



The Actuarial Profession

making financial sense of the future

Current Issues in General Insurance: Operational Risk

Gregory Overton, 26th April 2004



The Actuarial Profession

making financial sense of the future

Quantifying Operational Risk in General Insurance Companies

By Helen Bradley, Russell Devitt, George Orros,
Gregory Overton, Louise Pryor, Richard Shaw,
Michael Tripp (Chairman)

Presented to the Institute of Actuaries, 22 March 2004

Agenda

- What is Operational Risk
- Our sessional paper
 - Case study
 - Soft Issues
 - Methods
 - Conclusions and messages
- Discussion

A Fatal Exception OE has occurred at 0028:C001577D in VXD VWIN32(01) +00000AFD.
The current application will be terminated

What is Operational Risk?



- ‘Operational risk is the risk of loss, resulting from inadequate or failed internal processes, people and systems or from external events’ - FSA
 - “External events” doesn’t mean insurance losses
 - Needs to be more detailed for effective identification, assessment and modelling

Drivers for Op Risk measurement



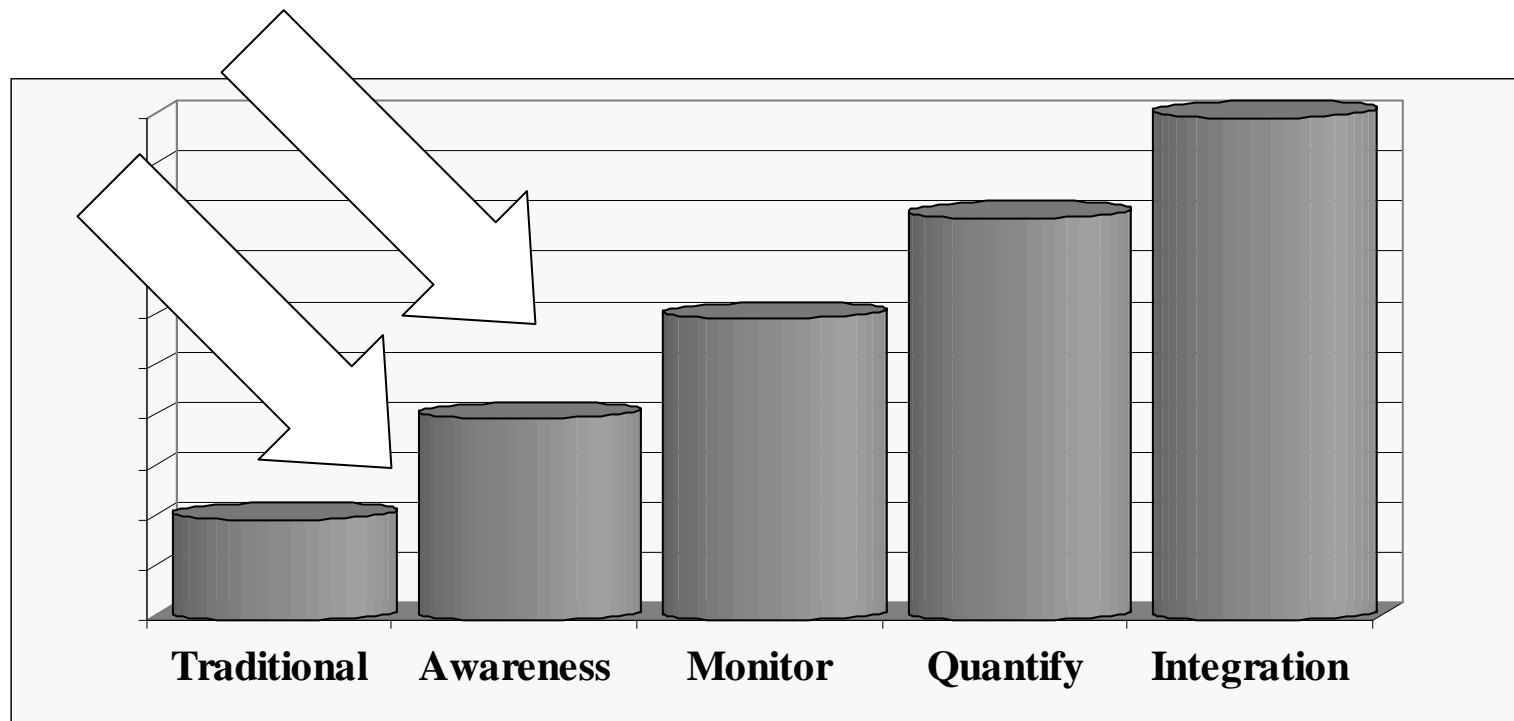
Regulatory pressures

- FSA
 - Solvency I & II
- Basle II

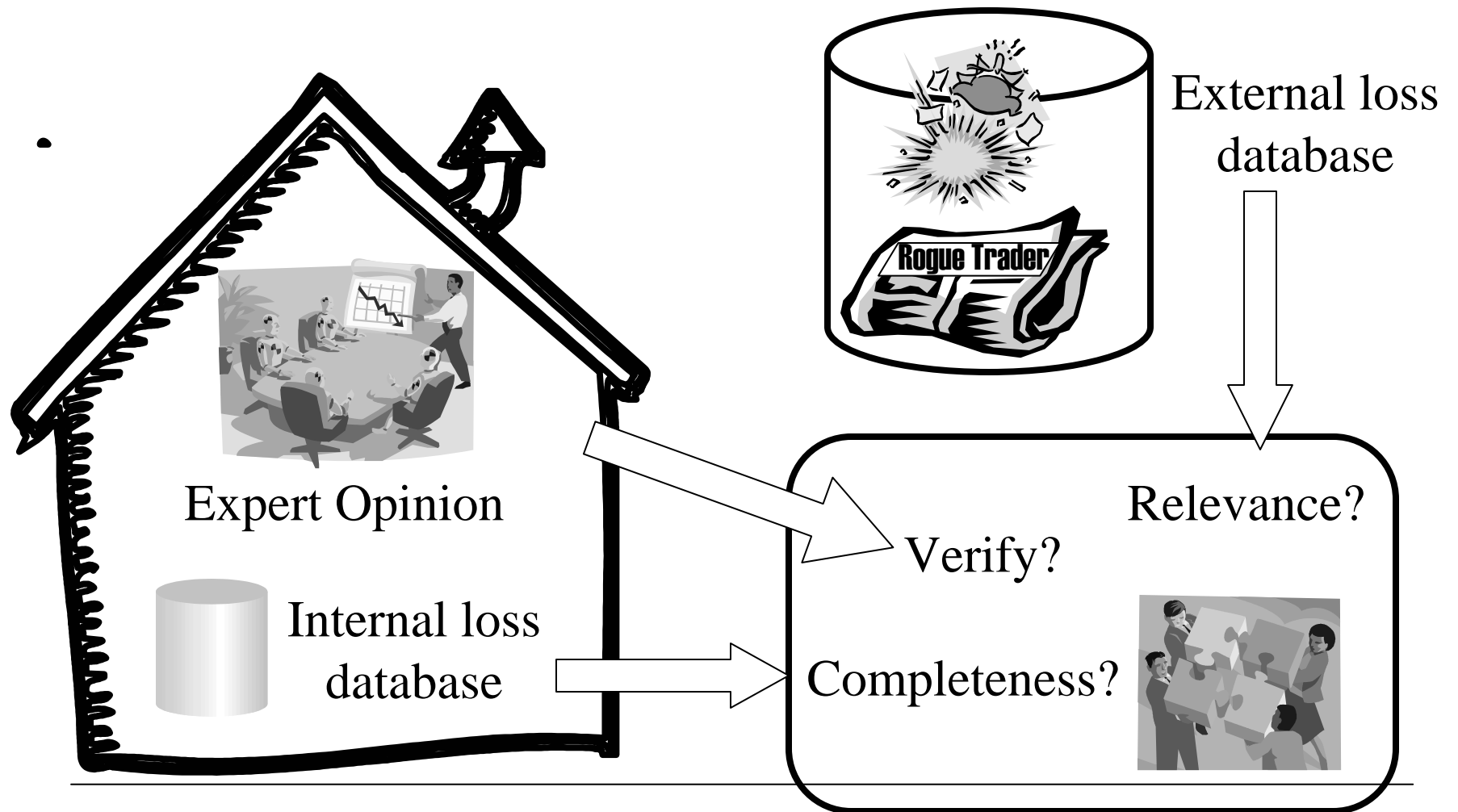
Strategic benefits

- Best practice
- Better risk management
- Better info about organisation
- Smooth earnings

Evolution of Operational Risk Practices



Sources of information



Agenda

- What is Operational Risk
- **Our sessional paper**
 - Case study
 - Soft Issues
 - Methods
 - Conclusions and messages
