

Model TCO

Reducing waste in
financial analytics

The world's biggest investment banks' revenues have fallen 10% per year since 2009, yet costs have dropped just 1% per year. Conditions have become structurally less favourable and more must be done in response.

A recent report¹ pointed out the organisational challenges that banks are facing in simplifying large complex product ranges. It flagged banks' slowness to embrace collaborative structures that allow costs to be cut quickly and easily.

Things are changing: the investment banking industry is questioning all sources of cost and actively rationalising.

This is both a cultural and practical challenge. On the one hand, business divisions must be removed, and on the other, real cost savings must be realised across deeply entangled technical environments.

Complex and highly regulated modern financial markets require substantial modelling. But modelling within the banking industry remains fragmented both between – and even within – institutions and is largely built to order.

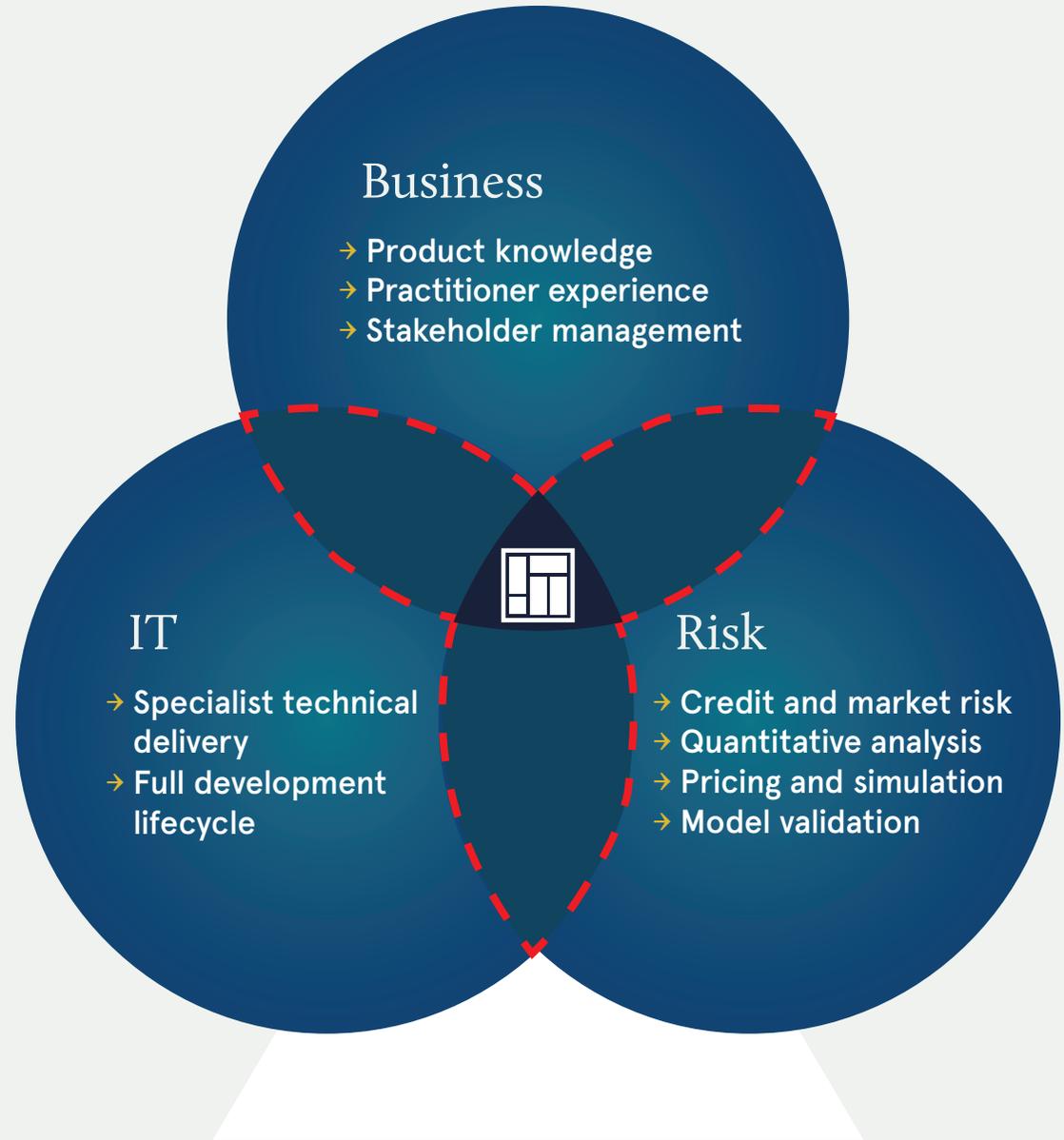
As a result, financial risk models generate a significant part of the cost of running an investment bank – a cost that continues to rise as regulatory demands increase.

