of enterprise revenue.
A.3 Why We Need an Intelligent CRM Driven by BRS

• No industry understands or appreciates the power of numbers more than commercial banking. An intelligent CRM process and reporting helps leaders measure what is working, manage to those measurements, and identify bottlenecks before they disrupt business.
• An efficient standard report should include salesperson activity reports, opportunity-specific activity reports, weighted pipeline, and much more. Managers can also create configurable reports based on what matters to them.
• With increase in technology and functionality in present and near future smartphones, a need for some built-in mobile app functionality is table stakes at this point for any serious CRM provider, but most CRM providers are not truly optimized for any modern mobile browser yet. So we need a CRM to be able to do just that.
• That means that your marketers and sales employees can edit and access existing records, add notes, and notify colleagues of changes to records no matter where they are—with a client, at the office, on the road—instantly, if not real time but at least near real time.
• With an intelligent CRM, you and your team within Wealth Management Group will have full visibility into client and prospect records and be better prepared before, during, and after meetings.

A.4 Where to Now BI: The Future of Business Intelligence and Beyond

**Accenture 2007 Survey of 1000 Middle Managers**

• Managers spend up to 2 h a day searching for information.
• More than 50% of information they obtain has no value to them.
• Fifty-nine percent said they miss information that might be of value to their jobs because they cannot find it.
• Only half of all managers believe their companies do a good job in governing information distribution.
A.5 Increasing Information Volumes

- “Data is growing by a factor of 10 every 5 years, a compound annual growth rate of almost 60%” *IDC*
- This growth rate is likely to accelerate given new and evolving information generating technologies
- Examples: mobile phones, RFID tags, sensor networks, Web information
- May not be practical (or even necessary) to consolidate all of this information into a DW for *operational* decision-making

A.6 Disparity of Information

- Operational business data
  - Maintained by legacy applications, application packages, Web systems
  - Stored in transaction, event, master data stores
- Historical business information
  - Maintained by data integration software and BI applications
  - Stored in a data warehouse, data marts, data cubes
- Business content
  - Maintained by collaborative, content, operational, Web systems
  - Stored in databases, text and rich media files, Web pages, etc.
A.7 Timeliness of Information: The Right Time

A.8 Complexity of Current Decision-Making Systems

- BI/Crm-driven decision-making is limited to users with a good knowledge of the data and combination BRS/BI technologies involved
- Less-experienced users find BI applications and tools difficult to use
- BI deployment still requires significant IT involvement
A.9 The Decision-Making Process

A.11 Bring the Customer into Focus

- How an intelligent CRM driven by BRS using new technology is enabling banks to create a customer-centric experience that transforms customers into advocates for life.
- A 5% increase in customer retention can increase a bank’s profit margin by 25–100%.
- Each year, 12 million bank customers consider switching banks.
- Ninety-six percent of unhappy customers never complain, but 91% of them leave and never come back.
- That’s a dismal thought when you consider that on average a bank spends more than $400 to acquire each new customer, and a mere 5% increase in customer retention can increase a bank’s profit margin by 25–100%.
- CRM for commercial banking, every customer touchpoint becomes an opportunity to connect and strengthen your existing and future relationships (B2C, C2B, B2B).
- Your entire organization can collaborate and gain visibility into the most accurate customer information.
- This connectivity empowers your organization (i.e., WMG) to engage intelligently and consistently with customers, creating lasting relationships.
- To achieve all these, a commercial banking requires a good data mining built on fuzzy logic infrastructure (i.e., feed from multisource vs. single one) to introduce an intelligent BRS function for their CRM variables and others (ECM, BI, KPI, MDM, etc.).
- Present CRM providers are not offering such functionality, and they are all built on Boolean logic database/data mining rather than fuzzy one.
- We need MDM built around fuzzy logic approach to feed right business intelligence in parallel with CRM to process right and accurate information data in hand to manage, for instance, efficient and cost-effective decision-making.
- Utilizing a fuzzy logic approach by weighing the integrity of data that is getting fed into BI and ECM from at least two directions or resources in case of mono monitoring or multidirection and resources in case of stereotype monitoring for management and stakeholder to make right call and decision near real time by flittering trusted date to them.
- In today’s world where the threat is there but its definition has changed, therefore a tool like this will give the management an upper hand.