- Discussion

Case Study

- Fictional
- Pragmatic
- Not cutting edge
- Unrealistic
- The only option

MELG plc

- Started as small life office in Midlands (c1900)
- Taken over by US multinational
- 3 strategic businesses
 - Commercial,
 - Personal intermediary
 - Personal direct
- Several Issues...

MELG plc – Loss eg 1

Outsourcing of claims handling

- Personal direct claims handling outsourced to Personal intermediary business
- Projected cost - £10m
- Actual cost - £50m
- Due to – attention distracted from underwriting and inadequate monitoring of claims handling

MELG plc – Loss eg 2

External Supplier fraud

- Fraud of third-party service provider went unreported
- Despite junior manager aware of irregularities
- Actual cost - £5m
- Due to – lack of confidence in whistle blowing procedures

MELG plc – Loss eg 3

Claims leakage

- Investigation into fraudulent and ‘misrepresented’ claims leakage
- Led to assessment of significant overpayments
- Actual cost - £27m over 7 years

MELG plc – Loss eg 4

Reinsurance failure to respond

- Grp mgmnt overrode local mgmnt on reinsurance policy
- Major loss recovered less than expected
- Expected recovery - £50m
- Actual recovery - £10m
- Due to – failure of implementation and review process and lack of communication

MELG plc – Strategy loss

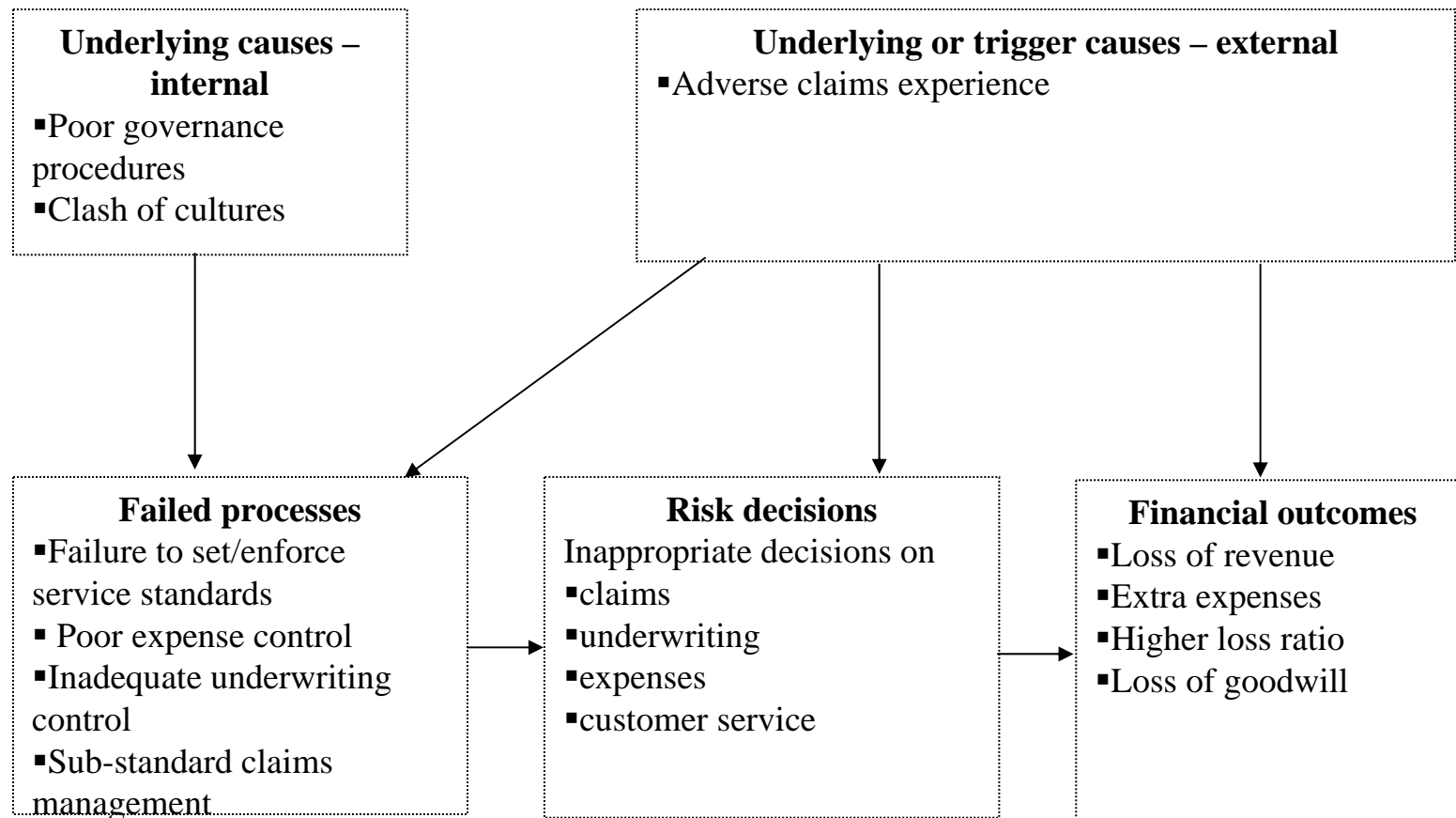
Mgmnt want to Increase commercial business

- But personal lines are more profitable
- Strategy leads to poorer results
- Whose fault?
- Is it Operational Risk?

