NZSA Financial Services Forum

ERM: making it work for the business

ERM to date

- Predominately related to Basel 11 and insurer regulatory capital
- Banks around the world must have spend billions on modelling market, credit and operational risk
- Insurers and banks are grappling with contagion risks and extreme risks
- Modelling has conveniently ignored the risks that can't be easily quantified, including extreme risks
- Boards are being held accountable for implementation of risk management processes, including being asked to explain how their organisation is implementing a risk culture.

Australian Big 4 Bank Regulatory Capital
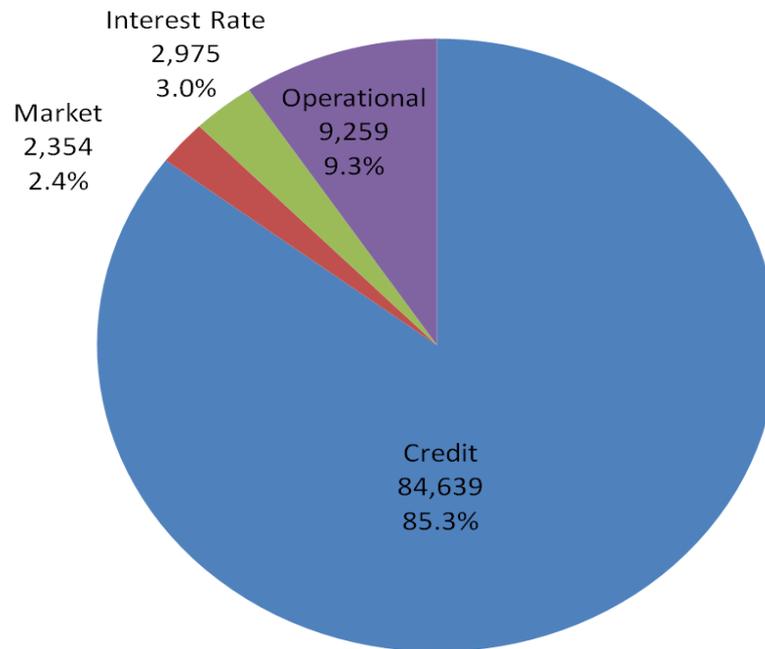
The Consequences

- Boards are beginning to seriously question what businesses they want to be in

- Creation of sustainable risk cultures isn't working very well

- Processes to determine and manage emerging risks isn't working too well

- We may well be seeing market inefficiencies emerge

- The bottom line is that the aspects of risk management that matter to a business aren't progressing very well

Risk Culture: impossible?

- The fundamental principle of a bureaucracy is to break the functions up into small areas where it is easier to adequately train and replace the operators.

- Such a structure isolates operating people into small groups with some pyramid management structure attached

- This is the opposite of the structure required for a sustainable risk culture to emerge as a risk culture requires continual interacting between functions to identify emerging risks

What do Businesses want from their risk management spend?

- The overall objective of risk management is to manage the earnings of the business within an acceptable range

- Businesses want to be reasonably confident this will occur

- It can only occur if there is

   * management of risks within business units

   * an understanding of how the risks might relate

   * communication of risk results to identify changes

What is Management of Risks?

- It is not regulatory capital
- It is not about quantification of risks
- It involves identification of the drivers of risks, and management of these to the agreed level
- It is about taking on risks that the business wishes to do

The risk management process is out 180 deg

- Risk management should be about working out what risks a business has in place or emerging

- Determining what are the drivers causing those risks to arise

- Determining which drivers need to be reduced/eliminated

- Then, determining the capital to hold to ensure sustainability of the business to the required level.

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The nature of financial institutions

- They operate in a dynamic world, interacting with other financial institutions and other businesses

- They react to changes in the financial markets based on what those organisations they interrelate with have done historically and are expected to do

- Financial institutions are then continually reorganizing, adapting and innovating

- They are subject to the Red Queen problem: The Red Queen principle is derived from *Alice Through the Looking Glass* where the exchange went "Well in our country, said Alice, still panting a little, you'd generally get to somewhere else if you ran very fast for a long time as we've been doing. A slow kind of country! said the Red Queen. Now here, you see, it takes all the running you can do, to be in the same place."

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The failure of Quantitative Analysis

- Statistical analysis assumes a high degree of replicability over time

- Financial institutions are adapting, reorganizing and innovating which is the opposite criteria required to validate statistical analysis

- Statistical analysis for regulatory capital may be appropriate where the institution cannot/ will not determine their own risk capital as it is only an approximation, and needs to be able to be implemented by a range of institutions as cheaply as possible.

How to add value from risk management

- The risk management function is then aimed at identifying and managing the risks inherent or imported into the business

- The necessary components are:

  * a process to identify risks and their drivers/
    causes

  * a process to determine what risks are to be
    reduced/eliminated

  * a process to continually monitor outcomes

Identification

- Communication across the business is the critical issue
- Both bottom up and top down required
- Needs to be owned by both the business units and management
- Need a dedicated person to be responsible for it happening
- It is continual so irregular meetings will fail; an online system is required
- Staff need to be motivated to participate at all levels

Drivers

- Identification of the drivers is not an easy task
- Drivers don't act in isolation, they combine to result in a risk event
- Initial set of drivers need to be tested regularly to detect any emerging combinations
- Cladistics analysis borrowed from evolutionary theory has been used successfully to identify combinations of drivers

Cladistics Analysis (1)