In 2010 industry experts estimated data management and data cleansing costs alone accounted for 70% of the total cost of ownership within risk management. This offers considerable scope for improvement.²

¹McKinsey. The Return of Strategy: a Roadmap to Sustainable Performance for Capital Markets and Investment Banking. Nov 2013

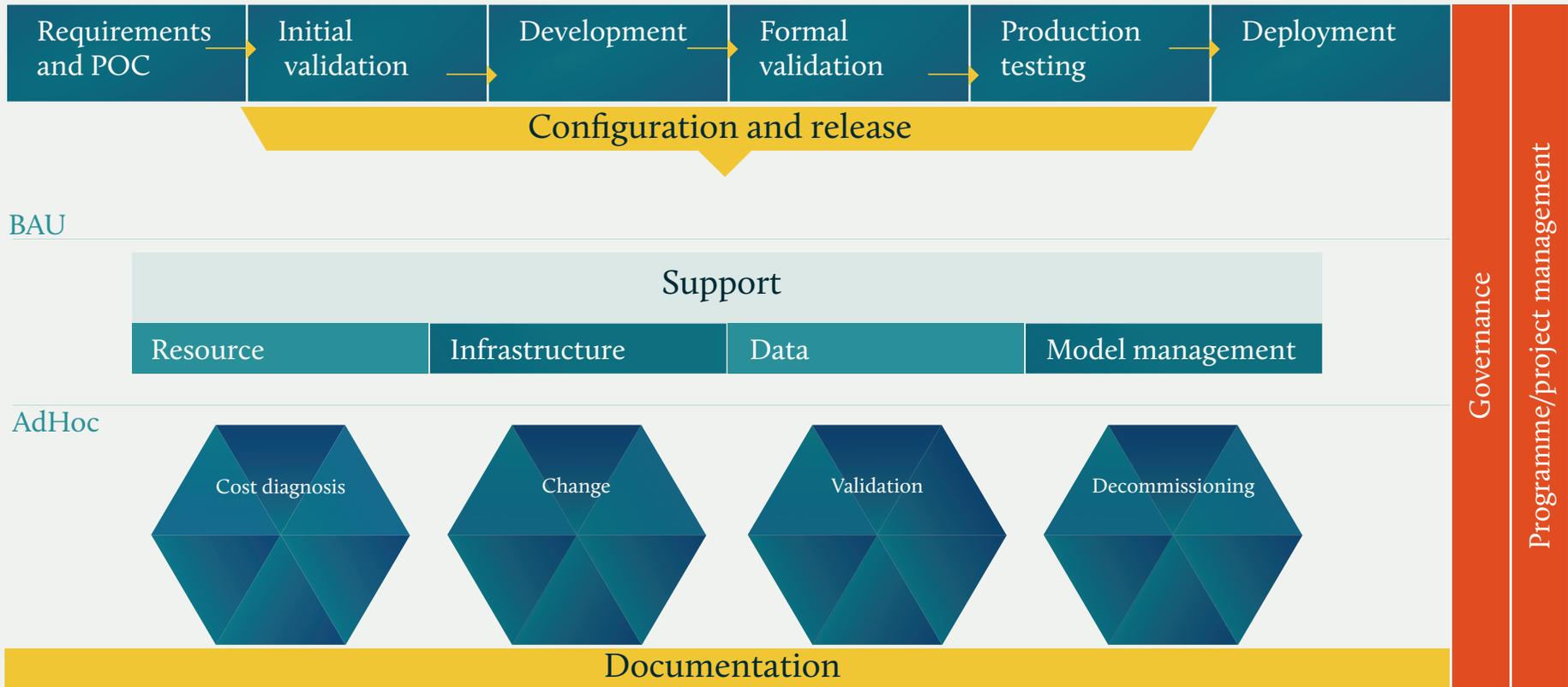
²Analytics magazine, Sept/Oct 2010

Examining the cost of modelling presents a significant opportunity to realise savings – requiring banks to examine every aspect of cost of ownership and the precise practical steps they can take to deliver improvement.