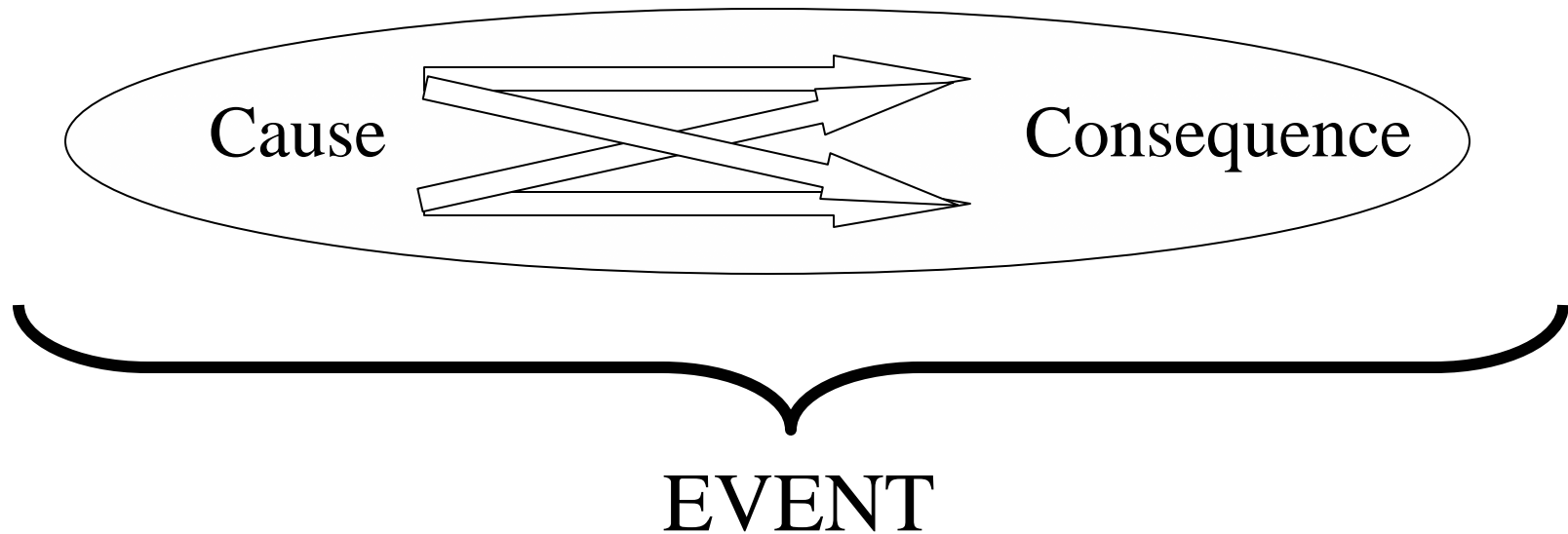
Soft Issues

- People; people; people
- Understanding
- Communications
- Ownership
- Culture – open, honest, blame free??
- Reward environment

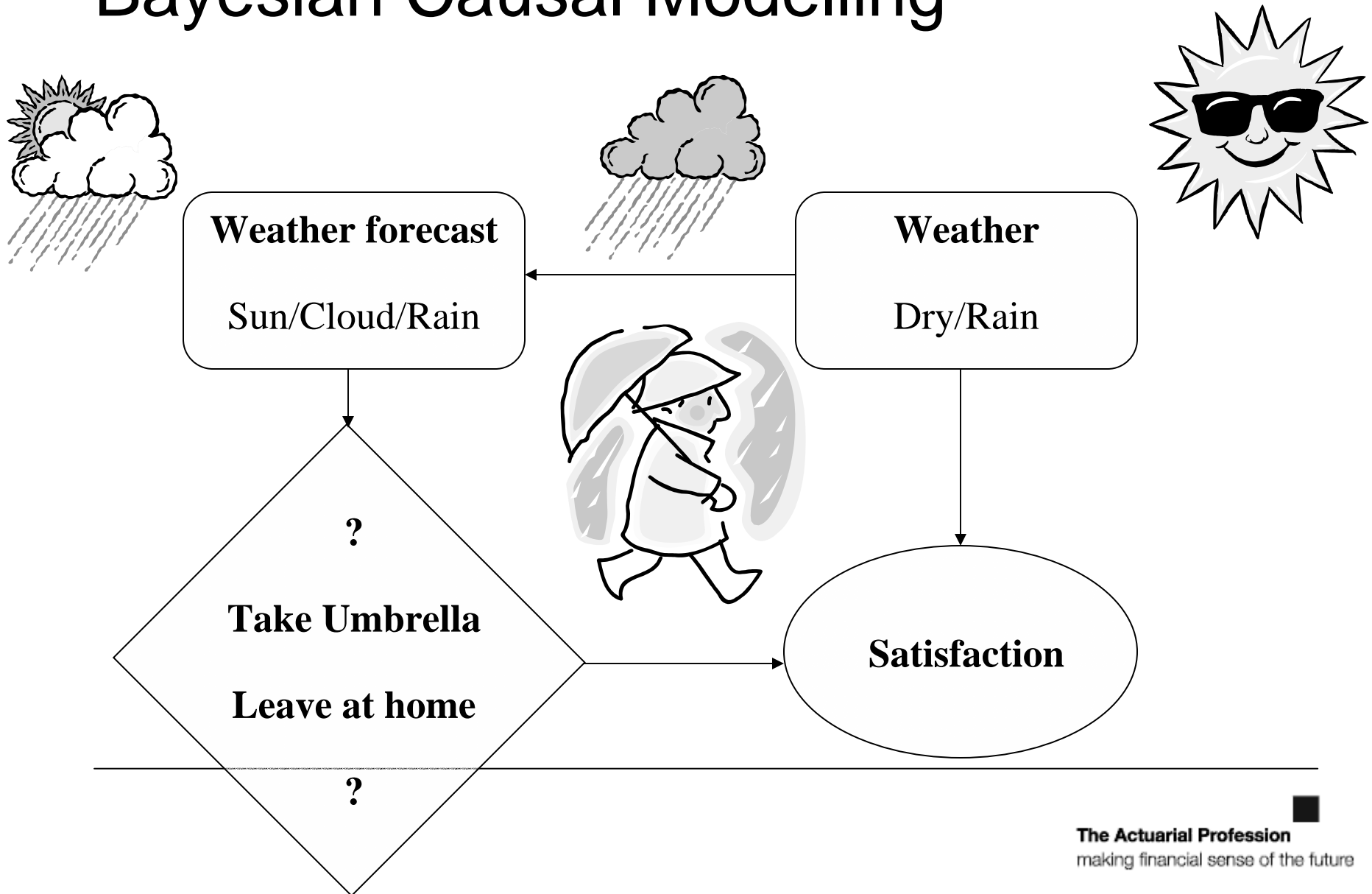
Risk Maps – Outsourcing of claims handling