The BRS/CRM combination offering includes a portfolio of services to help organizations rapidly deploy and utilize business resilience capabilities to have a countermeasure against measure in day-to-day operation.
A.12 Business Continuity Management (BCM)

If you ask why we need such system here is why that is depicted below.

A.13 BRS and CRM Interoperability
A.14 Functional Model of BRS/CRM Offering

- The portal becomes the business dashboard for executives to proactively manage their organization.
- External and internal data sources (ERP, MRP, etc.) combined with the accumulation of CBPs and CBAs create a holistic view of business resilience.

A.15 Solution: A Decision Framework that Provides

- Personalized and self-service *discovery* of and *access* to business information
- An *integrated* view of an organization’s business information:
  - Structured business data
  - Unstructured business content
- Easy *analysis* of business information
- *Delivery* of information via richer and more intuitive Web-based user interfaces
- *Sharing* of business information and expertise
- *Collaborative* decision-making
A.16 Business Resilience Service Driving Enterprise Application Integration

A.17 High-Impact CRM Solutions

How to use data mining with CRM in banking to segment credit card customers

- Credit cards are being used by consumers across age groups and for diverse purposes.
- 300 M credit card transaction per day is taking place globally.
- They buy different products and services according to their purchasing power, habits, standard of living, and lifestyle.
- The frequency of purchases and value of each transaction also varies; customers use credit cards for their utility bills, apparel, daily needs, and occasionally for high-value purchases.
- With e-commerce growing in popularity, having a credit card swiped instead of paying cash is increasing in popularity.
- Customers vary in terms of their payment behavior; there are some who tend to pay the full due amount, while others only pay the minimum amount and carry forward their previous balance.
• Data mining through a banking CRM system can be a critical source for improving profitability from the credit card business. It can also effectively identify trends for cross selling with results from the segmentation exercise of other products. All data related to various segments and their related reports can be hosted on a single centralized system for analysis by numerous associated teams around the globe.

A.18 Use Cases

• Use Case Description Documents
  – Document interactions between system and end users
  – Identified on business process maps

• Use Case Flow Charts
  – Document forms, validation, decision points, and displays between system and end users from UI perspective.
  – Flow charts are function of logical engine rules with Business Rule Management System (BRMS) built-in capability/BRS.

• Use Case Process Map
  – Use case view of business processes
A.19 Use Case Process Map

A.20 Overview of Project Plan to Implement BRS/CRM
A.21 Sample of How We Can Show Timing

A.22 Questions and Answers
Appendix B: Information on Demand

In this appendix, we will present solution around IBM tools that deals with information on demand, which requires as core for the Processing Data Point (PDP) of Risk Atom (see Chap. 1).
Are you Effectively Managing Data over its Lifetime?

“...Information is growing like crazy, we need to get control of it...”

- Ensure accessibility, retention and compliance
- Reduce cost of deploying and managing data

**Information Management Software**
- Database Management servers
- Integrated Data Management tools and solutions

**Supporting Capabilities**
- Storage Management Solutions
- Systems Management & Security
- Data management consulting & implementation services

---

**Data Management Must Drive Competitive Advantage**

*Survey: CIO’s want to strengthen competitive advantage by better managing enterprise data*

- 75% of CIO’s believe they can strengthen their competitive advantage by better using and managing enterprise data.
- 78% of CIO’s want to improve the way they use and manage their data.
- ...but only 15% believe that their data is currently comprehensively well-managed.

