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?
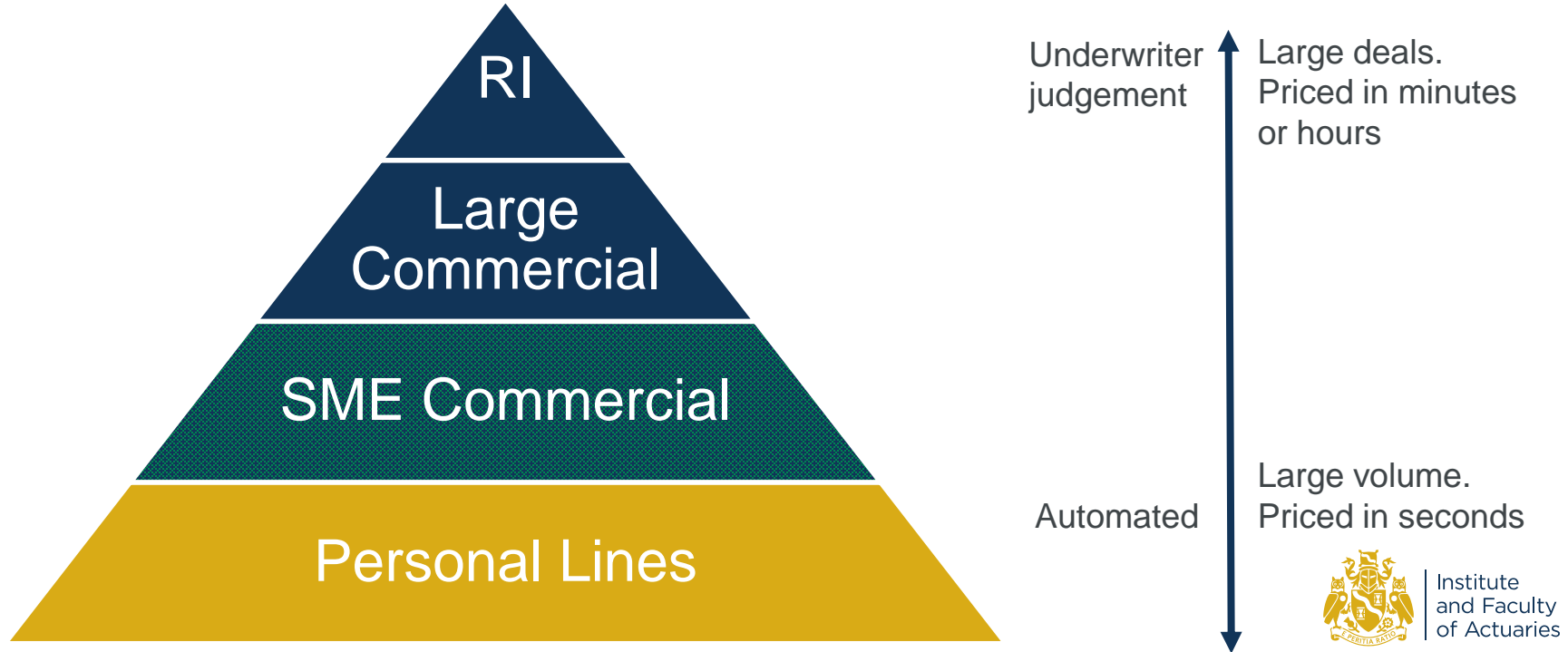
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The status quo: spreadsheets vs systems

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This talk is focussed on commercial and RI pricing

