What Challenges Do We Face Today?
Time to Market

• Goals
  – Reduce cost of product implementation
  – Reduce introduction time
  – Provide greater flexibility
Reduce the Cost of Doing Business

• Goals
  – Increase Operational Efficiency
  – Reduce Redundancies
  – Leverage Limited Knowledge Base
How do we get there?
Product Configuration Tools

• What is a Product Configuration tool?
  – Configurable Products
  – Product model
  – Product configuration
Product Configuration Tools

• Where is the tool being used?
  – Websites
  – Manufacturing
  – Aerospace
  – Telecommunications
  – Customer Relationship Management (CRM)
  – Insurance
Product Configuration Tools

• How does the tool work?
  – Expert systems and AI
  – Goal Seeking systems

• Configurable products characteristics
  – Set of inter-dependent parameters
  – Each parameter consists of set of values
  – User must choose
  – Goal is functioning product
  – Collection of rules for inter-dependencies
Product Configuration Tools

• Mathematical background
  – Product model is precise description - parameters and dependencies
  – Parameters are represented as variables $x_1, \ldots, x_n$
  – Set of possible values represented by sets $D_1, \ldots, D_n$
  – Dependencies are list of rules $\emptyset_1, \ldots, \emptyset_n$

• Product Configuration task
  – Goal is functioning product
  – Guided search
  – User presented valid list of values for a parameter
  – User must choose
  – Tools are based on constraint propagation techniques
Product Configuration Tools

• Want to learn more?
  – Bei Yu and Hans Jørgen Skovgaard
    • A configuration tool to increase product competitiveness
  – Gartner Group
    • Product Configurators: New Tech for Insurance Marketplace
    • Research Note, November 2001

Gartner Research states:
“…, approximately 40 percent of Type A insurers in the United States will purchase or build new product configuration capability by year-end 2004 (0.7 probability).”
Product Configuration Tools

- How does the tool work for insurance products?
  - Multi-user, central calculation repository
  - Product model
  - Multi-platform
Product Configuration Tools

• How will it help you and your company?
  – Reduce costs
  – Reduce time
  – Provide flexibility
  – Increase efficiencies
  – Reduce redundancies
  – Leverage knowledge base

Gartner Research states:
“Competition is driving insurers to quickly create and launch new insurance products, often without the necessary supporting infrastructures. New technical solutions, such as product configurators, can assist.”
Product Configurator Background

• What is it?
  – A self-documenting portable business rules and calculation engine
  – Integrated testing tool
  – Used by business users
• Developed in Europe by firm known for insurance expertise
• In production for 8 years
• Primarily used in Europe as product builder and illustration engine; moved to administration
• Introduced in U.S. Marketplace 2000
Rules and Calculations - Multiple Languages - Multiple Systems

Automate Edits/Rules, Quote Values and Calculate Charges, Other Rules and Calcs.
Rules and Calculations - Defined Once - Deployed to Multiple Systems

- Web-based Quoting
- Illustration System
- Contract Documents
- Payouts
- Contract Administration
- Fund Administration
- Actuarial Systems
- Tax Systems
- Miscellaneous Others

Automate Edits/Rules, Quote Values and Calculate Charges, etc.
Prod Conf

Power to develop products, rules and/or calculations in hands of business expert

Prod Conf

Eliminates redundant tasks of defining edits, rules and calculations to multiple systems

Prod Conf

Reduces costly and time-consuming modifications

Prod Conf

Deployed across Enterprise on multiple platforms
Configurator Product Suite

- Product Workbench
- GUI Designer
Product Workbench

• Visual user interface to create rules and calculations
• Many built-in functions
• Ability to define complex rules, calculations and iterative functions
• Self-documenting with print facility
• Built-in testing facility
  – Test each function independently
  – May be stored/run for regression testing
  – Mass test utility
• Model is platform independent, system independent
Product Workbench

- Performed by business experts
- Models may be included in other models
- Workbench may be used to model any rule or calculation – is not designed for or limited to insurance
- Simple self-install
GUI Designer

- Optional Graphical User Interface tool for use with Workbench
- Design screens for stand-alone systems and testing
- Synchronized with Workbench
- Complete screen design
  - Standard functions
  - Multimedia
- Deploy model as stand-alone application
Product Configurator Potential Usage

- User interface rules processing and validation
- Underwriting rules or code assignment rules
- Billing or Claims calculations and rules
- Rating engine
- Illustrations and quotations
- Contract document preparation
## Product Configurator Benefits

<table>
<thead>
<tr>
<th>Business Requirement</th>
<th>Configurator Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase your Speed to Market</td>
<td>Reusable rules and calculations</td>
</tr>
<tr>
<td>Improve Operational Efficiency</td>
<td>Single model library for all systems</td>
</tr>
<tr>
<td>Centralize creation, modification and maintenance</td>
<td>All lines of business</td>
</tr>
<tr>
<td>Simplify Coding and Testing</td>
<td>Flexible, easy to use tool</td>
</tr>
<tr>
<td>Decrease Cost of Modifications</td>
<td>Multi-platform deployment and Self-documenting</td>
</tr>
<tr>
<td>Easy to Use</td>
<td>Puts the power to modify in hands of experts</td>
</tr>
</tbody>
</table>
Product Configurator US Deployment

• Strategic technology in CSC systems
  – New business and Admin systems
  – OFAC and AML programs
  – Health product line
  – P&C solutions
  – Fraud detection

• Other initiatives:
  – Suitability program
  – Commission systems and Payout Systems review
  – Illustrations Starter Kit
Admin System Proposed Integration Points

• UL/VUL Guidelines, 7 Pay Premium and CVAT
  – Present value model
  – Net Single premium model

• Joint Survivor (Frazier) CIO Dynamic Calculations
  – Blended rate model
  – Broken heart adjustment is included

• Monthliversary Charge Order
  – Flexible re-order processing
  – Corridor, rider and benefit, net amount at risk

• Surrender Calculations
  – Expense allowances
  – Free Out
Admin System Proposed Integration Points

• Target Premiums
  – MAP- minimum lapse premium
  – Maryland protection period

• Reproposals – inforce forecasts
  – Support any product models

• Data Build Glass Box
  – Interface to Data models
Product Configuration Tools

By Rob Belfer, FSA, MAAA
CSC Financial Services Group