The Balance of Flexibility and Consistency: A Case Study of a Worldwide Pricing System for Partner Re

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Agenda

• The status quo: spreadsheets vs systems
• Aiming high: what should you expect from a best-in-class pricing system?
• Getting there: the risks, the challenges and mitigating them
• The result: TPS pricing system roll out
• The future: what should you expect from your pricing system in 5 years’ time?
The status quo: spreadsheets vs systems
This talk is focused on commercial and RI pricing

Pricing software reflects the level of underwriter judgement

- **Personal Lines**: Automated. Priced in seconds
- **SME Commercial**: Large volume. Priced in minutes or hours
- **Large Commercial**: Underwriter judgement
- **RI**: Large deals.
Insurer systems: build over buy

Insurers are underwriting and claim handling specialists (not software firms), so typical preferences are in order:

1. **Product**. License an off-the-shelf product, maintained by the vendor
   - + focus on analytics
   - - how far do you have to compromise your requirements

2. **Platform**. Business users (typically actuaries) develop models on software platform(s)
   - + business users control and evolve the system
   - - overhead of model maintenance

3. **Bespoke**. Bespoke solution built by developers (vendor or in-house development)
   - + can be exactly tailored solution
   - - long development cycle => inability to react quickly
   - - key man risk without very large development teams
UK internal capital model landscape

- 1995: Various: Fortran, VBA, ...
- 2005: Vendor platforms
- 2019: Vendor Products e.g. TCM

Vendor platforms e.g. Tyche
Bespoke

Bespoke

Bespoke

Various: Fortran, VBA, …

Vendor Products e.g. TCM

Vendor Platforms e.g. Tyche

Bespoke

Bespoke

September 2019
Commercial and RI Pricing landscape

- **1995**: Excel 2.0, Excel 95, In-house
- **2019**: Excel 95, Excel 97, Excel 2000, Excel 2013, R, Python, CAT platform, In-house; Rulebook

**Evolution to Product?**

Institute of Actuaries of Australia (Institute and Faculty of Actuaries)
Is there a better solution?

1. Product
   - No suitable product available off-the-shelf

2. Platform
   - Platforms do not deliver data capture, consistency, control requirements; high (and stealthy) maintenance cost

3. Bespoke
   - Delivery failure; key man risk; long wait for upgrades
Aiming high: a best-in-class pricing system
Disclaimer

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Previous landscape: Multiple technologies, high maintenance costs, duplication, errors, inconsistency, poor data collection, …
New TPS landscape: Streamlined, consistent, full data capture

Pricing Models: 1, 2, 3, x, z

- Pricing Data/Parameters
- Contract Admin
- Exposures
- Workflow Mgmt
- Reporting/Analytics

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Benefit 1: Comprehensive and User friendly

- Comprehensive: CAT & Non CAT, Prop & XL, Long tail and Short tail
- Flexible: data slicing, applying and blending multiple methods
- Intuitive & easy to use, so quicker to turn around pricing analyses

“This combines the best of all worlds: security of a Web platform AND the flexibility of Excel”
Benefit 2: Worldwide consistency

Consistency through the organization

• Same methodology and benchmarks used in all offices.

• Reporting consistency: easier to aggregate key metrics for risk / regulatory reporting and portfolio management

• Common software terminology improves communication across offices

“The pricing team no longer wastes time defining how the Cape Cod method works”
Benefit 3: Data capture

- All parameters and results captured
- Powerful reporting
- Easy sensitivity testing analysis by rolling forward through different parameter versions

“Full data capture means we can easily derive valuable market benchmark analytics”
Benefit 4: Governance

• One system = reduced maintenance risk and effort
• Integrated process

“The system guides the users through the pricing process, following our review and referral steps”
Getting there: Risks, challenges and mitigations
Standish Group Chaos Report: Review of 50,000 projects

Main success factors

- Executive Sponsorship (15%)
- Emotional Maturity (Collaboration) (15%)
- User Involvement (15%)
- Optimisation (Prioritisation) (15%)
- Skilled Staff (10%)

Cancelled • Challenged • Success

Pitfalls of software development

From startup idea to software

How the CEO explained it
Pitfalls of software development

From startup idea to software

How the CEO explained it

How the web agency understood it
Pitfalls of software development

From startup idea to software

- How the CEO explained it
- How the web agency understood it
- How the developer coded it
Pitfalls of software development

From startup idea to software

Identifiable issues:
• Lack of specification; Collaboration;
• Skilled staff;
• User involvement
Lessons learned: What was needed to build an Enterprise grade pricing system

Best practice development lifecycle

• **Investment.** 50 years of development effort to build an industrial system
• **Skilled team.** Dedicated team of 10 software developers and 8 pricing actuaries
• **Scope management.** Detailed spec sign-off before development starts
• **Planning.** Indicative planning for whole project, detailed breakdown before feature development
• **Development management.** Feedback loop between client / BA / developers
• **Testing.** Automated tests
The result: TPS deployment
Rolling out TPS globally

Over the course of 4 months, the pricing system was successfully deployed across 10 locations, 15 product lines, 30 actuaries and 150 underwriters and 40 technical assistants

**Challenges:**

- Fear of change
- Diverse user community

**Solutions:**

- Constant communication through the process
- Training tailored to the needs
- Cheat sheet
- Helpdesk
- Superusers’ community

**Conclusion:** has been extremely positively received
The future: what to expect in 5 years’ time?
The future: where are pricing systems going next

Integrated (marginal) pricing, accumulation, capital

Auto roll-forward; price exceptions not price every policy

Data augmentation (customer details; risk factors)

Sold and deployed through apps; variable policy term length