- Non linear approach suited to complex adaptive systems
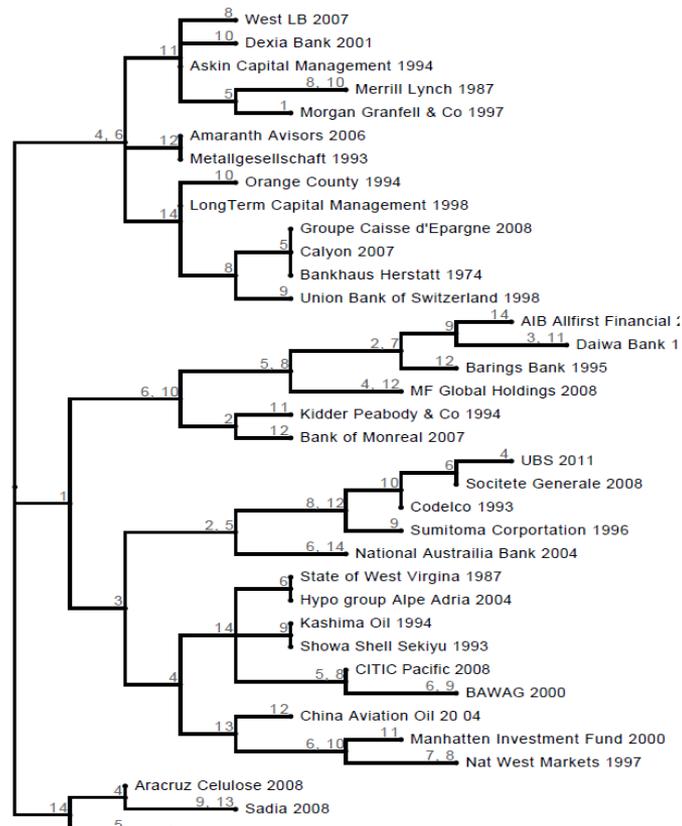- Applied initially in biology:

Cladistics Analysis (2)

- Has been applied to management, financial markets, analysis of WEF global risks, evolution of motorbike design!

- It's a process that links characteristics of events/outcomes together such that the number of branches is minimised
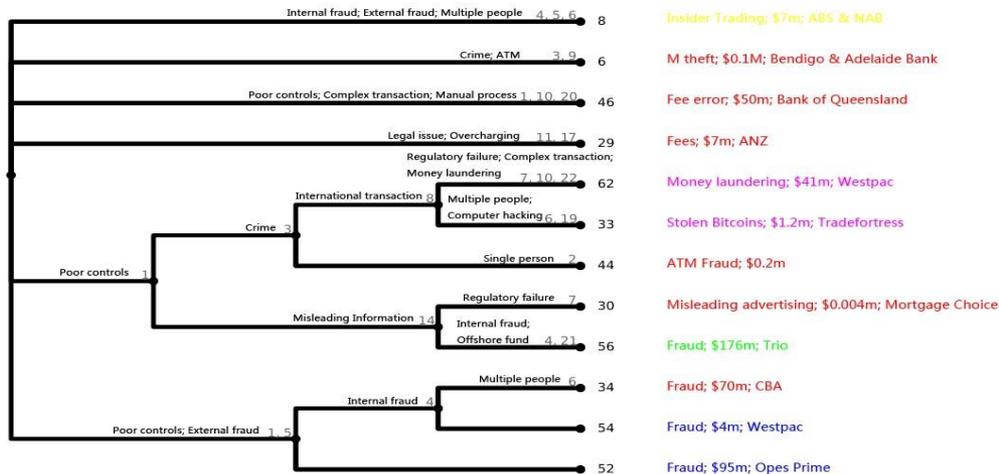
Derivative Analysis (Allan & Corrigan)

Australian Banks Operational risks

Australian Banks Operational risks 2010- 2014

Major Characteristics

ATM
Crime
External fraud
Legal issue
Poor controls
Single person

Australian banks operational losses 2010-2014

Characteristic	Percentage of Total Losses
Poor controls	60.1%
Internal fraud	27.7%
Legal issues	22.8%
Regulatory issues	16.6%
Bank cross selling	11.4%
External fraud	9.7%
Overcharging	8.1%
Crime	7.0%
Money laundering	1.0%
Misleading information	0.4%
Employment issues	0.1%
Computer hacking	0.0%
Human error	0.0%

Australian Banks Operational risks 2010-2014

- For individual years, poor controls are a major Level 1 characteristic of the risk events, followed by external fraud, legal issues and single persons.
- Level 2 results suggest that complex products, internal fraud and regulatory failures need to be watched as they may well be emerging as major characteristics;
- There are a lot of traditional characteristics that are assumed to drive operational risk events that have not appeared as being very important
- Both multiple people and a single person characteristics can occur
- The emergence of complex products as a characteristic linked with poor controls around 2012 is indicating that where complex products are being introduced, enhanced controls need to be adopted.

What does this type of analysis bring?

- It can inform management of the major characteristics of risk events that are not obvious

- It can inform management of emerging linkages

- It can inform regulatory capital

- It can allow management to do cost benefit analysis of reducing risk losses

- It meets all three criteria for risk management, a process to identify, manage cost effectively, continually monitoring.

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Health Warning

- Industry wide results may not be applicable to an individual financial institution
- The process does not show path dependency
- The "trees" may well show evolution in biology, but they do not in finance; the linkages may not have occurred in the order derived by the tree
- There is model risk in the algorithm used to derive the trees

Where does this leave us?

- ERM now needs to move forward to serve the business

- We need to enforce communication across the bureaucracy

- We need to engage new models to assist with understanding the risk characteristics, traditional statistical models wont work in the process of informing management