Managing Business Rules and Information Quality across an Extended Enterprise

ABSTRACT

Mark Pettit will present how Freddie Mac, the government-sponsored enterprise that guarantees mortgages originated in the United States, is applying decision modeling and building decision services to standardize transactional processing and improve information quality across the primary and secondary mortgage markets in the United States.

BIOGRAPHY

Mark J. Pettit
Vice President, Operations Shared Services
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Mark J. Pettit was appointed Vice President, Operations Shared Services in 2004. In this position, Pettit is responsible for an organization that delivers timely and accurate contract, business rules, accounts payable and accounts receivable (AP/AR), application controls and reconciliation services across Operations and to identified business partners across Freddie Mac.

Previously, Pettit served as Vice President, Single Class Issuance. In that position, Pettit was responsible for development and implementation of Freddie Mac single class securitization strategy. Pettit created securitization guiding principles and implemented securitization policies, as well as being responsible for new mortgage-related securities products. Pettit graduated from Hobart College with a Bachelor of Arts in Economics.

How Freddie Mac is Using Decision Modeling to Improve Our Data Quality

Mark Pettit

Operations Management Group

July 15, 2010

The Opportunity

- The mortgage industry is adopting the MISMO 3.0 data standards – the data set we receive for loan purchase will move from 140 to 470 loan data attributes

- The potential to perform analysis on the loan attributes pre-purchase will improve our data quality

- However, the increase in the data set will necessitate an increase in the number of business rules to be managed

- This in turn will require more complicated business analysis and a more agile change management process

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Rules/Decision Maturity Models

- We used KPI's rules and business decision maturity models to understand the different levels of maturity for analysis and change management

- After analyzing the maturity models and the capabilities needed to leverage the MISMO 3.0 data set we set our interim maturity target at 2/Agile

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Business Decision Maturity Model

Characteristics of a level 2/Agile maturity:

- **Business Value** – Risk of loss greatly reduced; business change becomes possible through automated analysis.

- **Business Architecture** - Project level process and business decision standards established within broader architectural standards

- **Business Stewardship** – Integration of business decisions with use cases and process flows with business metrics

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The Decision Model

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- We chose KPI's Decision Model as our rules management framework

- The tabular format and the grouping of rules into decisions was very intuitive to the business

- The Decision Model's principles and normalization rules give us confidence we can get repeatability and consistency amongst business analysts when performing rules analysis

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The Decision Model (Continued)

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Rule analysis is greatly enhanced. The ability to navigate our rules framework top down allows us to focus on the rules that are relevant to the policy changes.
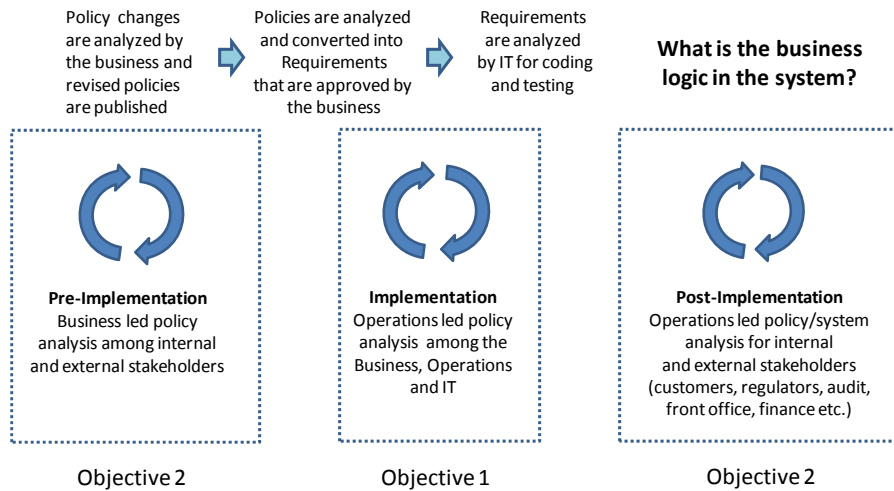
Business Process	Loan Purchase Eligibility
Product	30 Year Fixed Rate
Decisions	LTV Compliance
Rule Families	Base LTV Calculation
Rules	If this then, Base LTV = X/Y

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Our Project Objectives

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1. **New Implementation Process** - Implement an enhanced change management process that would allow us to increase our agility in managing our business rules

2. **Business Rules are a Business Asset** - Change the way we think about business rules – an asset of the business

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Current Process

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Policy changes are analyzed by the business and revised policies are published

Policies are analyzed and converted into Requirements that are approved by the business

Requirements are analyzed by IT for coding and testing

What is the business logic in the system?