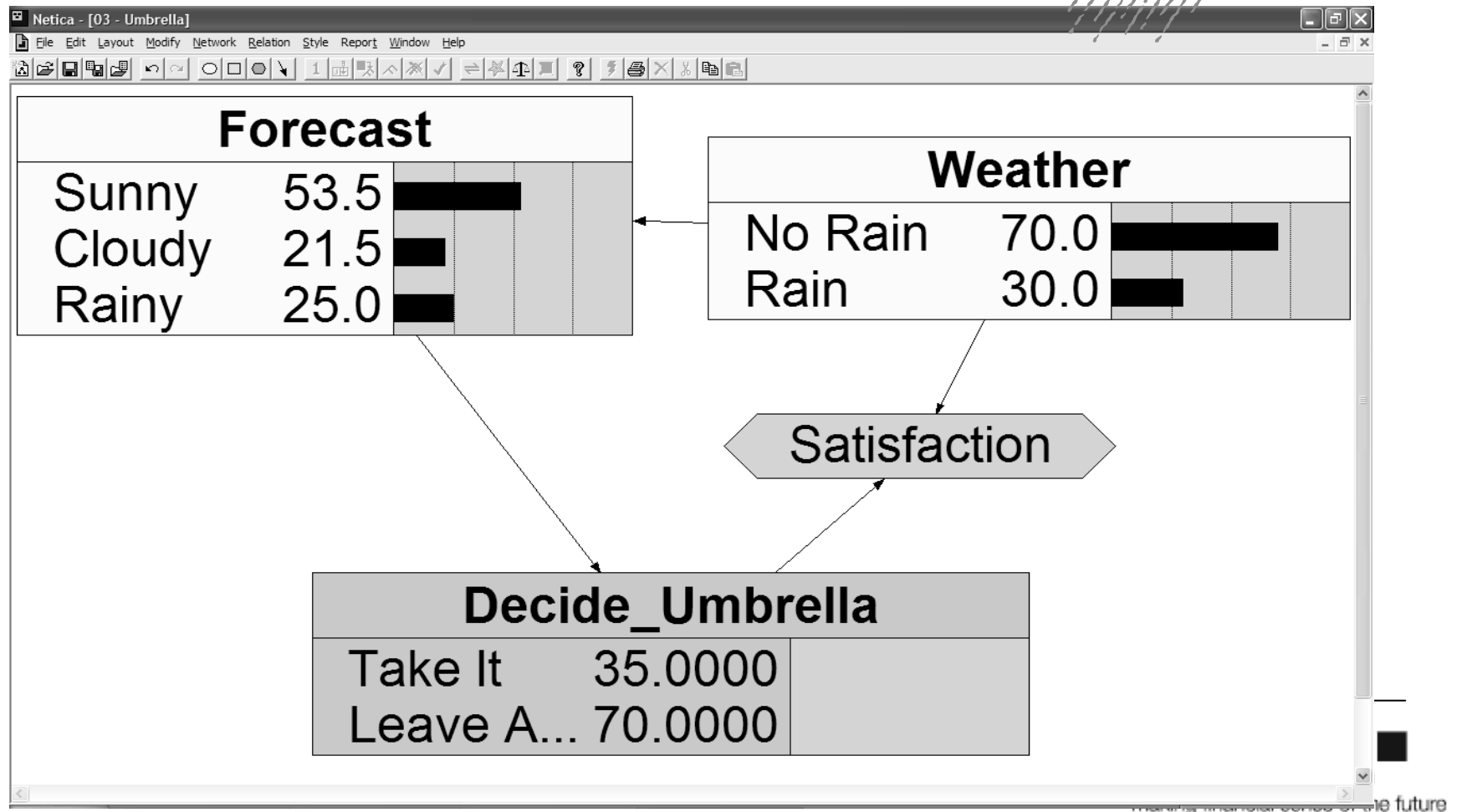
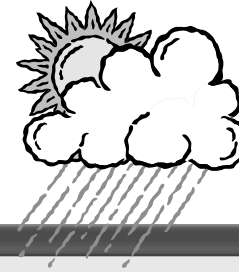
Causal modelling