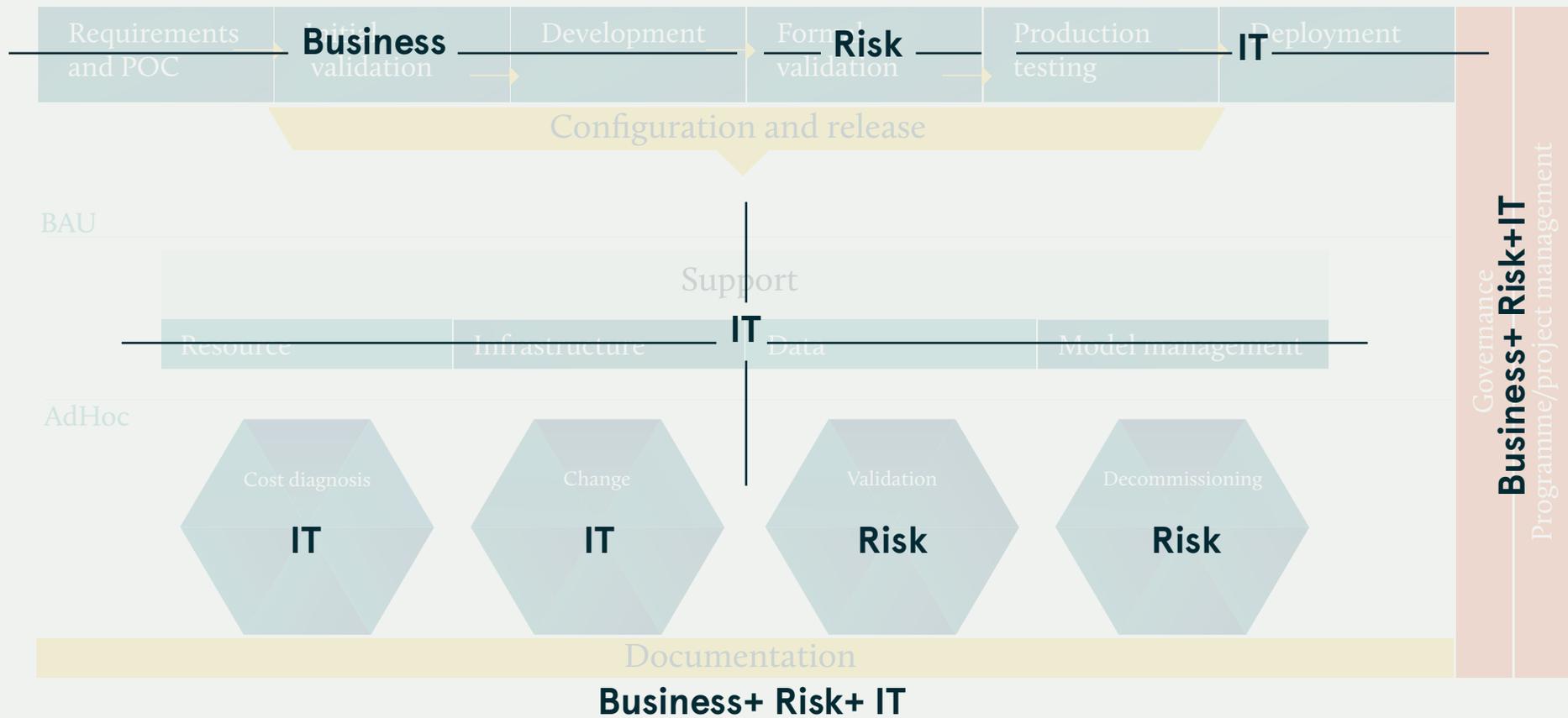
Riskcare's teams draw on 20 years of experience in model design and implementation.

We are able to provide a unique combination of business, quant, risk and technology practitioners – providing solutions for a wide variety of modelling applications.