Pricing software reflects the level of underwriter judgement

RI

Large Commercial

SME Commercial

Personal Lines

Underwriter judgement — Large deals. Priced in minutes or hours

Automated — Large volume. Priced in seconds

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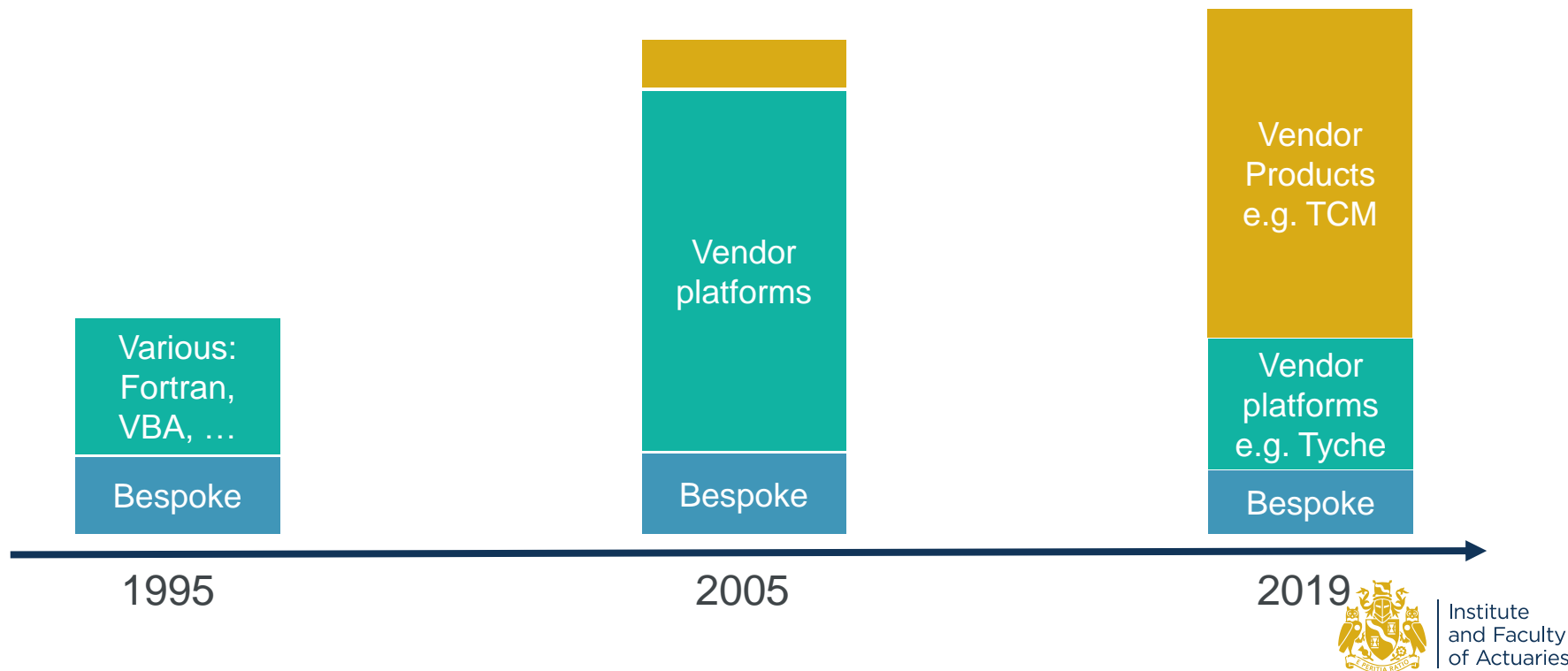# Insurer systems: build over buy

