



Actuaries' Club of the Southwest Meeting June 2003

Product Configuration Tools



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What Challenges Do We Face Today?



Time to Market

- **Goals**
 - *Reduce cost of product implementation*
 - *Reduce introduction time*
 - *Provide greater flexibility*

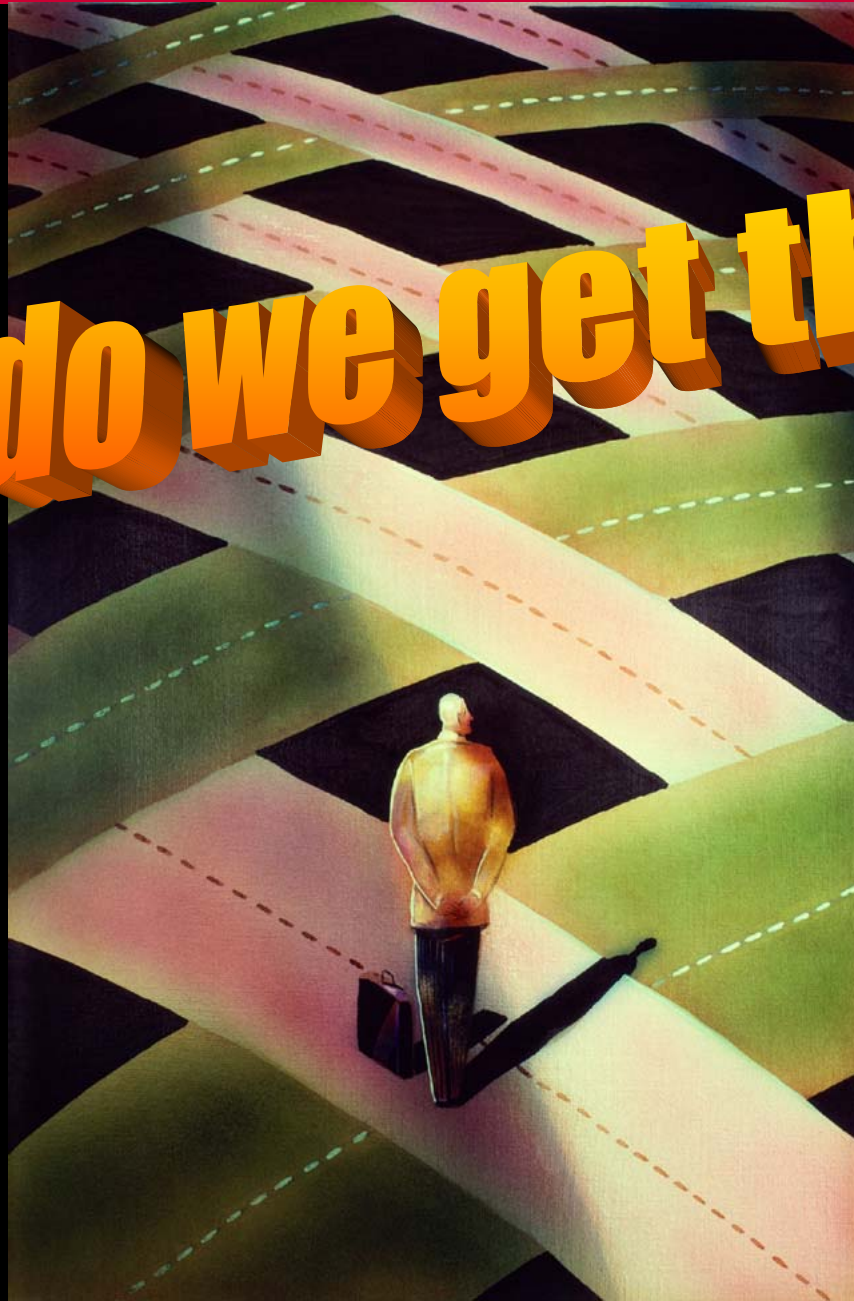


Reduce the Cost of Doing Business

- **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, \dots, x_n
 - Set of possible values represented by sets D_1, \dots, D_n
 - Dependencies are list of rules $\emptyset_1, \dots, \emptyset_n$
- **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**
 - ***IEEE Intelligent Systems*, 13(4):34–41, July 1998**
 - **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

