Upgrading Business Rules at Freddie Mac – A Case Study

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Business Rules Management
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The Issue – Legacy Rules Mgmt

- Legacy rules are stored in requirements documents and translated into programming code.
- Our Business partners have no practical means of viewing current rules when considering change.
- Change is time consuming, making scope of change small for a given “release”.
- Benefits of rule re-use are largely unachievable.
- Impact Analysis can be difficult as the rules become scattered throughout a process and often duplicated.
The Issue – Legacy Rules Mgmt (cont’d)

If-then statements are difficult to analyze for consistency throughout larger rule sets…

<table>
<thead>
<tr>
<th>ID</th>
<th>Rule</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If The DTI is greater than X% AND DTI is not NULL AND Government Insurance Type is XXXX AND Ref code is not XXXX AND AUS Indicator is equal to “XXXX” AND LP Key Number is present and less than or equal to XXXX AND the SCC specified on the loan is not in (XXXX) or (XXXX)</td>
<td>This loan exceeds the maximum allowed Debt to Income Ratio.</td>
</tr>
</tbody>
</table>

When rules are not properly organized within a business process, they become a nightmare to manage…
The Solution – Adopt a New Rules Management Framework

- Our new Rules Management framework is focused on four high-level tenets:
  - Process and Rules should work together, smartly
  - Framework should be Business friendly
  - Enhanced Governance
  - Implementation should be more agile
Rule Changes Should Not Require Process Changes

- Understanding of how a business process *should* work
- Where do the decisions happen?
- Separate the What from the How

**Before**

**After**
Business Friendly Framework

- Logic is Policy Owner approved and understood
- This is achieved via a business friendly Rules framework

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Conclusion</th>
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<tbody>
<tr>
<td>Person Employment History</td>
<td>Person Mortgage Situation</td>
</tr>
<tr>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Good</td>
<td>Poor</td>
</tr>
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<td>Poor</td>
<td>Poor</td>
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Enhanced Governance

- Version control
  - Certain decisions change more frequently than others
- Centralized Data Glossary
  - View of data across the enterprise
- Robust testing functionality
  - Ease of scenario creation, traceability in documentation
## Rule Repository & Authoring Tool

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Management of logic at a decision level</td>
<td></td>
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<tr>
<td>Single, technology-independent repository of business logic</td>
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<tr>
<td>Simple structure in business terminology provides clarity</td>
<td></td>
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<tr>
<td>Workflow enables approvals throughout multiple business areas</td>
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<tr>
<td>Extensive traceability to policy via storable source documentation</td>
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<tr>
<td>All new data must be approved before a rule can be finalized</td>
<td></td>
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<tr>
<td>Tool ensures completeness and full integration with process and IT</td>
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<tr>
<td>Single point of truth for both business and IT</td>
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</tbody>
</table>
Agility in Implementation

- Once built, all rules are configurable
- Rule re-use is prevalent
- Manage deployments, not releases
- Supports custom context
- Implementation dates are flexible
Success!!

- We have a few success stories already…
  - Implemented our new rules framework with two projects
  - Currently working on three projects leveraging our new rules framework
  - Several more projects are in the exploratory phases, where we are using process discovery and proofs-of-concept to determine the right fit
Business Benefits

- Transparent: Logic ties back to business motivation (Policy)
- Independent of Process flows: Business process models and decision models can be modified independently
- Consistent: Methodology ensures different analysts consistently organize requirements
- Technology Independent: Decision logic can be implemented in any application
- Reuse: Rule families can be reused in multiple decisions
- Uses Business language: Uses business friendly terminology to organize logic into a business friendly framework
Challenges & Lessons Learned

- Always conduct a process discovery exercise before building rules
  - Cramming new rules into an existing process may create inefficiencies
- Do not hard code business logic
  - It might save time in the short term, but it will cost time in the long term
- Managing high volume of small decisions is more optimal than managing low volume of large decisions
  - Small decisions are easier to analyze and change
- Invest time and energy in Policy Owners
  - Educate them
  - Their support and enthusiasm is key