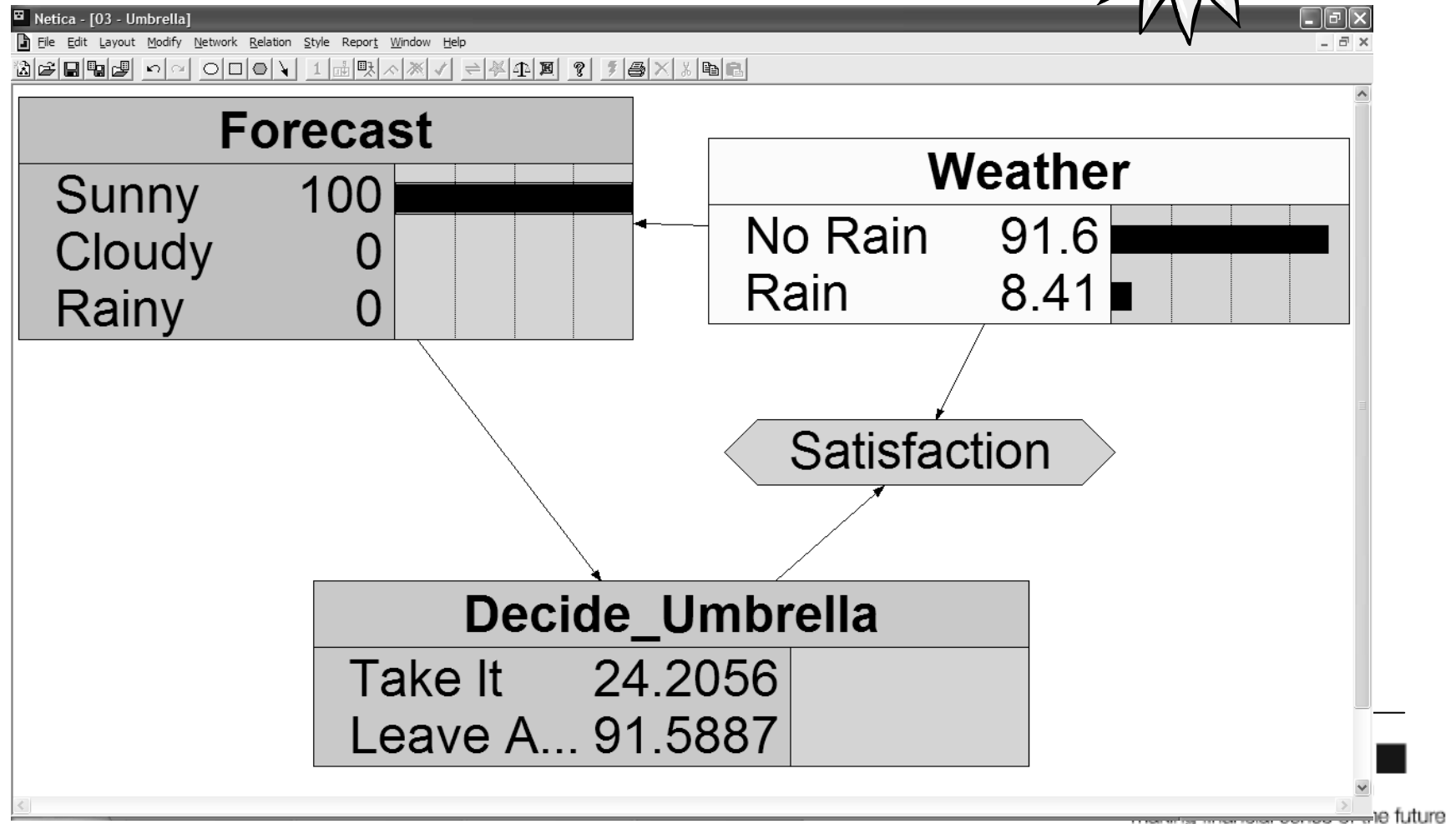
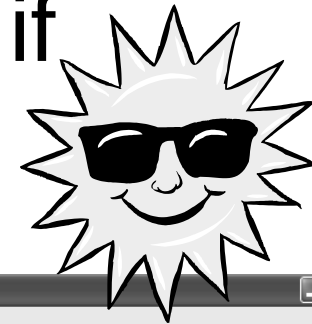
Bayesian Causal Modelling



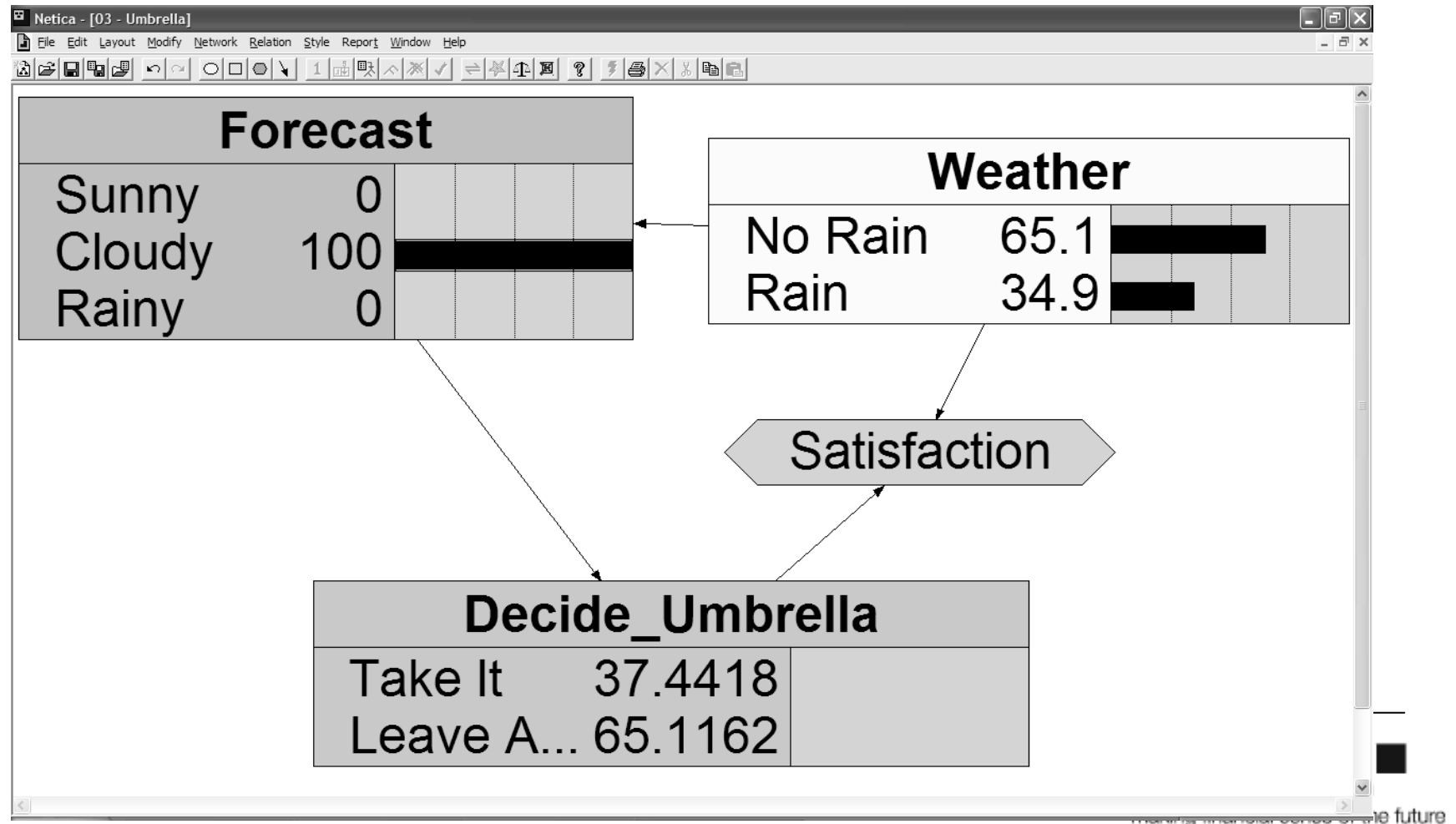
Bayesian Umbrella Decision: untrained causal model