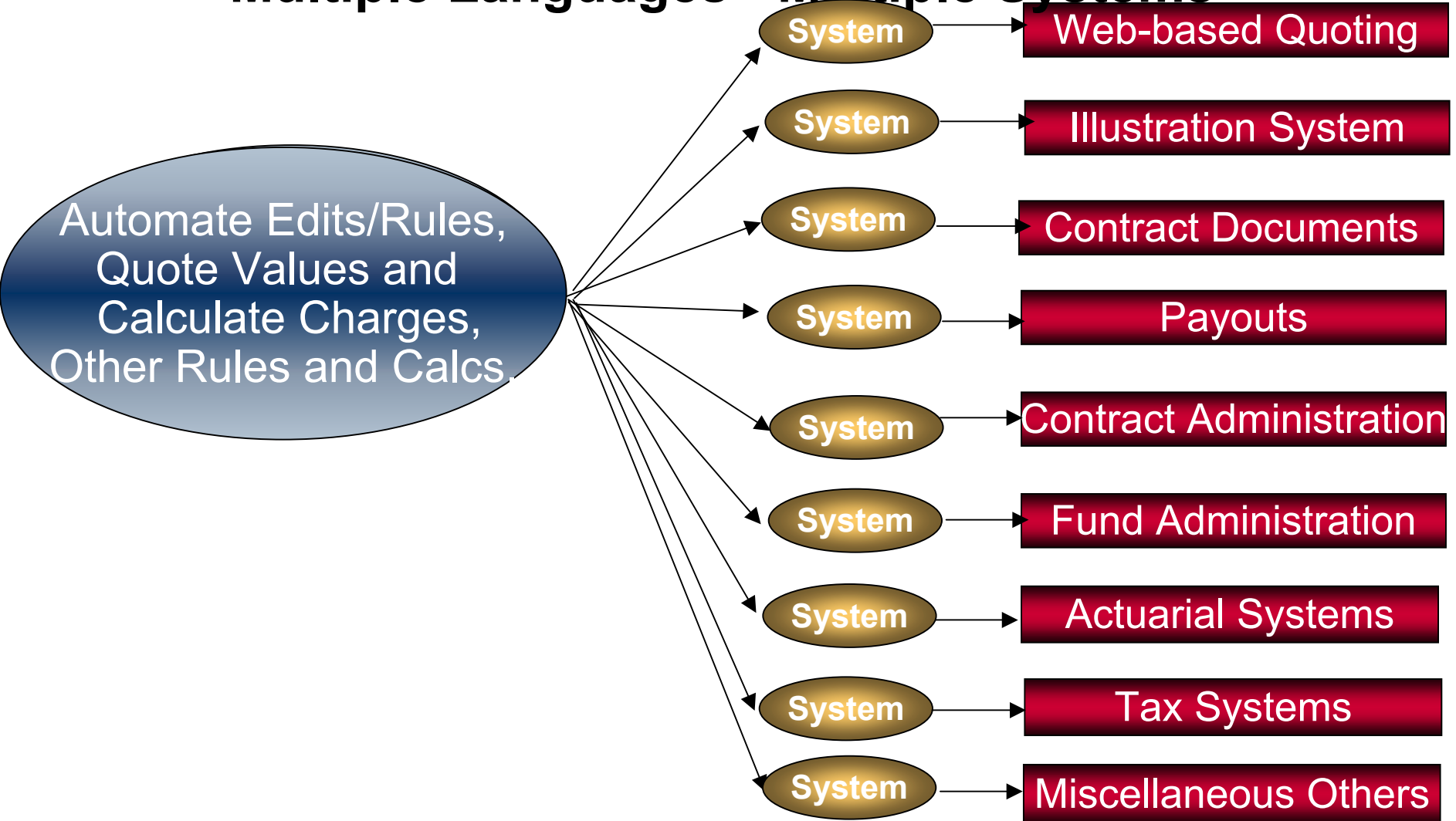
Gartner Research states:

“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.”

