Business Analytics for Data Science

A Case Study
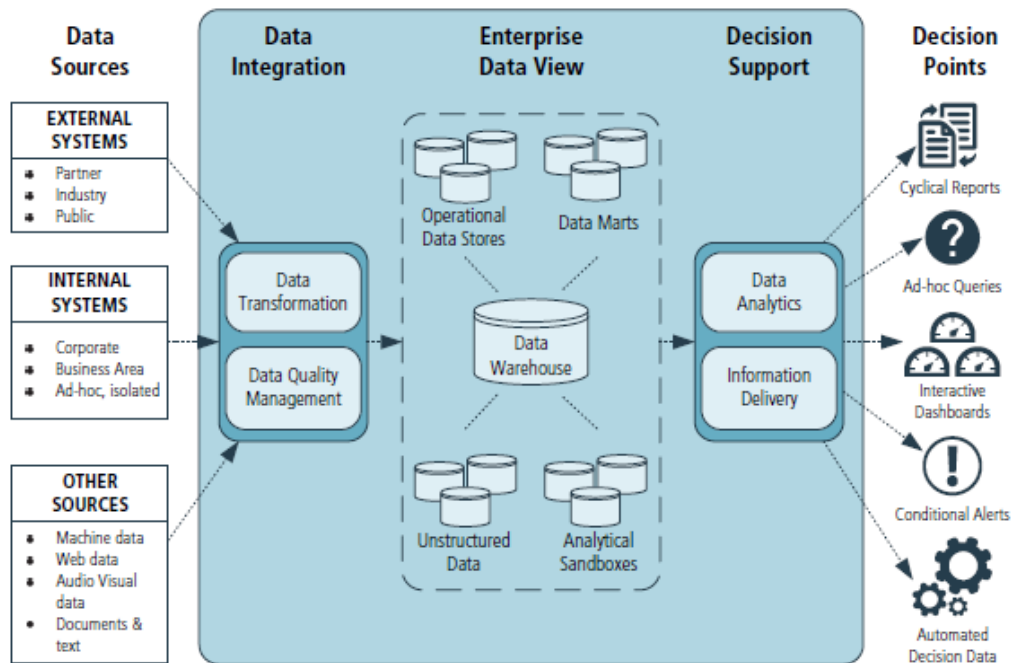
Susan Meyer, Information Governance

Business Analytics:

Unlocking the Power of Data

Business Analytics for Data Science

Business Analysts: What We Do

Figure 11.2.1: Business Intelligence Solution - Conceptual Framework

BI solutions are typically designed to provide insights to decision makers:

Many analysts begin bottoms-up from known data sources

Consider beginning top-down to identify:

- What decisions are being made?

- Can the decision be automated?

- Where are the data silos?

- Where can cycle time be reduced?

- What are the legal data usage rights?

Source: BABOK v3, 11.2 The Business Intelligence Perspective

Business Analysts: Who We Are

	Project Level	**Department Level**	**Enterprise Level**
Generalist	Business Analyst	Business Consultant	Business Architect Strategic Business Analyst Management Consultant
Specialist	Agile Business Analyst Business Rules Analyst Business Process Analyst Data Analyst	Process Owner Product Manager Agile Product Owner	Industry Domain Expert Solutions Architect Process Architect
Hybrid	BA/ Project Manager Information Architect Usability Analyst	Senior Design Analyst	CxO Enterprise Architect

A business analytics career can take you to the C-suite

MasterCard

Business Analytics: Data Science Credentials

IIBA International Institute of Business Analysis™

HDP Developer: Apache Pig and Hive

SAS Global Certification program

SAS Certified Statistical Business Analyst

SAS Certified Visual Business Analyst

informs

Certified Analytics Professional

MasterCard

A Business Analytics Challenge:
Build a cross-border ATM fraud solution in matter of months

A fraud liability shift introduced in fall 2013 meant that US banks that had **not** converted their ATM's to support EMV chip cards were now liable for fraud.

EU cards were being skimmed and used in the US, primarily in eight major metropolitan areas.

