



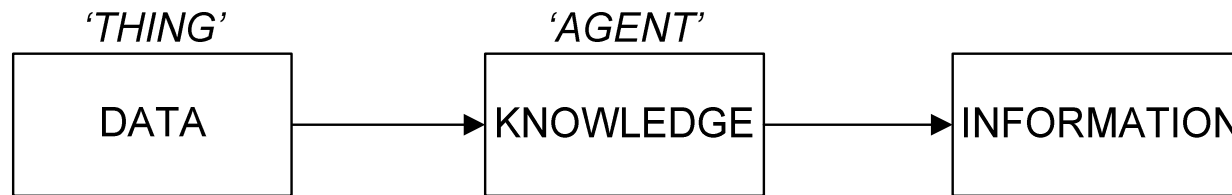
# **Information as a Strategic Asset in an Asymmetric Unconventional Conflict**

**Brett van Niekerk & Manoj Maharaj**

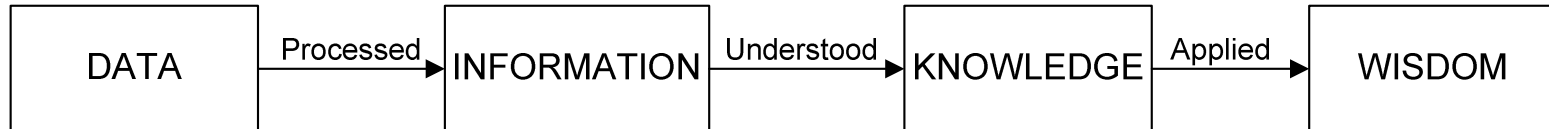
# PRESENTATION OVERVIEW

- Information, Data & Knowledge.
- History of information operations and strategic information.
- State of play of asymmetric conflict.
- 3D Risk Assessment.
- Application to egress protection and the role of business intelligence.

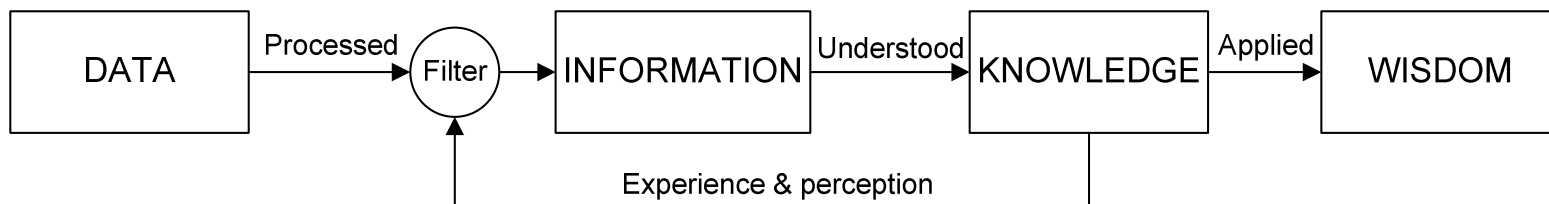
# INFORMATION, DATA & KNOWLEDGE



**Figure 1:** The Relationship between Data, Information and Knowledge, adapted from Hutchinson, 2002



**Figure 2:** Data Fusion Model, adapted from Waltz, 1998



**Figure 3:** The Extended Model for Information Relationships

# INFORMATION OPERATIONS & STRATEGIC INFORMATION

- Info Ops (IO): Gathering intelligence, knowledge management, information security, perception management
- Concepts of IO & strategic information appear in ancient mythology: Trojan Horse, Norse god Loki & fall of the gods
- Military Philosophers: Sextus Julius Frontinus, Sun Tzu, von Seeckt
- WW2 code breaking & deception operations
- Censorship during Cold War & Apartheid

# STATE OF PLAY OF PLAY OF ASYMMETRIC CONFLICT

<b>Table 1: Armed Conflicts 2002-2005</b>				
	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Minor (25-999 deaths p.a.)	25	24	25	27
Major / War (>1000 deaths p.a.)	7	5	7	5
<b>Total</b>	<b>32</b>	<b>29</b>	<b>32</b>	<b>32</b>
Source: UCDP/PRIO Armed Conflict Dataset Ver.4-2009; Gleditsch et al. (2002)				

<b>Table 2: Non-State Armed Conflicts</b>				
<b>Region</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Africa, Sub-Saharan	24	23	17	14
Americas	2	2	4	3
Asia, Central and South	3	5	3	4
Asia, East & SE & Oceania	2	0	1	1
Middle East & North Africa	3	3	3	3
<b>Total</b>	<b>34</b>	<b>33</b>	<b>28</b>	<b>25</b>
Source: UCDP/Human Security Centre Dataset, 2007.				