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
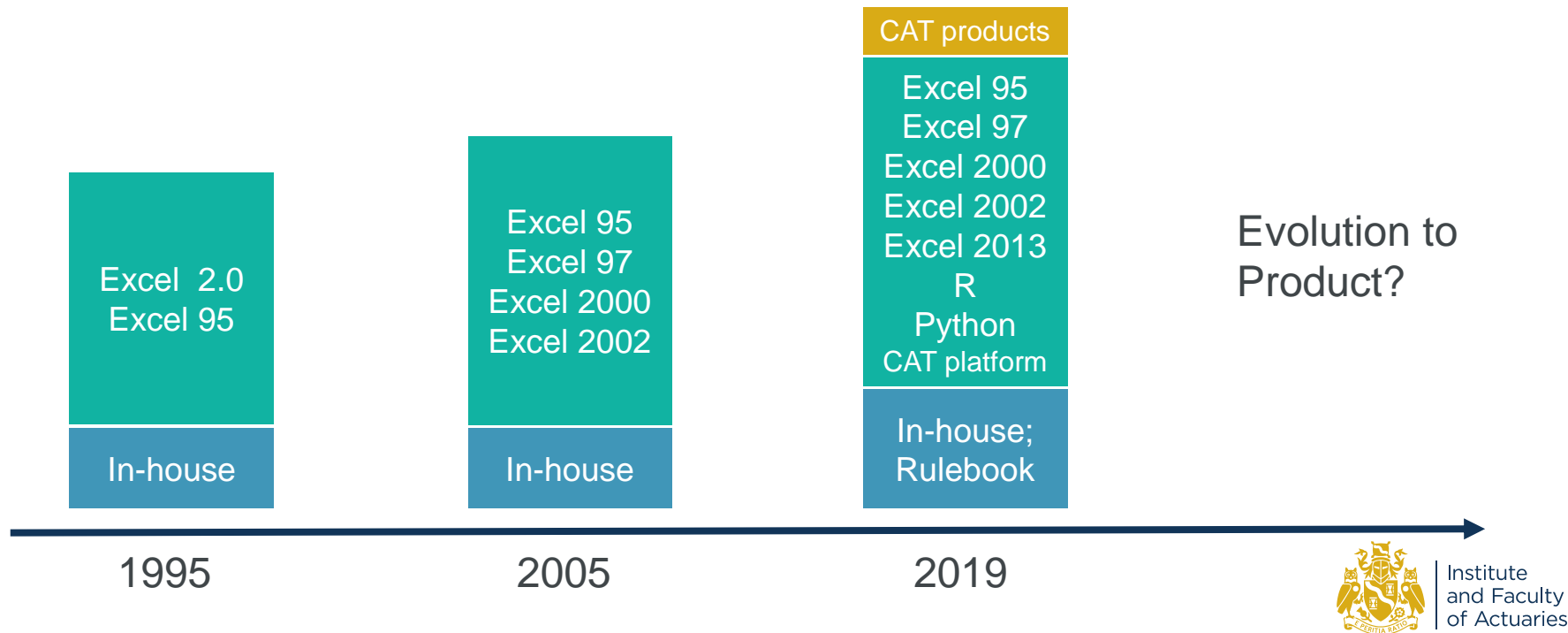   - - key man risk without very large development teams

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UK internal capital model landscape

Legend:
- Product
- Platform
- Bespoke

1995:
- Various: Fortran, VBA, …
- Bespoke

2005:
- Vendor platforms
- Bespoke

2019:
- Vendor Products e.g. TCM
- Vendor platforms e.g. Tyche
- Bespoke

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Commercial and RI Pricing landscape

Product
Platform
Bespoke

CAT products

Excel 95
Excel 97
Excel 2000
Excel 2002
Excel 2013
R
Python
CAT platform

In-house;
Rulebook

Excel 95
Excel 97
Excel 2000
Excel 2002

In-house

Excel 2.0
Excel 95

In-house

Evolution to
Product?

1995

2005

2019

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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

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Aiming high: a best-in-class pricing system