**Data management must drive competitive advantage**
- Tailor application data models to support differentiable business processes
- Service-enable data assets for business process agility
- Empower teams to collaborate seamlessly, improve productivity from design to delivery to management

Source: Accenture CIO Data Management Survey 2007, n=487 CIOs
The Value of Integrated Data Management

- Deliver increasing value across the lifecycle, from requirements to retirement
- Facilitate collaboration and efficiency across roles, via shared artifacts automation and consistent interfaces
- Increase ability to meet service level agreements, improving problem isolation, performance optimization, capacity planning, and workload and impact analysis
- Comply with data security, privacy, and retention policies leveraging shared policy, services, and reporting infrastructure

Integrated Data Management Today – Powerful Capabilities

- Rational Data Architect
  - Collaborative data design to improve data quality and enterprise consistency
- Data Studio Developer and pureQuery Runtime
  - Enhance productivity up to 50% while improving code quality and providing expert-equivalent performance for Java data access
  - Administration and security management tools
- Optim Solutions for Data Growth, Data Privacy and Test Data Management
  - Improve performance, control costs, reduce risks
  - Control data growth, streamline test data management, mask confidential data, manage data retention and destruction
  - Speed application upgrades, enable safe application retirement
Integrated Data Management as part of an end to end system for delivering business solutions

Rational software

Tivoli software

WebSphere software

Data Management Improves Performance, Cuts Cost

**TD Bank Financial Group (Canada)**

Client Profile: Banking / Finance, C$14.3 Billion Annually

Success: Data Growth

- Reduced batch processing runtime for Payroll by 25%.
- Realized a cost savings of 50% and reduction in runtime for database utilities.
- Reduced database storage needs by 30% (from approximately 325 GB to 225 GB).

**Corning**

Client Profile: Manufacturing, $3.7 Billion Annually

Success: Data Growth & Compliance

- Improved SCM performance by 80% by archiving high volume tables, reducing overnight processing time from 6.5 hours to 2.2 hours, all while addressing new industry and regulatory standards for HR data retention.

**Bausch & Lomb**

Client Profile: Healthcare Retail, $32 Billion Annually

Success: Data Growth & Portfolio Optimization

- Improved performance by 50% by archiving historical data. Reported estimated savings of $1.5 million in capacity costs, plus additional savings in hardware & software costs, by archiving to sunset several applications worldwide.
Appendix B: Information on Demand

Data Management Boosts Developer Productivity

- **Challenges**
  - Executives must quickly respond to new regulatory requirements, mergers, acquisitions, and evolving customer needs
  - Developers must swiftly make changes to business-critical applications without compromising performance, availability or scalability

- **Solution**: Optim Studio

- **Key Benefits**
  - Developers can explore how workload is executed without the performance and usability challenges encountered in other tools
  - Speeds the development of high-quality applications
  - Reduces development costs by 50 percent
  - Developers and DBAs can easily collaborate to resolve issues quickly
  - Improves developer productivity by 25 to 50 percent

- **Client Value**

> "IBM Data Studio has advanced the ease of developing, debugging and testing stored procedures by leaps and bounds. And by embedding this capability within the tool itself, rather than selling it as a separate product, we’re realizing significant productivity improvements."

Success: Protecting Data Privacy

**About the Client**: $10 Billion Insurance Company

- **Application**: Custom Insurance Applications

- **Challenges**
  - Protecting confidential customer information required by GLB by addressing privacy vulnerabilities in the application development and testing environments
  - Creating realistic "federated" testing environments by extracting test data across complex DB2, Oracle, Informix, IMS and VSAM databases
  - Ensuring valid testing results by retaining the data integrity after sensitive information is de-identified

- **Solution**: IBM® Optim™ Data Privacy Solution

- **Client Value**
  - Mitigated risk of data breaches by implementing a consistent strategy for de-identifying sensitive data in development and testing environments
  - Improved enterprise-wide testing processes by using subsetting and transformation capabilities across applications, databases and operating systems
  - Ensured test validity by using a variety of masking techniques that preserved the data integrity, while propagating the de-identified data throughout the test environment
Mashups & IBM Data Management Deliver Quick Apps

- Mashup Center addresses the “quick applications” dilemma by changing the cost, information availability & TCO factors
  - Allows IT to deliver information access without losing control over the information assets
  - Slices of necessary data can be surfaced in minutes.
  - Security, governance, rate limiting protected
  - Doesn’t require new silos or replication
  - Minimal technical skill required to assemble quick apps
- Mashup solutions can literally be built in hours
  - And it only gets faster from there, since each mashup makes the next one easier and faster to build