Pre-Implementation
Business led policy analysis among internal and external stakeholders

Implementation
Operations led policy analysis among the Business, Operations and IT

Post-Implementation
Operations led policy/system analysis for internal and external stakeholders (customers, regulators, audit, front office, finance etc.)

Objective 2

Objective 1

Objective 2
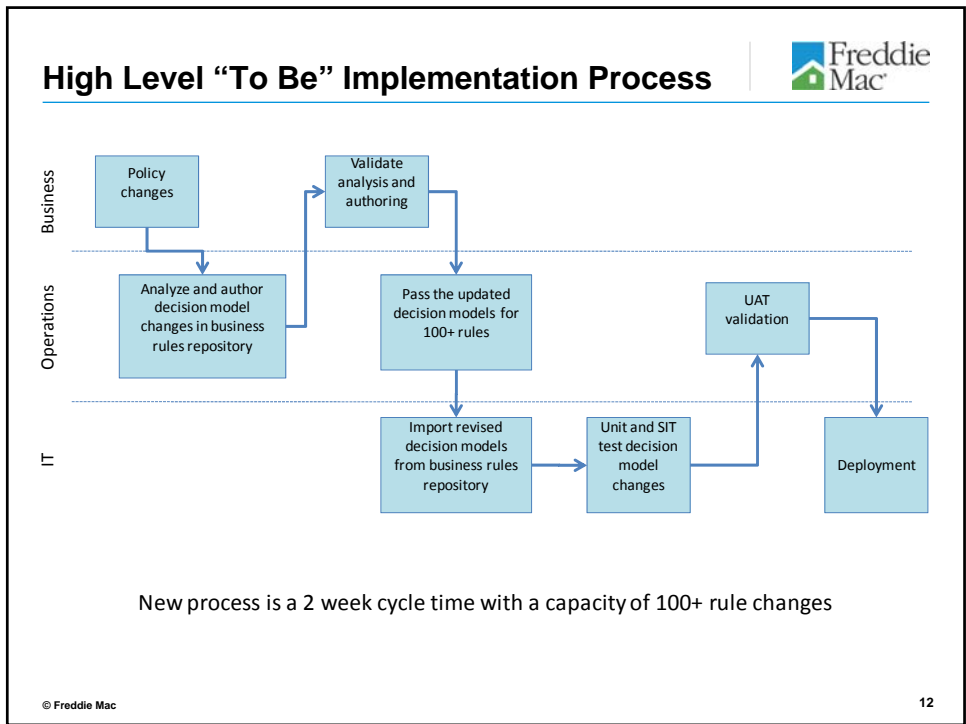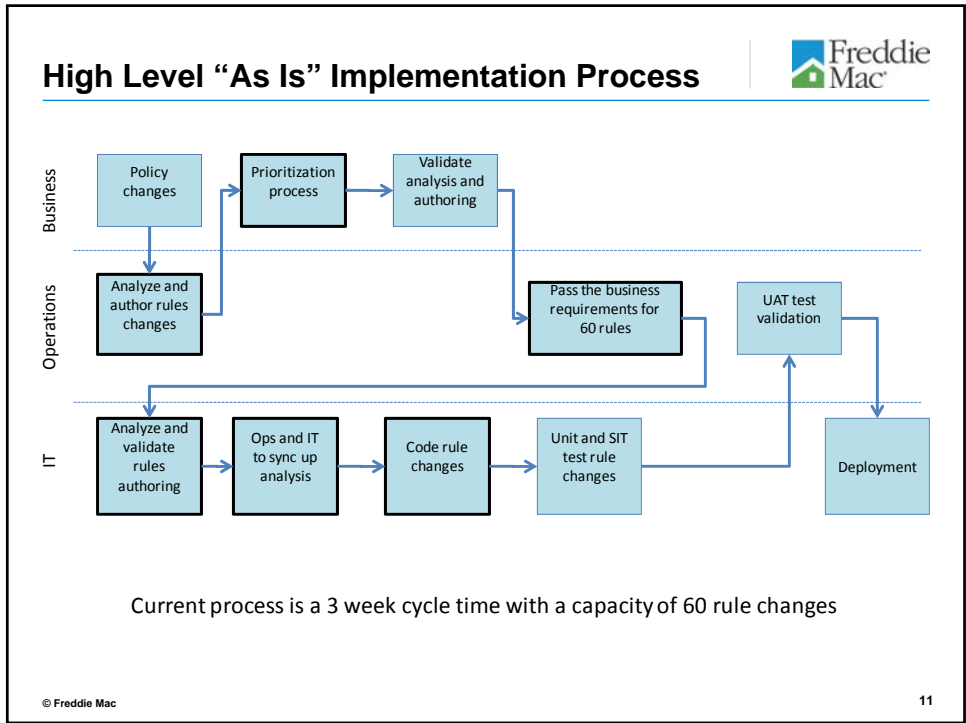
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New Implementation Process