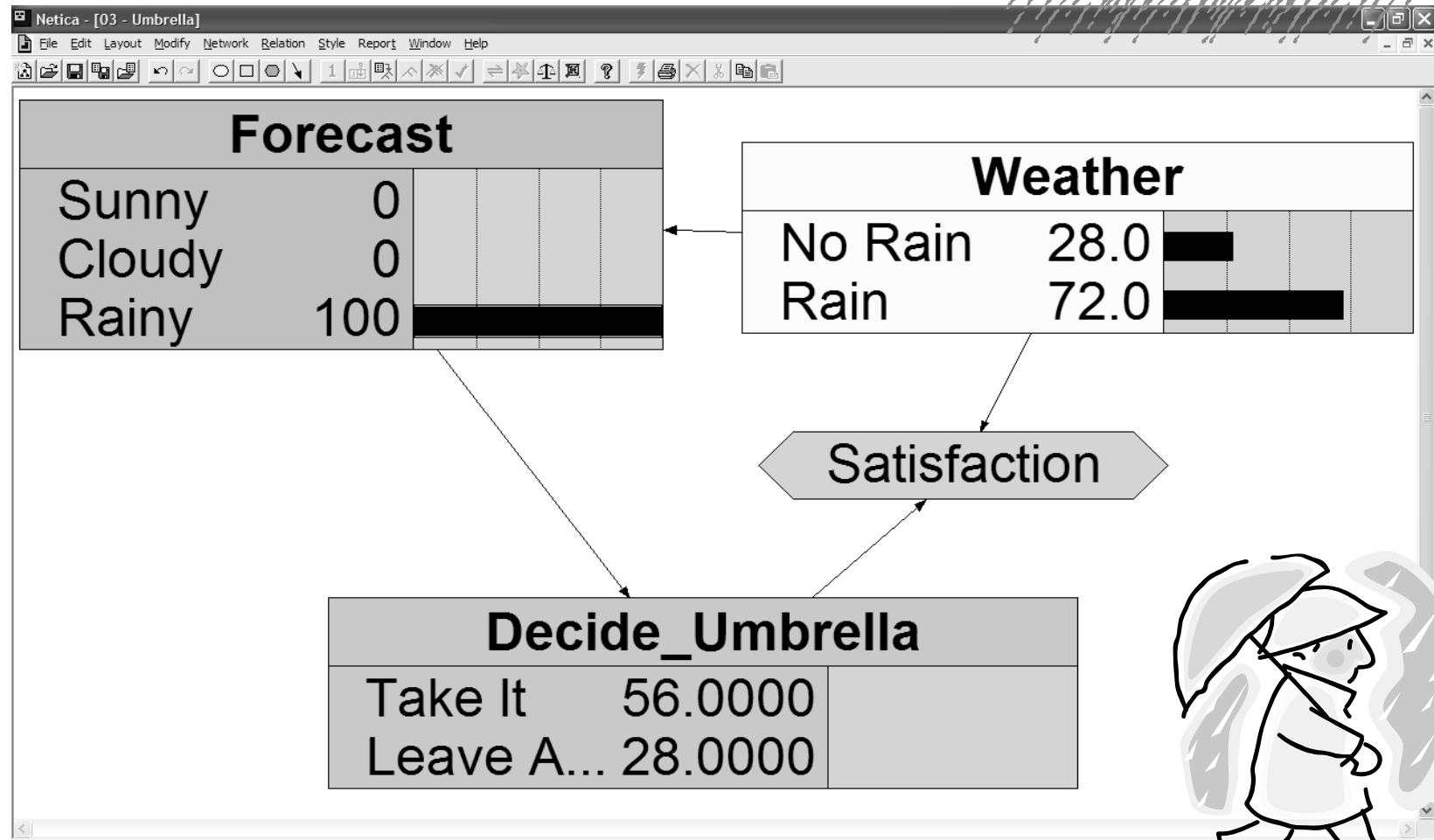
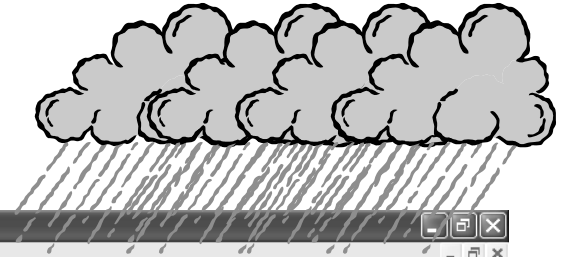
Bayesian Umbrella Decision: if forecast is Sunny