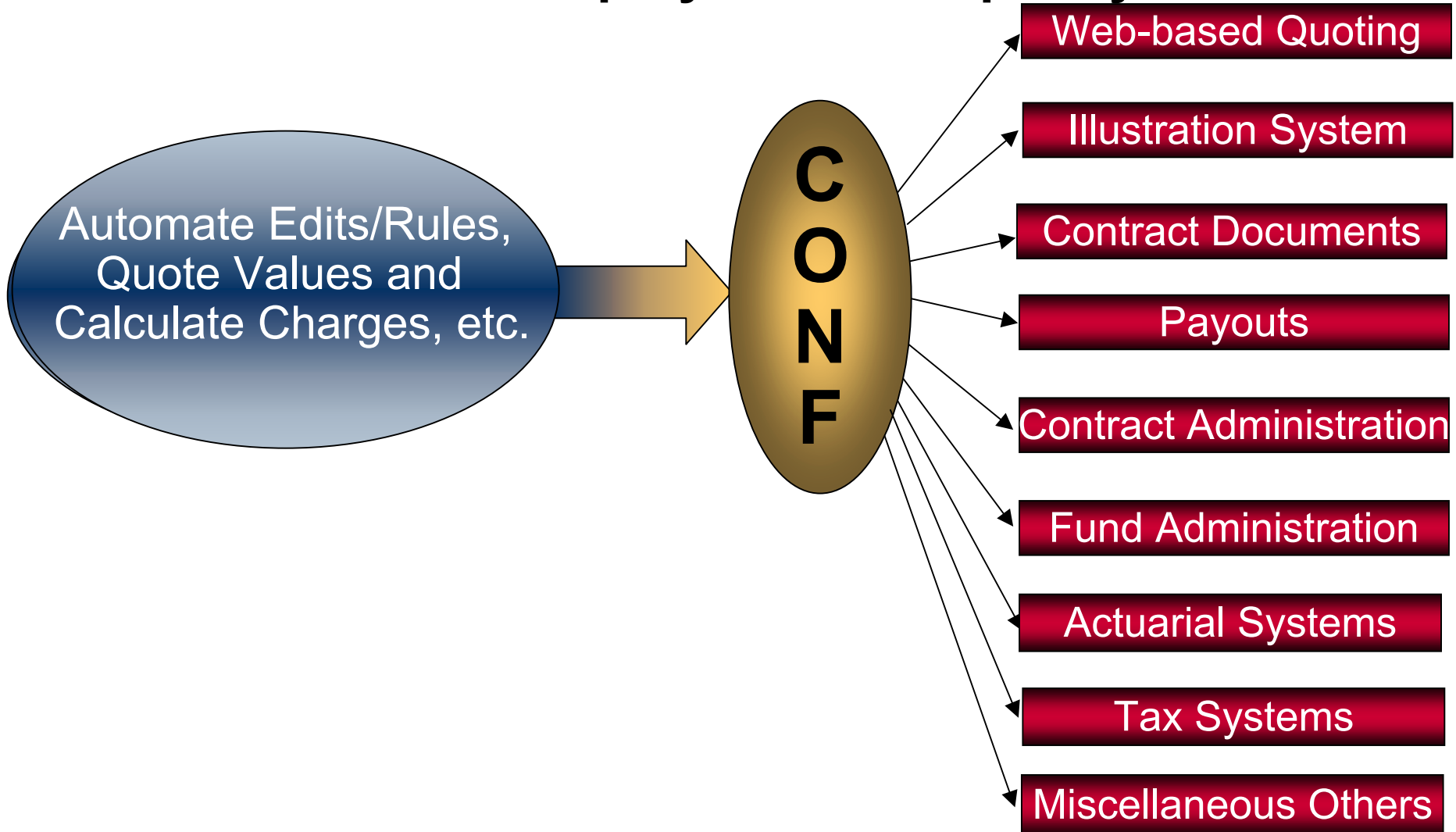
Product Configurator Background

- **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



Rules and Calculations - Defined Once - Deployed to Multiple Systems





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

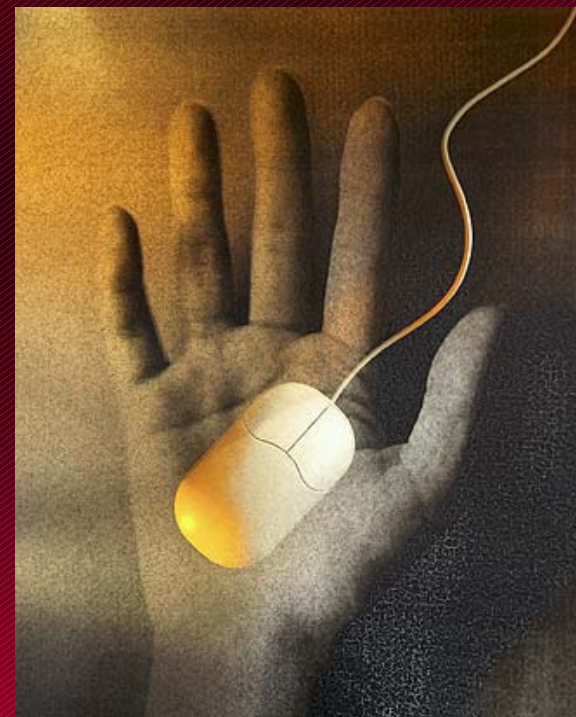
Deployed across Enterprise on multiple platforms