- Our business and operations teams have spent the last nine months creating a baseline of our core rules into a decision model based on MISMO 3.0

- As a result, we are confident the rigor of the Decision Model will greatly enhance our ability to analyze the rules with the greatly expanded MISMO 3.0 data set

- In addition, the structural integrity of the Decision Model makes the technology implementation straightforward

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New Implementation Process (Continued)

- IT and Operations have agreed to use our decision model as business requirements for business logic changes – this will greatly speed up the change process

- IT has created an Enterprise Decision Service (EDS) that will import our decision model out of our repository / rule book with minimal IT involvement

- The EDS will leverage our existing BRMS package and will be utilized by additional decision-intensive processes in the future

- In addition, the use of a COTS BRMS solution will allow us to take advantage of additional capabilities over time, such as enhanced testing and decision-warehousing capabilities

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High Level "As Is" Implementation Process

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Business

- Policy changes
- Prioritization process
- Validate analysis and authoring

Operations

- Analyze and author rules changes
- Pass the business requirements for 60 rules
- UAT test validation

IT

- Analyze and validate rules authoring
- Ops and IT to sync up analysis
- Code rule changes
- Unit and SIT test rule changes
- Deployment

Current process is a 3 week cycle time with a capacity of 60 rule changes

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High Level "To Be" Implementation Process

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Business

- Policy changes
- Validate analysis and authoring

Operations

- Analyze and author decision model changes in business rules repository
- Pass the updated decision models for 100+ rules
- UAT validation

IT

- Import revised decision models from business rules repository
- Unit and SIT test decision model changes
- Deployment

New process is a 2 week cycle time with a capacity of 100+ rule changes

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Business Rules Are a Business Asset

- Pre-implementation

  » We have some examples of changes in the way we think about our business logic pre-implementation

    – The policy owners deciding it would be easiest to use our decision model to highlight policy changes

    – Other project teams engaging with us to understand the Decision Model and how it can help them

    – Customers are showing a desire to share business rules upfront

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Business Rules are a Business Asset (Continued)

- Post implementation

  » We have a rule book / rule repository that documents the business logic in our loan purchase process. It is in the decision model framework, approved by the business and under change management.

  » Downstream consumers of our data will be able to see the data quality decisions that are executed on every loan. In addition, they will be able to see the results of that decision at loan purchase. This level of transparency will reduce the multitude of data quality validations that are performed by data consumers.

  » Downstream data consumers will be able to request decision model changes that will improve data quality at loan purchase

  » Business users have started to think about policy changes through the Decision Model framework. This speeds up operations' analysis substantially

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Conclusion

- We are confident the Decision Model will enhance our ability to analyze and implement rules changes

- However, we are not at the finish line – MISMO 3.0 is effective on 9/1/2011 and there is a lot of work to operationalize our new rules architecture, The Decision Model.

- We are starting to see folks treat our rules as an asset. They are seeing the benefits of consistently documenting our business logic.

- The achievement of objective number 2, rules as a business asset, requires a multiyear effort to change how people think about rules….

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