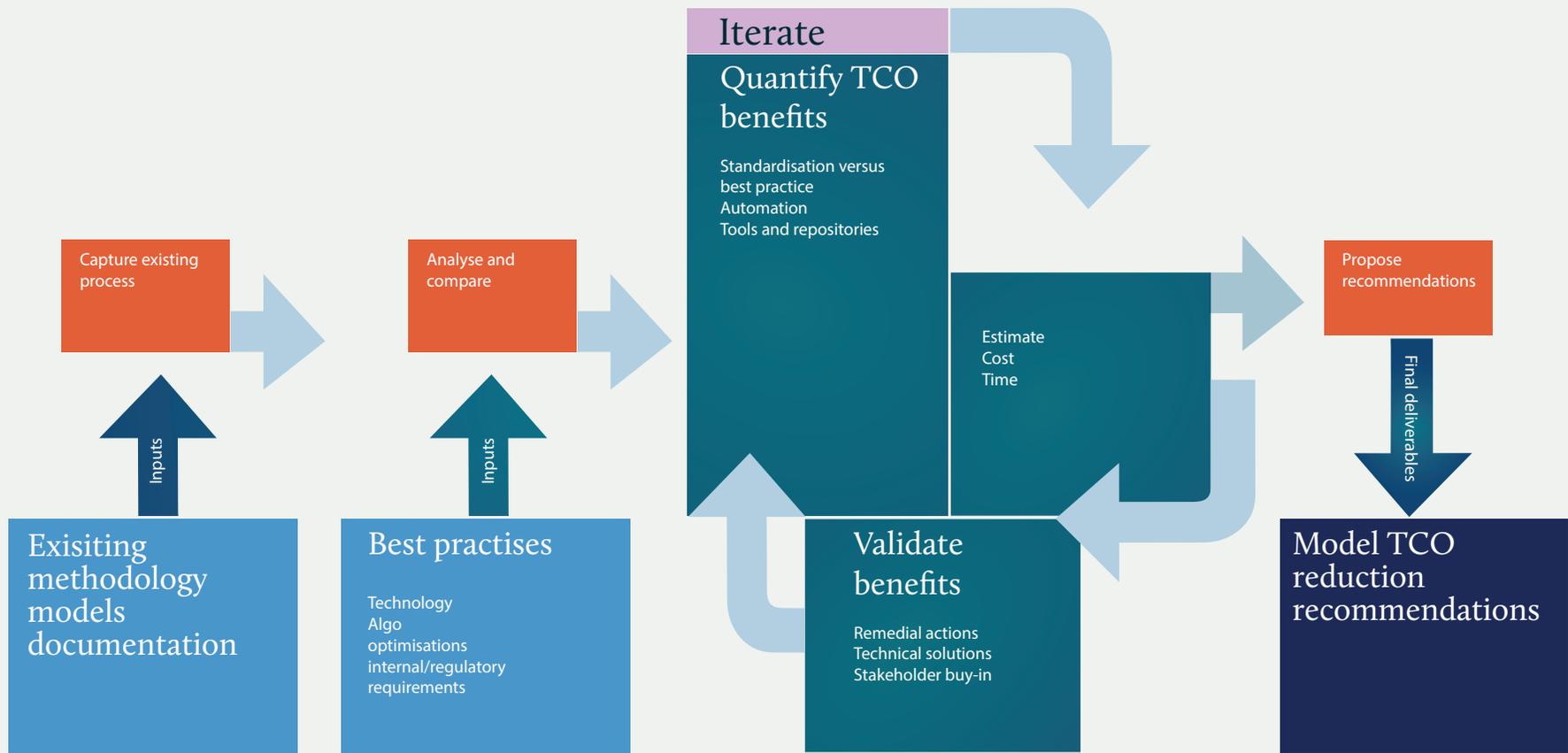
Challenge I: The model development lifecycle

Models usually follow a structured but complex lifecycle providing plenty of potential for miscommunication, overlap and poor management.



Challenge 2: Multiple owners

The model lifecycle covers multiple groups and many owners; overcoming vested interests can prove the greatest challenge.



Riskcare TCO methodology part I: A standard approach

Regardless of the context a similar approach can usually be adopted to analyse modelling costs and identify improvements.