MasterCard

The Solution: A Fraud Rules Engine

The business analytics team analyzed 2 years of cross-border ATM data and solved a number of critical data integration challenges:

- Developed business rules to match reported fraud transactions to the original ATM transactions

- Developed business rules to match different ISO messages used in US and EU regions
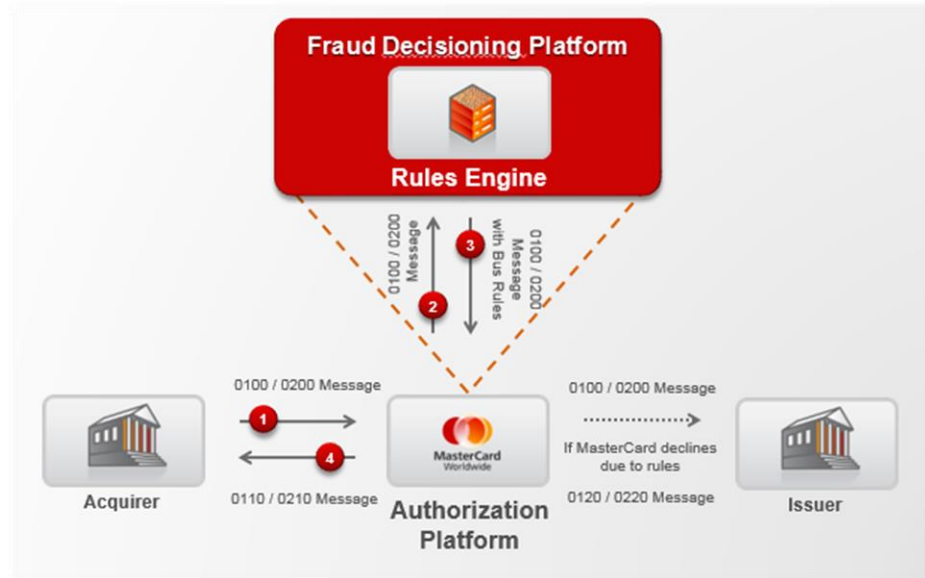
Rules analysis proved that the only feasible strategy was to build a network-based fraud scoring service

Our Methodology
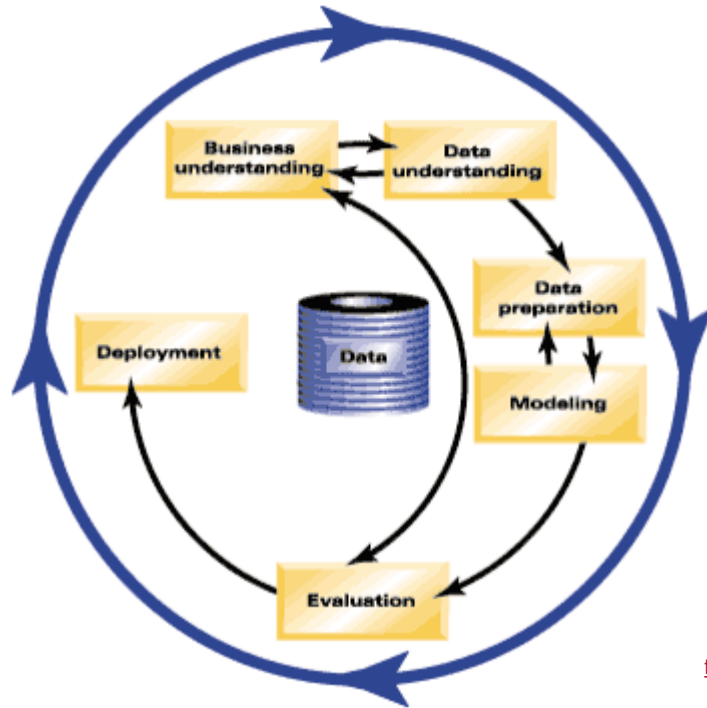
Yes, we used CRISP-DM

…It still works

…. It aligns with Agile

Telling the Story with Data Visuals

Fraud rules offer the challenge of explaining a complex set of algorithms to customers

But the model development process offers abundant historical and simulation data to support evidence-based threshold selection