Case Study

- **Business need**: Provide real-time, customizable manufacturing information for semiconductor supplier
- **Solution**: Enterprise mashups of information from semiconductor manufacturer’s portal and supplier’s ERP system
- **Benefits**: Reassigned one full-time employee to higher value work; significant decrease in planning and production mistakes; reduced total cost of ownership by 40%

Balance between Flexibility and Control = Immediate ROI

---

Summary – Key Values of Integrated Data Management

- Integrated Data Management Builds on Shared Artifacts
- Integrated Data Management Allows Executives To Set Policy Standards
- Integrated Data Management Allows Design Professionals To Drive Quality and Consistency
- Integrated Data Management Allows Development Professionals To Deliver Quality Software
- Integrated Data Management Allows Administrators To Deploy without Disruption
- Integrated Data Management Allows Administrators To Operate Databases to Meet SLAs
- Integrated Data Management Allows Application Allows Managers To Optimize Systems for Growth
In this appendix, we will look at the future of business intelligence and beyond. This presentation was given by Dr. Claudia Imhoff of Intelligent Solutions, Inc. in 2009, where the author Zohuri was participating.
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

2008 Accenture Study of Executives

Accenture 2008 Survey of 250 Executives

- 57% said that they don’t have a beneficial, consistently updated enterprise-wide analytical capability
- 55% said their decisions rely on qualitative and subjective factors
- 61% said good data is not available for the decisions they are addressing
- 72% are working to increase business analytics usage

It’s Not Getting Any Easier

- Increasing information volumes
- Number and disparity of information stores
- Information quality, accuracy, and consistency
- Timeliness of information
- Complexity of current decision-making systems
- Compliance regulations
- Acquisitions and mergers
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

Increasing Information Volumes

- "Data is growing by a factor of 10 every five years, a compound annual growth rate of almost 60%," *IDC*
- This growth rate is likely to accelerate given new and evolving information generating technologies
- Examples: mobile phones, RFID tags, sensor networks, web information
- May not be practical (or even necessary) to consolidate all of this information into a DW for operational decision making

Disparity of Information

- **Operational business data**
  - Maintained by legacy applications, application packages, web systems
  - Stored in transaction, event, master data stores
- **Historical business information**
  - Maintained by data integration software and BI applications
  - Stored in a data warehouse, data marts, data cubes
- **Business content**
  - Maintained by collaborative, content, operational, web systems
  - Stored in databases, text and rich media files, web pages, etc.
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

**Timeliness of Information: The Right Time**

- **Strategic BI**
  - monthly revenue & cost metrics
- **Tactical BI**
  - weekly sales reports
  - customer lifetime value scores
- **Operational BI**
  - operational call center analytics
  - customer order data

**Complexity of Current Decision-Making Systems**

- BI-driven decision making is limited to users with a good knowledge of the data and BI technologies involved
- Less experienced users find BI applications and tools difficult to use
- BI deployment still requires significant IT involvement
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

And Enterprises Want Even MORE!

Data Sources

Structured data from operational systems
Unstructured content from web & collaborative systems
Real-time events

Business Needs

Data analytics
Content analytics
Event analytics

The magic happens here!

Solution: A Decision Framework That Provides ...

- Personalized and self-service discovery of and access to business information
- An integrated view of an organization’s business information:
  - Structured business data
  - Unstructured business content
- Easy analysis of business information
- Delivery of information via richer and more intuitive Web-based user interfaces
- Sharing of business information and expertise
- Collaborative decision making
BI-Related Marketplace Directions: Technologies

- Discover
  - Search
  - Data profiling
- Access
  - Data federation
  - Data syndication
- Integrate
  - New data sources
  - Light-weight web protocols
  - Data mashups
  - Low-latency data integration
- Analyze
  - Actionable results
  - Event analytics
  - Content analytics
  - Situational analytical applications
- Deliver
  - Rich internet applications
  - Presentation mashups
  - Integration with office products
  - Advanced visualization
- Share and Collaborate
  - Integration with collaboration products
  - Social computing