Holistic

→ Review the entire modelling environment to identify areas of inefficiency

Model category

→ A focused review of a single category of model, examining the entire modelling lifecycle in depth for that model

Target process

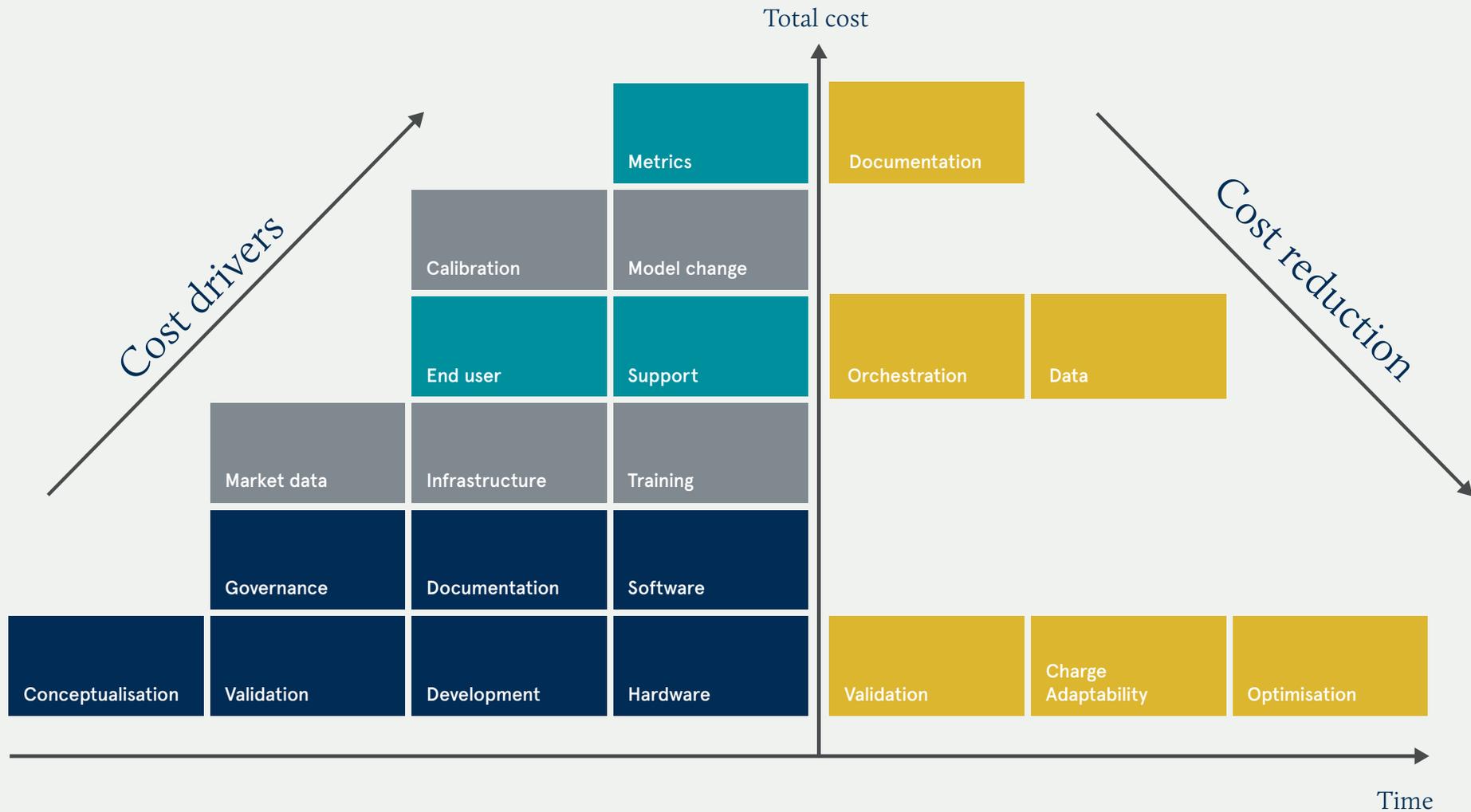
→ A deep dive analysis on a single element in the model lifecycle such as Validation or Change

Individual model

→ Target an 'expensive' model and look at it in depth across all or part of the lifecycle

Riskcare TCO methodology part 2: Targeted scope

The scope of TCO analysis can be adapted to suit individual organisational needs and focus on areas of inefficiency.



Riskcare TCO methodology part 3: Simplify the problem

TCO reduction can be achieved by focusing on a few common dimensions where savings can be realised.