Fraud Rule Detection Rates

Current Threshold vs. Lower Thresholds

0.75% Genuine   2% Genuine   4.75% Genuine

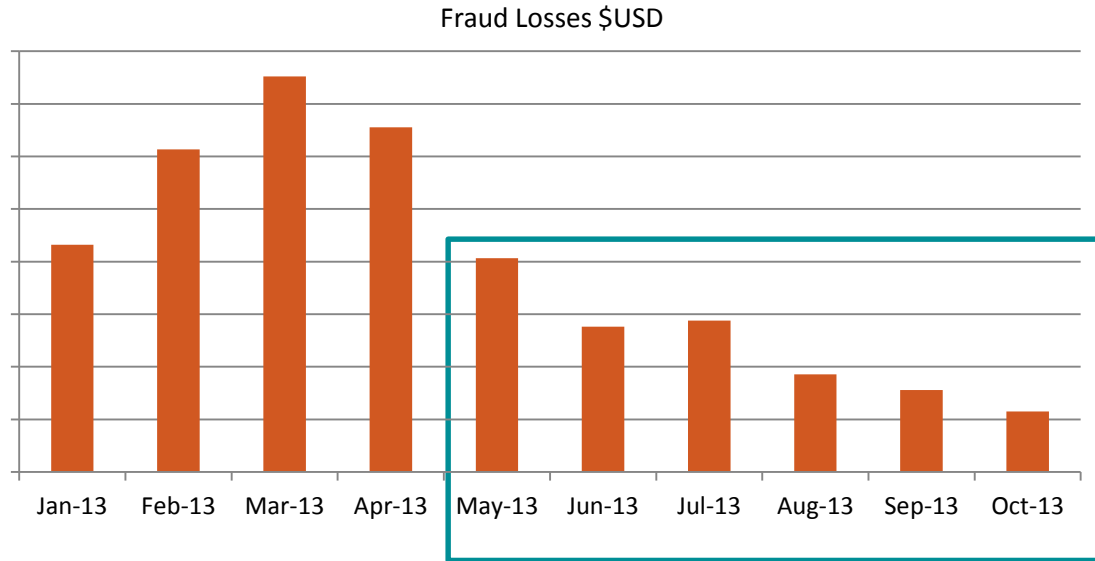<1:1 TFPR   1:1 TFPR   2:1 TFPR

■ TDR   ■ VDR
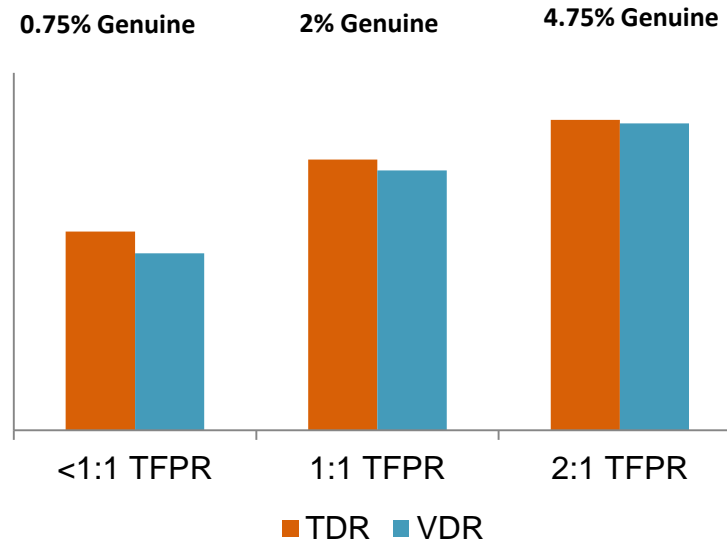
Estimated customer performance reports were obtained from blind test data results

Results for the blind test months of Nov – Dec 2012

MasterCard Model Performance Report, Mar 2013

TDR=Transaction Detection Rate, **VDR**=Value Detection Rate

Fraud Rule Impact:
A 65% Decrease in ATM Fraud

Fraud Losses $USD

Fraud dollar volume dropped by 65% in two acquiring regions, observed through background simulation (A/B testing)

March 9, 2016   Business Analytics for Data Science   ©2016 MasterCard. Proprietary
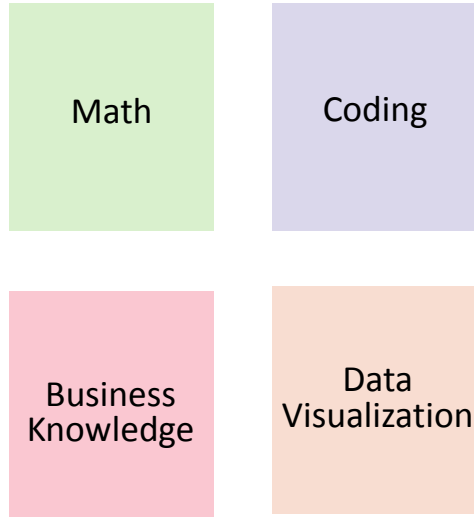
Result: ROI and Recognition

- Satisfied ATM acquiring customers
- Negligible impact on EU cardholders
- Intellectual property / patents
- CEO / CIO level awards
- Spurred similar products, now generating significant revenue

You & your teams could be enjoying a similar win!

Business Analytics for Data Science

Math	Coding

Business Knowledge	Data Visualization

- As business analysts, we play a key role in data science teams, contributing:

    – Precise knowledge of relevant data sources

    – Creative approaches to data mashups

    – Ability to tell the story to customers & senior management

    – Product development perspective

MasterCard