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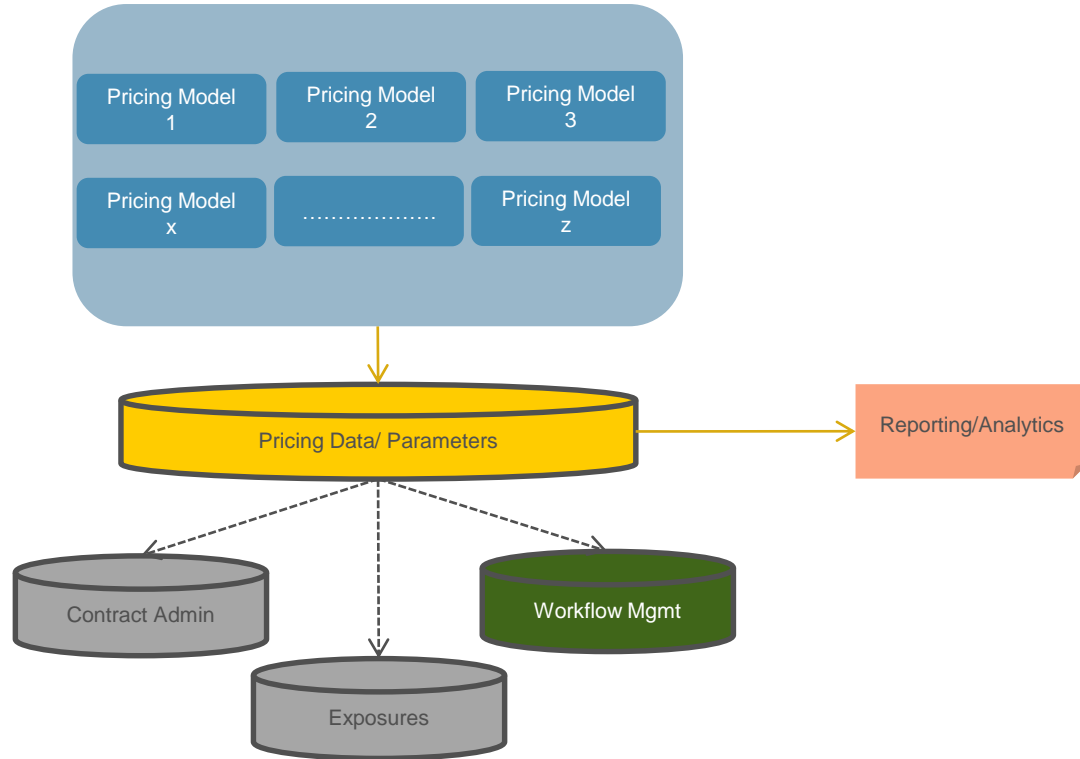
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Previous landscape: Multiple technologies, high maintenance costs, duplication, errors, inconsistency, poor data collection, …
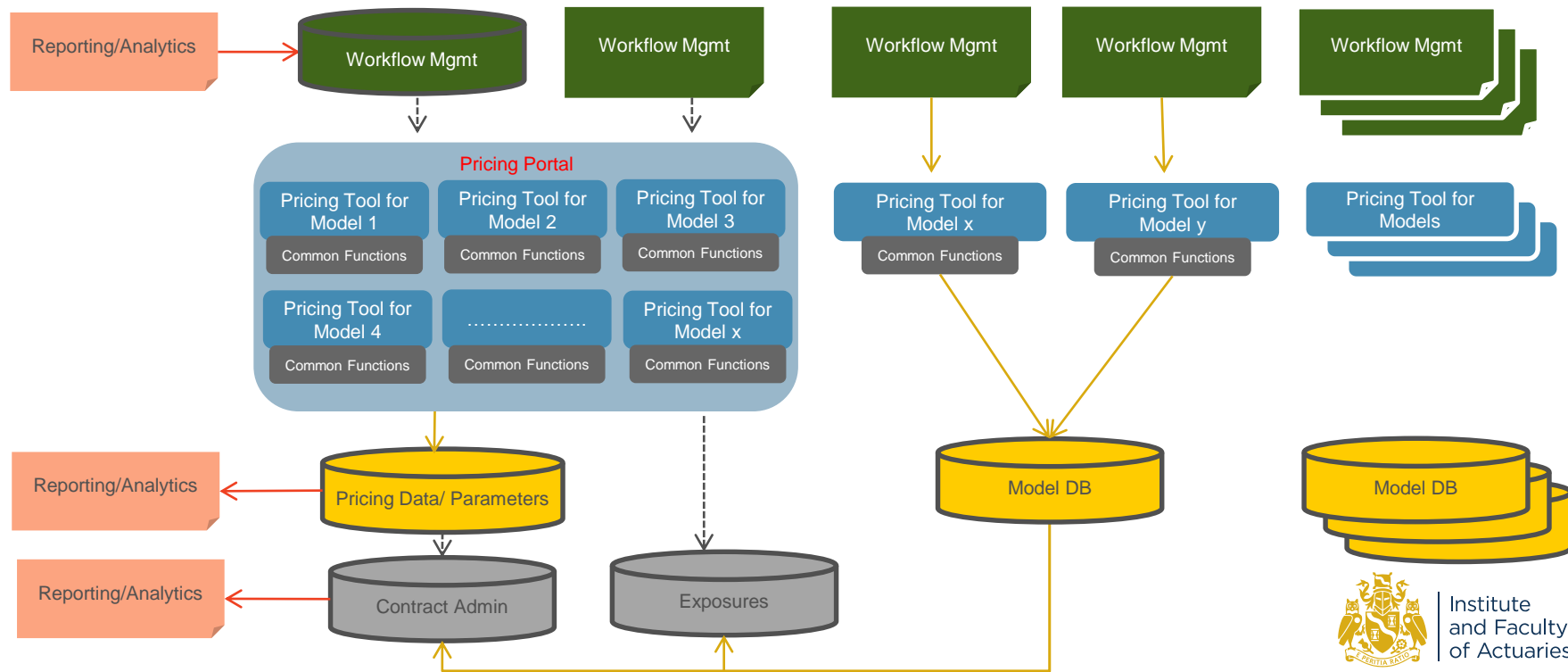
New TPS landscape: Streamlined, consistent, full data capture