Bayesian Umbrella Decision: if forecast is Cloudy

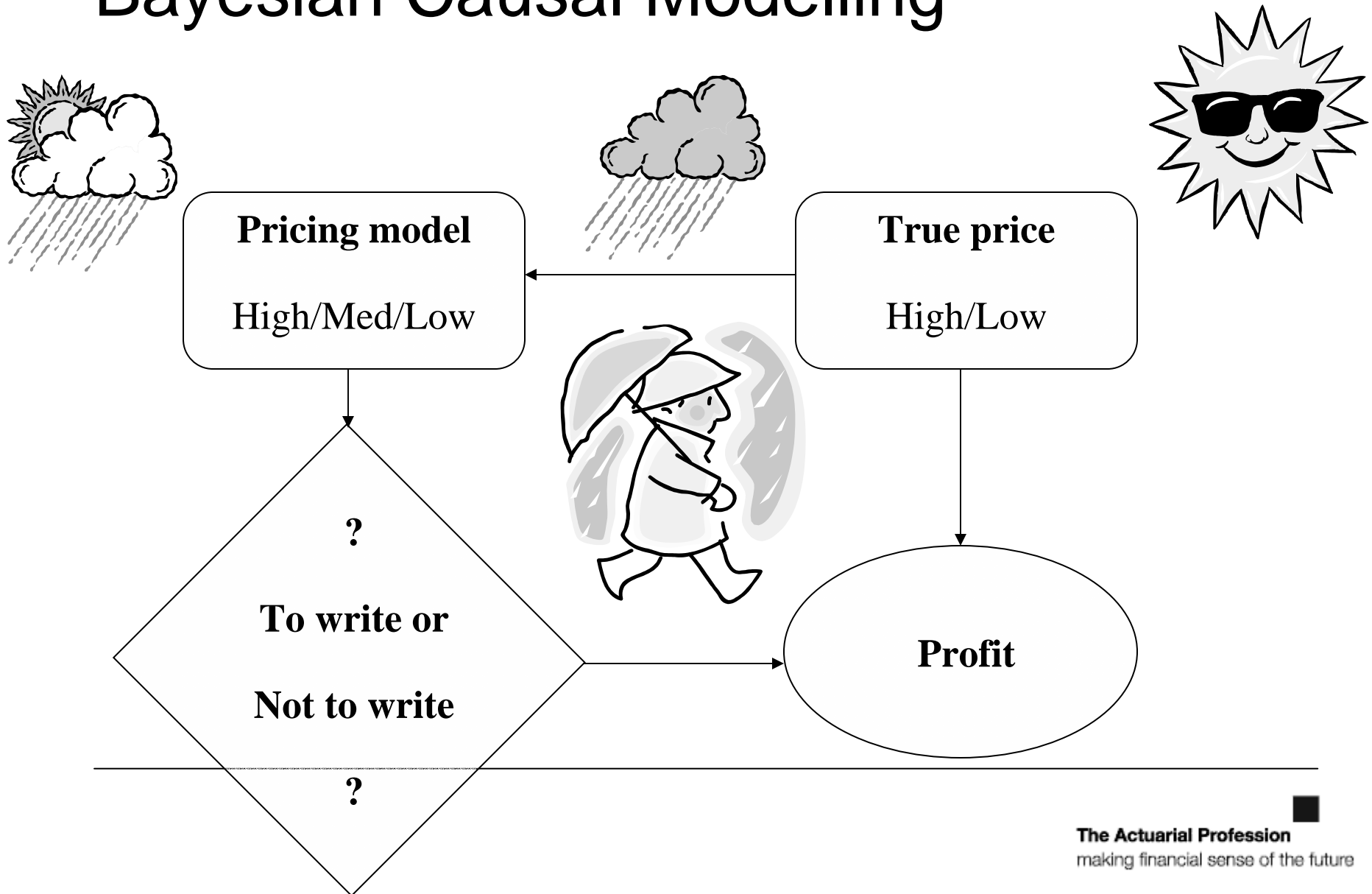


Bayesian Umbrella Decision: if forecast is Rainy



making financial sense of the future

Bayesian Causal Modelling



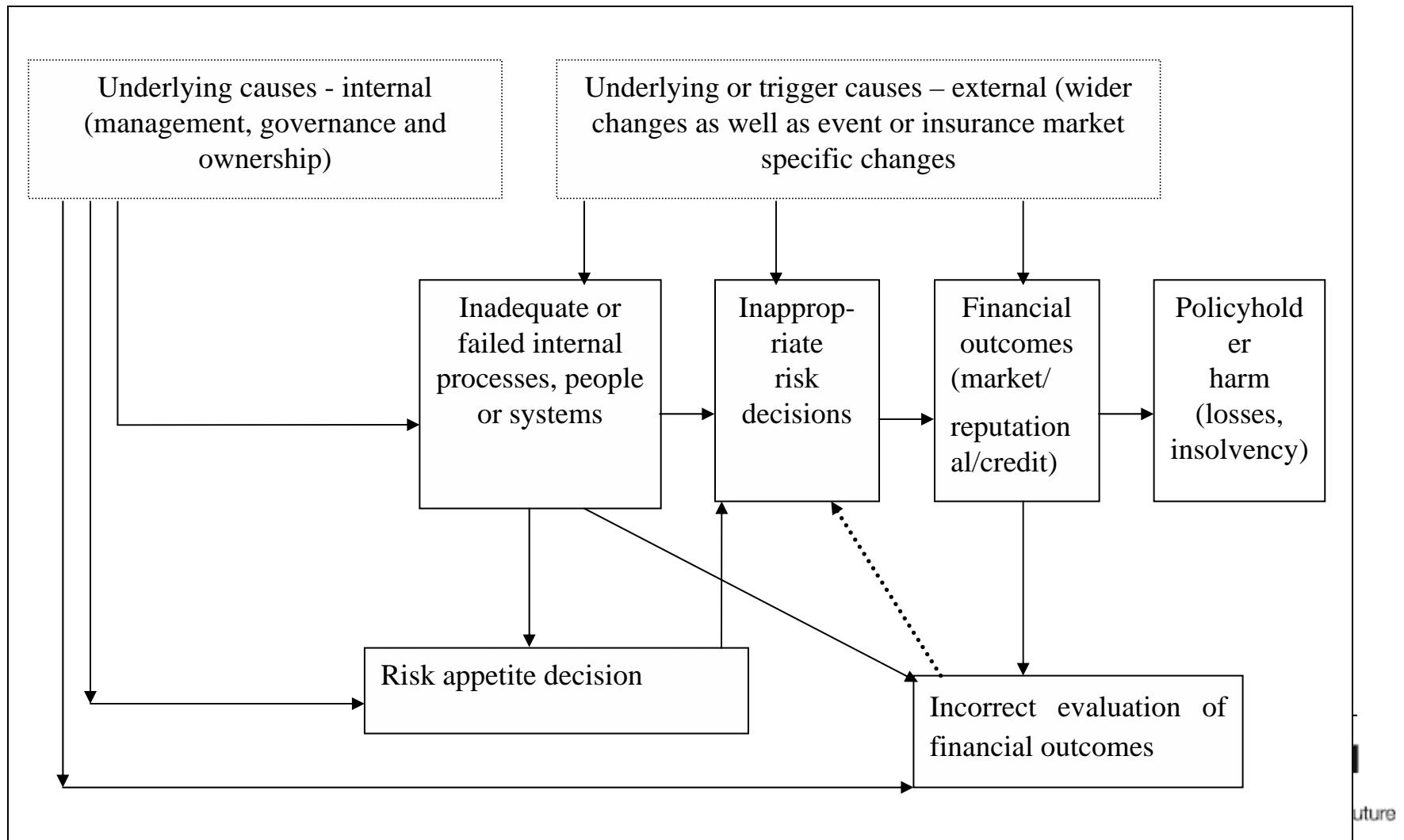
Bayesian Causal Modelling

- A risk map showing cause-effect relationships, a belief network, an influence diagram
- Belief network can be developed via discussion between members of key business units
- Incorporate feedback control loops – Control Cycle