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

Business Requirement

Increase your Speed to Market

Improve Operational Efficiency

Centralize creation, modification and maintenance

Simplify Coding and Testing

Decrease Cost of Modifications

Easy to Use



Configurator Value

Reusable rules and calculations

Single model library for all systems

All lines of business

Flexible, easy to use tool

Multi-platform deployment and Self-documenting

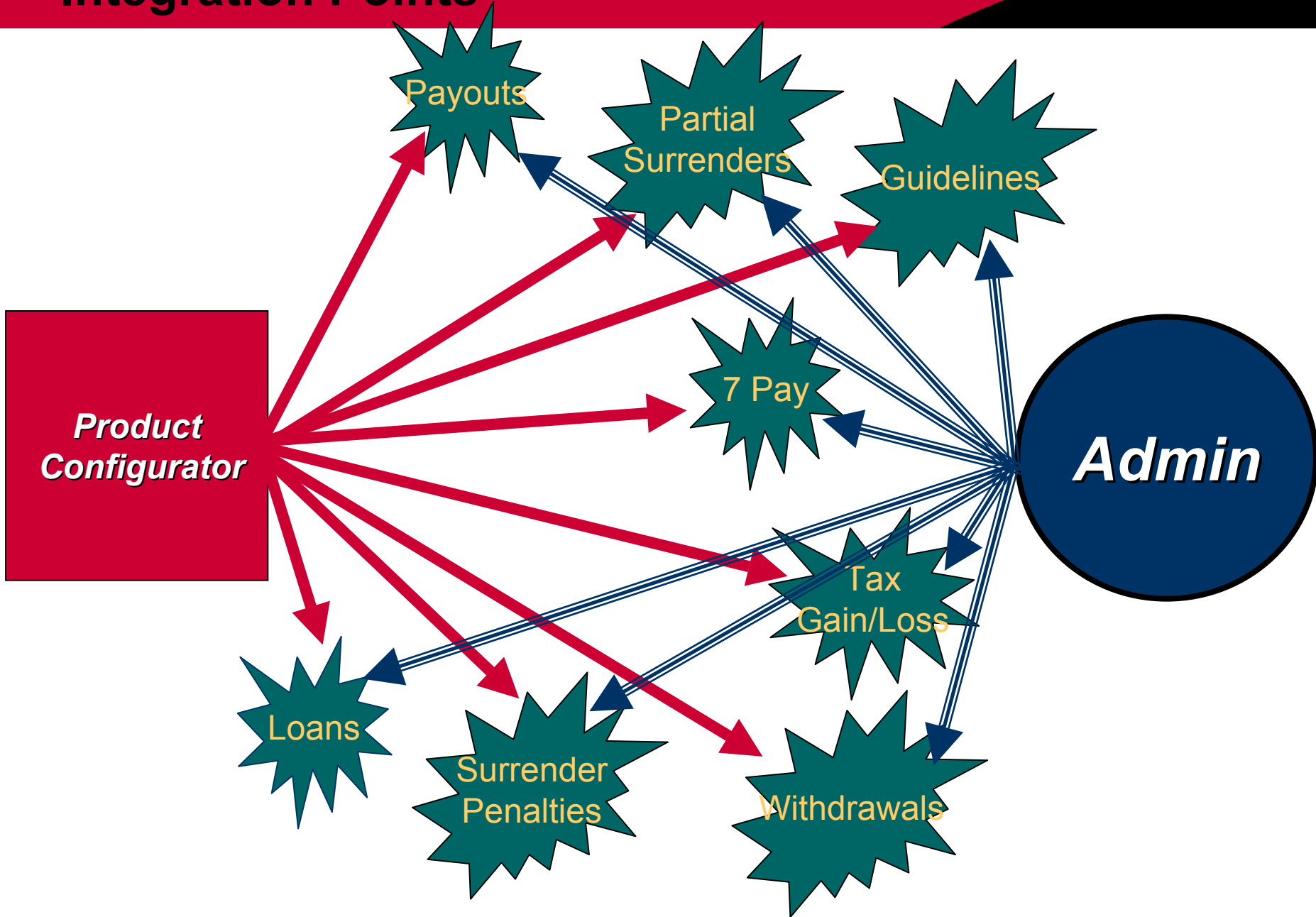
Puts the power to modify in hands of experts

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



Integration Points



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
- **Monthiversary 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



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