Gather

- Model specifications
- Static data
- Historical time series
- Test definitions and templates
- Success criteria
- Scenarios
- Stress tests
- Documentation

- Data lifecycle
- Sourcing process
- Usage inside model
- Waterfall mechanism

- Functional/business/technical requirements
- Applicable legal/regulatory/accounting rules
- Underlying theory and methodology
- Assumptions, weaknesses and limitations
- Validation documentation
- Coding documentation
- Test documentation
- Support, configuration and user documentation
- Version control,
- Ownership

Analyse

- Model complexity
- Commonality
- Model appropriateness
- Documentation process
- Data costs
- Simulation processes
- Calibration
- Stability
- Cost of support
- Infrastructure costs
- Calculation timescales
- Manual interventions
- Pain points

- Profiling and redundancy
- Cost metrics and TCO data map

- Content gaps
- Content consistency
- Version control practices
- Clarity
- Quality
- Gaps
- Any other inconsistencies...

Recommend

- Simplify code and methodology →
- Increase commonalities
- Automate Documentation
- Reduce manual intervention
- Lower infrastructure load

- Automation opportunities
- Golden source options
- Data tracing
- Data quality improvements
- Model data usage improvements

- Documentation automation
- Repository enhancements
- Model inventory and categorisation

Example impact

Overall TCO

-25%

Manual intervention

-25%

Change effort

-15%

Riskcare TCO methodology part 4:
Analyse and recommend

Gather

- Inventories (assets, software, data feeds)
- Technical documentation
- Model broker evaluation
- Infrastructure requirements and usage
- Data usage
- Model usage management process
- Performance and redundancy metrics
- Peak utilisation
- Target models

Analyse

- Audit and remediate
 - Asset inventory
 - Software inventory
 - Data feed inventory
 - Metrics
 - SLA documentation
- H/W performance analysis for target models
 - Peak utilisation
 - Resource consumption
 - Look inside models or establish
 - Dialogue with black boxes
 - Task analysis
 - Redundancy analysis

Recommend

- Model phasing
- Model restructuring
- Improved model take on process
- Grid globalisation
- Update model
- Rescheduling of model timetable
- Metrics gathering
- New model process improvements
- Model repository management
- Model orchestration

Example impact

Reduce infrastructure cost by

10%

- Models
- Documentation
- Data
- Time series
- Tests definitions
- Templates
- Possible changes to test assumptions/environment
- Success criteria
- Scenarios
- Stress tests
- Current validation process

- Methodology
- Audit of all inputs
- Data loading
 - Sources
 - Consistency
 - Optimisation
- Effort/time
- Tools
- Documentation
- Infrastructure usage
- Profile model
- Costs

- Simplification of validation process
- Formal model test repository
- Model-oriented data repository
- Enhance model categorisation
- Improve test automation
- Increase validation repeatability

Reduce validation costs by

20%

Riskcare TCO methodology part 4:
Analyse and recommend

Gather

- Model usage and dependencies
- Model change documentation
- Model change process
- Change team structure
- Change metrics where available
- Code examples
- Review Process

Analyse

- Roles and responsibilities
- Change efficiency
- Automation of testing, documentation and release
- Impact analysis
- Design quality
- Divergence from original use and scope
- Testability

Recommend

- Improved elapsed times for change
- Upgrade documentation or fully automate
- Process improvements

Example impact

Time elapsed

-15%

- Models
- Data
- Tests
- Scenarios
- Stress tests
- Documentation

- Commonality
- Model Complexity
- Numerical inefficiencies
- Code inefficiencies
- Cost of support/people
- Infrastructure costs
- Calculation timescales
- Stability
- Data costs
- Manual intervention
- Performance inefficiencies
- Pain points

- Improved computation times
- Iteration improvements
- Streamlined code
- Simplified modelling choices
- Reduced model duplication

Overall TCO

-25%

Riskcare TCO methodology part 4:
Analyse and recommend

ABOUT RISKCARE

Riskcare is a financial services consultancy and outsourcing company. Over the past 20 years our teams have built up experience and knowledge that sets us apart in delivering advanced, complex and transformational change to the capital markets industry. Riskcare has grown to become one of the UK's foremost change management firms.

We service a broad range of clients, including investment banks, institutional investment companies, hedge funds, exchanges, commodities trading houses and insurance corporations.

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