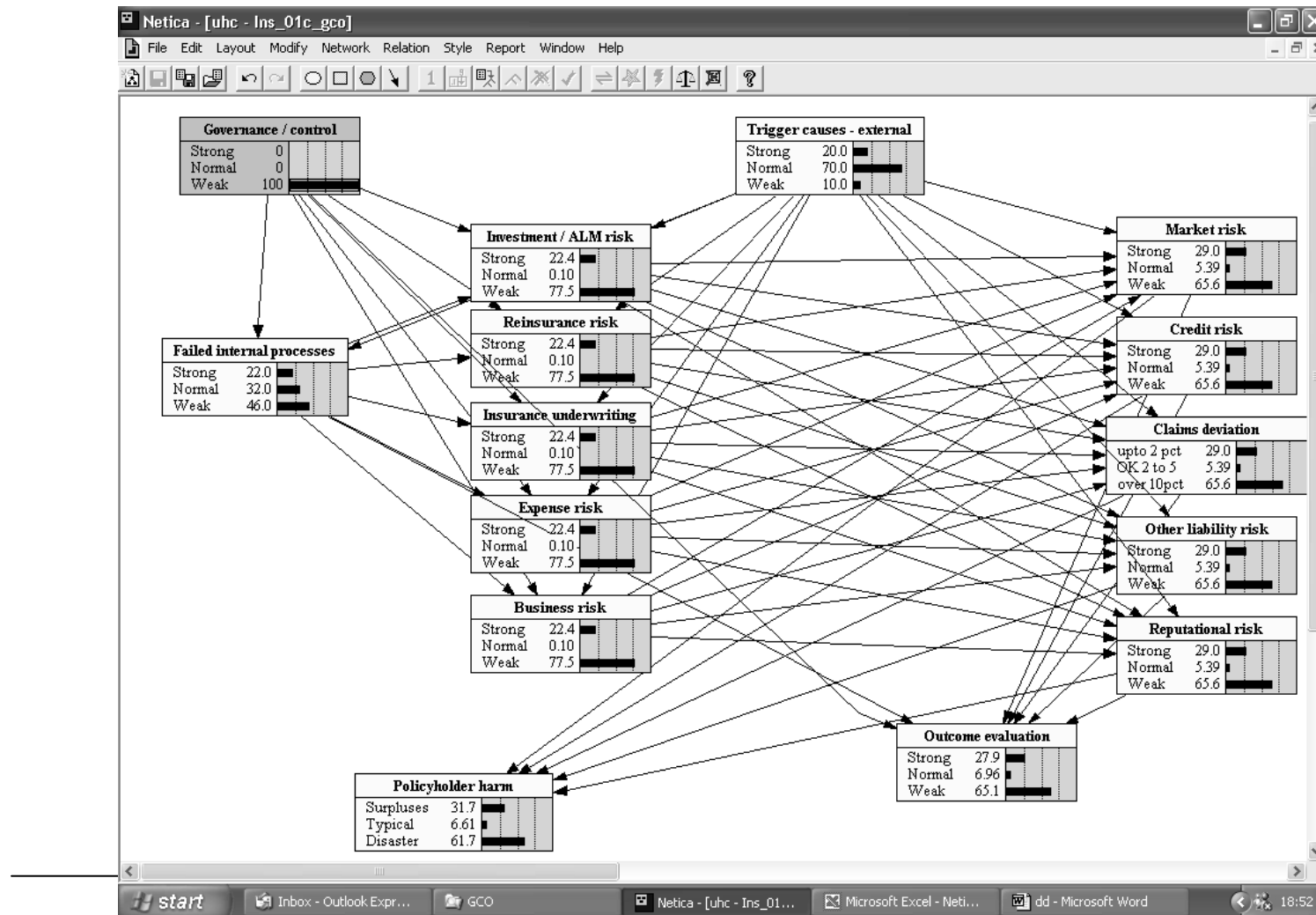
Can help

- Apply beliefs about a system to a model and test fit
- Describe relationships between trigger causes and controls

Bayesian Causal Modelling for Enterprise wide risk management

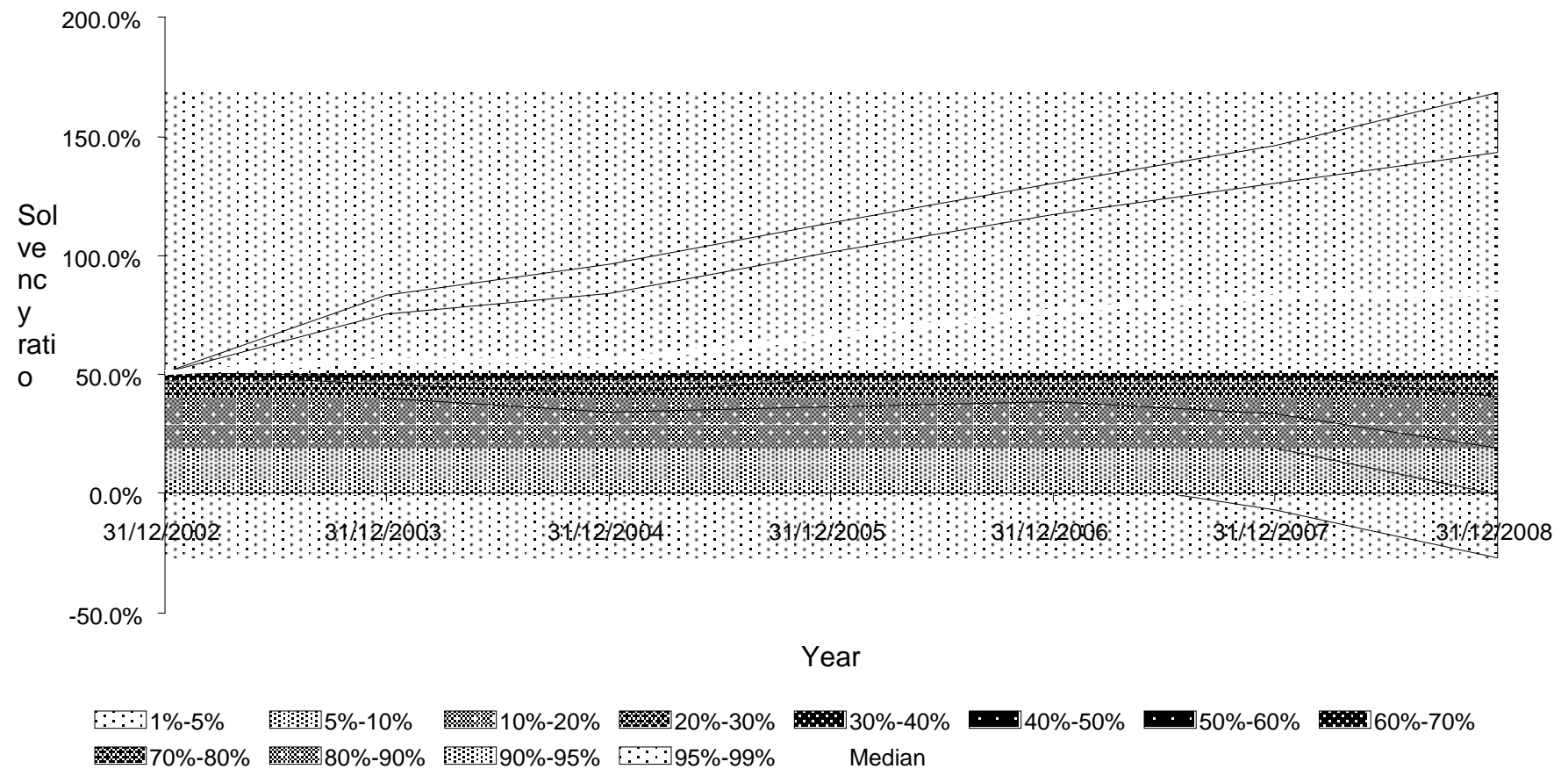


Bayesian Causal Modelling



Risk Appetite

Funnel plot



Agenda

- What is Operational Risk
- Our sessional paper
 - Case study
 - Soft Issues
 - Methods
 - Conclusions and messages
- **Discussion**

Discussion

- Questions & observations?
- Areas of further investigation?
- What are you doing now?
- What should the industry be doing?
- How will Op Risk modelling develop?
 - Measurement accepted?
 - Focus on soft issues and monitoring & controls?



The Actuarial Profession
making financial sense of the future

Current Issues in General Insurance: Operational Risk

Gregory Overton, 26th April 2004