


**The Actuarial Profession**   
making financial sense of the future

## 2001 Healthcare Conference

### *Learning from Experience*

21-23 October 2001

© Peter Turvey

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### Objectives

To help a Product Manager to

- Understand the impact on the insurer's financials
- Identify the key risk factors
- Learn from experience
- Modify strategy and tactics

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### Health Insurance Products

- Critical Illness
- Income Protection
- Long Term Care
- Medical Expense
- .....

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## Scope

- Product Design
- Distribution
- Pricing
- Reserving

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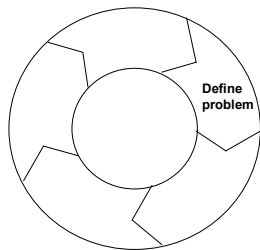
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## Control Cycle




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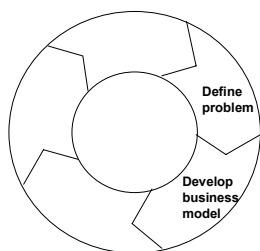
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## Control Cycle




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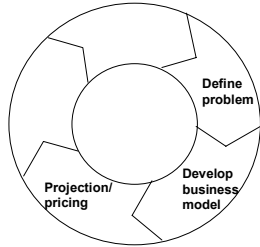
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## Control Cycle



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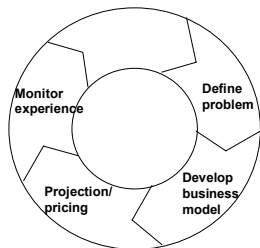
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## Control Cycle



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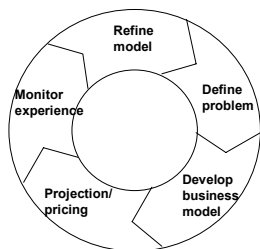
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## Control Cycle



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### Commercial Background

- Consumerism
- Transparency
- Competition
- Penalties for failure

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### Success Factors

- Accurate pricing
- Cherry-picking
- Economies of scale
- Profit maximisation

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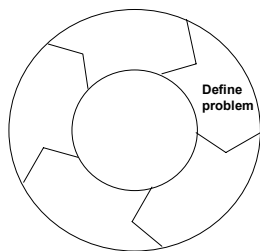
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### Control Cycle



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## Define the Problem

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Establish objectives

- Volume
- Profitability/contribution to overhead
- Modernise product range
- Timescale

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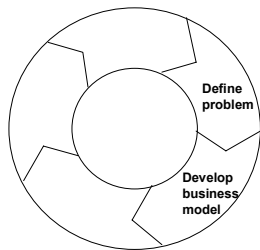
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## Control Cycle

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## Business Model

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Input items

- Product Design
- Distribution Strategy
- Anticipated Experience
- Reinsurance
- External costs and inputs
- Reporting Framework(s)

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## Business Model

### Output items

- Projected Revenue
- Projected Capital needs
- Projected use of other resources
- Sensitivities

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## Product Design

- Benefits scale
- Benefit definitions
- Guarantees
- Options

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## Distribution Strategy

- Channel
- Target Market(s)
- Model Points
- Pricing Structure
- Underwriting Strategy

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### Anticipated Experience - Product Related

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- One-off Development Cost
- Morbidity/Recovery
- Mortality
- Persistency
- Claim Cost Distribution
- Secular Changes

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### Anticipated Experience - Distribution Related

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- Development Cost
- Volumes
- Mix

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### Reinsurance

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- Method
- Reinsurance Limits
- Reinsurance Terms

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### External Costs/Inputs

- Capital
- Issue Expense
- Maintenance Expense
- Tax
- Investment Income

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### Reporting Framework

- Accounting Conventions
- Reserving algorithms
- Solvency Capital
- Possible future changes

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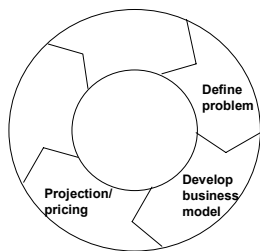
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### Control Cycle



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## Projected Revenue

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- On all the bases that matter
- Monthly intervals
- Full revenue account
- Surplus/deficit
- “Drill-down” facility

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## Resource Utilisation

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### Capital

- Accumulated Statutory deficit
- Solvency Margin
- RoCE

### Other

- People, space, IT capacity....

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## Sensitivities

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- Deterministic versus Stochastic
- Single parameter tests
- Environment tests
- Combination “Doomsday” tests
- Identify key risk factors....and manage

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## Model Overview

- Own the Model
- Document
- Communicate key findings

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## Parameter Setting

### Sources

- Own experience
- Colleagues
- Market Experience (e.g. CMI)
- Reinsurers
- Official Statistics
- Professional papers

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## Pricing Benchmark

- Price to achieve profit target
- Compare with peer group
- Investigate differences

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## Benchmarking Review

- Confirm approach
- Modify approach
- Abandon?

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## Systems

### Objectives

- Collect any data that might indicate a risk factor
- Collect detailed claims data
- Facilitate changes to product design

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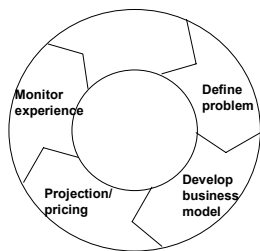
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## Control Cycle



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## Evaluate Experience

### Tools

- Whole account studies
- Single factor studies
- Progressively refine if/when data allows
- Multiple regression analysis

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## Things to look at....

- All the assumptions in the model
- Numbers vs amounts
- Decrements rates vs anticipated actual
- Analysis of surplus under different regimes
- Projected revenue: outturn
- Peer group performance

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## Research Programme

- Prioritise
- Rolling program
- Standardise
- Automate
- Contribute to industry studies

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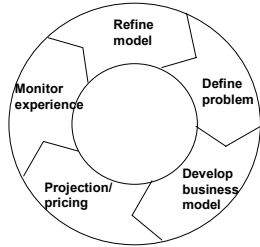
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## Control Cycle




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## Learning the Lessons

- Identify the best parts of the portfolio
- Identify the worst-performing parts of the portfolio
- Modify Business Plan
- Reprice

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## Overview

Control cycle is a vital tool

Provides early clues as to best route through largely uncharted territory

Key elements

- documentation
- projection
- data collection
- analysis
- modification of policy

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