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"

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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"

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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

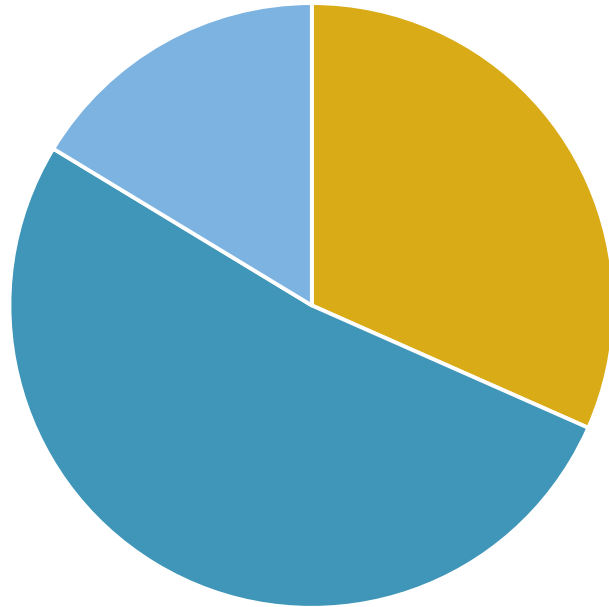"The system guides the users through the pricing process, following our review and referral steps"
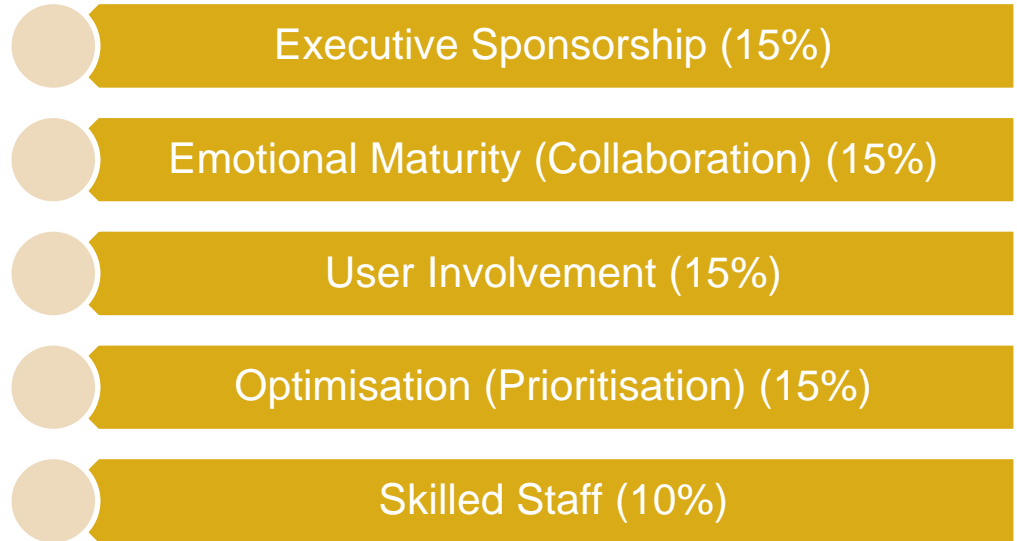
Getting there: Risks, challenges and mitigations

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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%)

https://www.infoq.com/articles/standish-chaos-2015

■ Cancelled ■ Challenged ■ Success

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Pitfalls of software development
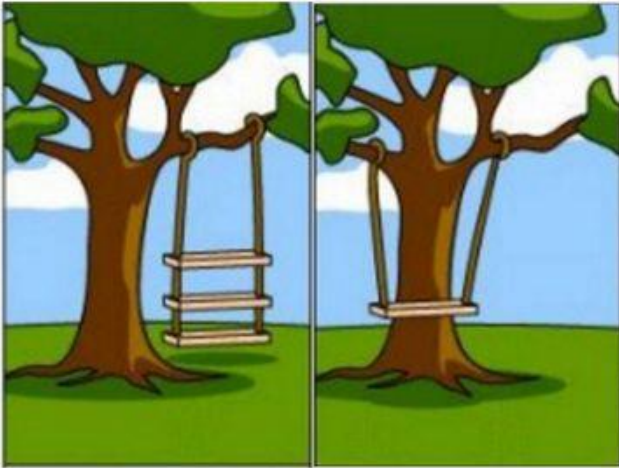