BI-Related Marketplace Directions: Deployment

- Packaged Solutions
  - Operational and MDM applications
  - BI and performance management applications
- Lower Cost Solutions
  - Open source software
  - Commodity hardware
  - Appliances
  - Software-as-a-service
  - Cloud computing
- These new developments extend rather than replace the existing enterprise BI and DW environment
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

Decision Making Now Involves More Than BI

- Event analytics
- Service & web-oriented architectures
- Business data analytics
- Business content analytics
- Collaborative & social computing

The Solution: A Decision Framework

- Decision intelligence
  - Event analysis
  - Content analysis
  - Tactical data analysis
  - Strategic data analysis
### Types of Analytics

<table>
<thead>
<tr>
<th>Data analytics</th>
<th>Event analytics</th>
<th>Content analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intraday, daily, monthly</td>
<td>Real time, near real time, intraday</td>
<td>Intraday, daily, monthly</td>
</tr>
<tr>
<td>Static data</td>
<td>In-motion data</td>
<td>Static data</td>
</tr>
<tr>
<td>On demand</td>
<td>Event driven</td>
<td>On demand</td>
</tr>
<tr>
<td>Structured queries</td>
<td>Services driven</td>
<td>Search queries</td>
</tr>
<tr>
<td>User centric</td>
<td>User and application centric</td>
<td>User centric</td>
</tr>
<tr>
<td>Manual decision making</td>
<td>Manual and automated decision making</td>
<td>Manual decision making</td>
</tr>
<tr>
<td>Alignment to plans and budgets</td>
<td>Alignment to rules and expertise</td>
<td>Alignment to rules and expertise</td>
</tr>
<tr>
<td>Point-in-time data metrics</td>
<td>Continuous process and stream metrics</td>
<td>Point-in-time content metrics</td>
</tr>
</tbody>
</table>

### Decision Framework: Closing the Loop

![Decision framework diagram](graphic_from_colin_white_of_bi_research)
Appendix C: Where to Now BI—The Future of Business Intelligence and Beyond

Decision Framework: Information Management

Decision Framework: Information Flow*

*See Article titled “Decision Intelligence” by Claudia Imhoff and Colin White, www.B-EYE-Network.com
Using a Decision Framework to Extend BI – 1

- Discover, Access and Integrate
  - Good enough data is okay for some analyses
  - Employ search for less experienced users to discover business data and content
  - Use low-latency DW data integration for intra-day decision making
  - Transform and integrate business content into a DW to supplement existing data

- Analyze
  - Good enough applications are okay for some analyses
  - Use content analytics to enhance data analytics
  - Use embedded BI and event analytics for agile decision making

Using a Decision Framework to Extend BI – 2

- Deliver
  - Use a services architecture to rapidly deploy on-premises and SaaS solutions
  - Use rich internet applications to improve user web interaction
  - Use web syndication and mashups to enhance delivery of results

- Share and Collaborate
  - Integrate the BI system with collaborative and office systems to provide a seamless decision making environment
  - Improve business user interaction by using social computing software to share business information, analytics and expertise
Questions?
Appendix D: SWOT Analysis Worksheet

To help you to carry out your analysis, download and print off the free worksheet page here, and write down answers to the following questions.

D.1 Worksheet

You can make up your own sheet to do your own SWOT question and answers (Fig. D.1).
### Fig. D.1  Worksheet for SWOT

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you do well?</td>
<td>What could you improve?</td>
</tr>
<tr>
<td>What unique resources can you draw on?</td>
<td>Where do you have fewer resources than others?</td>
</tr>
<tr>
<td>What do others see as your strengths?</td>
<td>What are others likely to see as weaknesses?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>What opportunities are open to you?</td>
<td>What threats could harm you?</td>
</tr>
<tr>
<td>What trends could you take advantage of?</td>
<td>What is your competition doing?</td>
</tr>
<tr>
<td>How can you turn your strengths into opportunities?</td>
<td>What threats do your weaknesses expose you to?</td>
</tr>
</tbody>
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