From startup idea to software

How the CEO explained it

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Pitfalls of software development

From startup idea to software
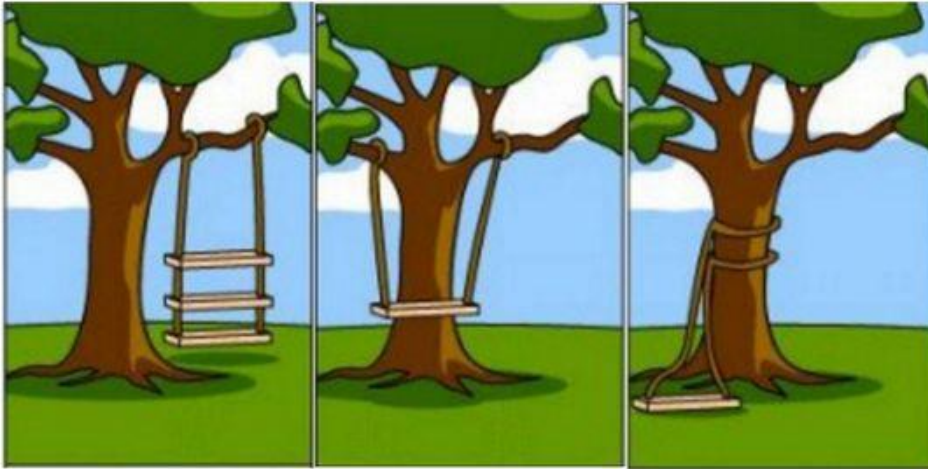
How the CEO explained it / How the web agency understood it

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

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Pitfalls of software development

From startup idea to software

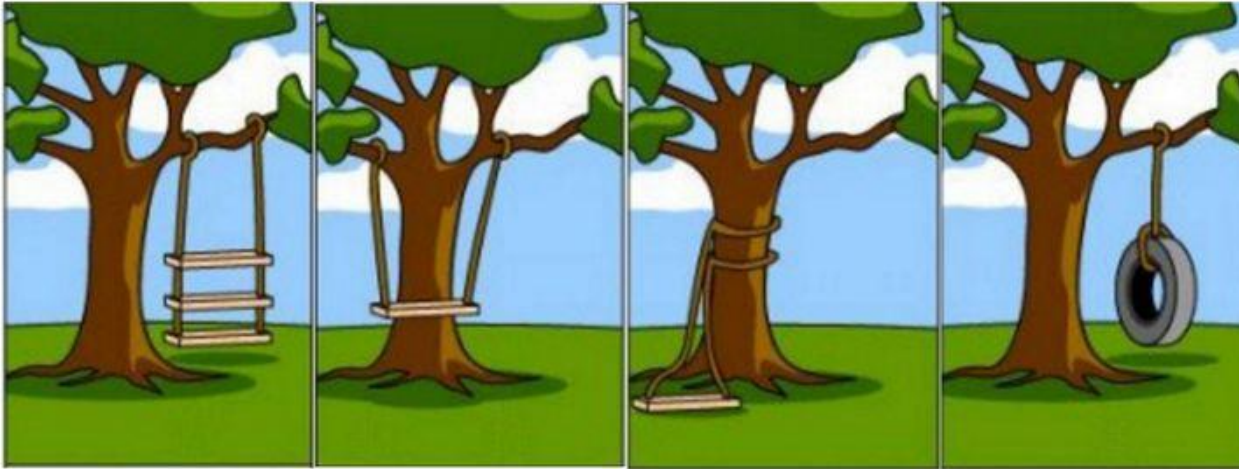How the CEO explained it

How the web agency understood it

How the developer coded it

What the startup actually needs

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

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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

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The future: what to expect in 5 years' time?

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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

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