# STATE OF PLAY OF PLAY OF ASYMMETRIC CONFLICT

- Piracy
- Cyberwar
- Asymmetric conflict in business
  - Guerrilla warfare in business, smaller flexible companies have advantage
  - IT breaks international boundaries
- Information Security
  - Laws & standards
  - Ingress & egress protection

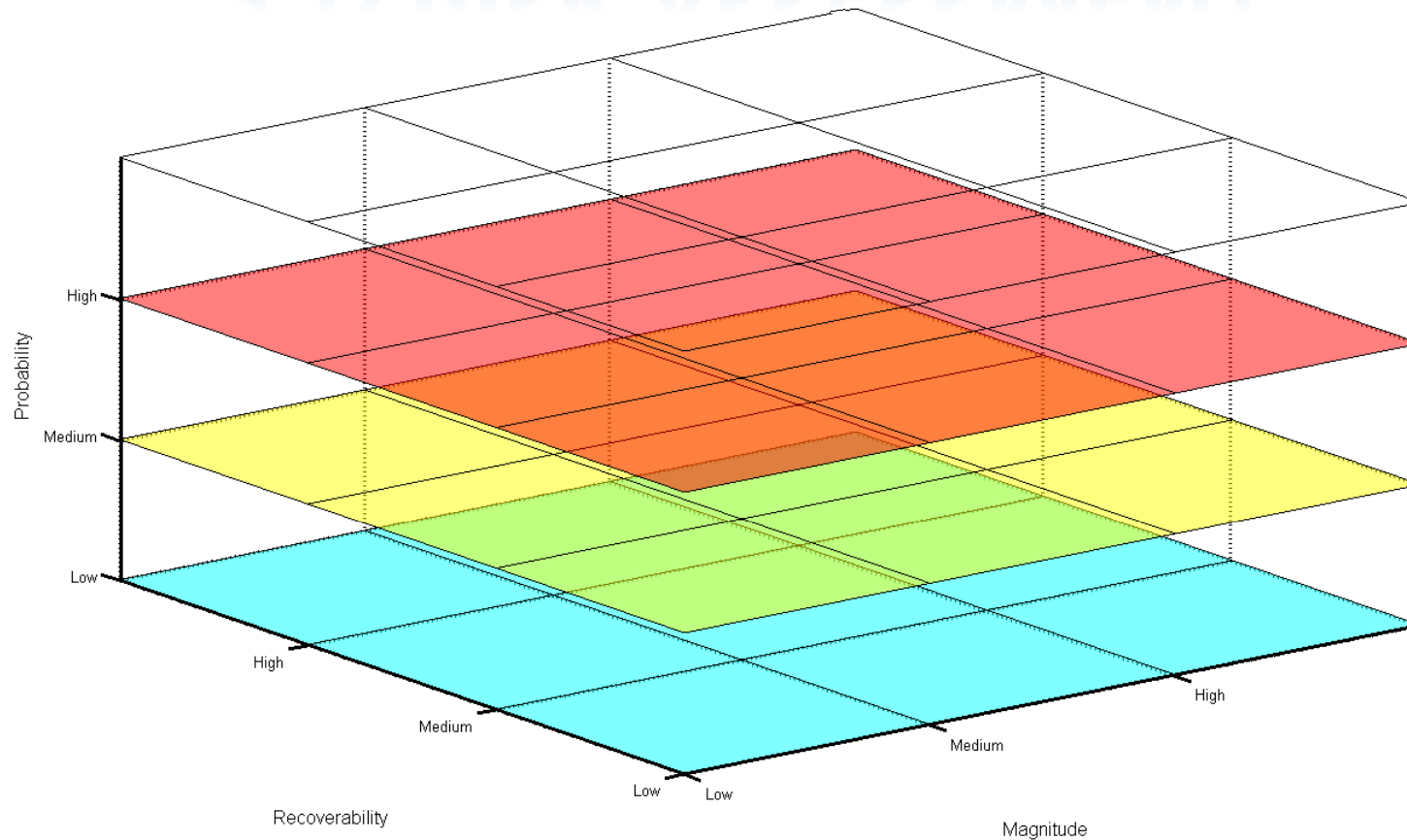
# 3-D RISK ASSESSMENT

Risk = Probability of incident x Magnitude of incident

<b>Table 3: Risk Prioritisation (Peltier et al., 2003)</b>				
		<b>Magnitude</b>		
		<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Probability</b>	<b>Low</b>	1	4	7
	<b>Medium</b>	2	5	8
	<b>High</b>	3	6	9

<b>Table 4: Vulnerability Distinctions (Anderson et al, 1999)</b>		
	<b>Damage Potential</b>	
	<b>Limited</b>	<b>Serious</b>
<b>Easy to fix</b>	Type 1 (easy/limited)	Type 2 (easy/serious)
<b>Difficult to fix</b>	Type 3 (difficult/limited)	Type 4 (difficult/serious)

# 3-D RISK ASSESSMENT



**Figure 4:** 3-D Grid for Risks

$$\text{Risk} = \text{Probability} \times \text{Magnitude} \times \text{Recoverability}$$

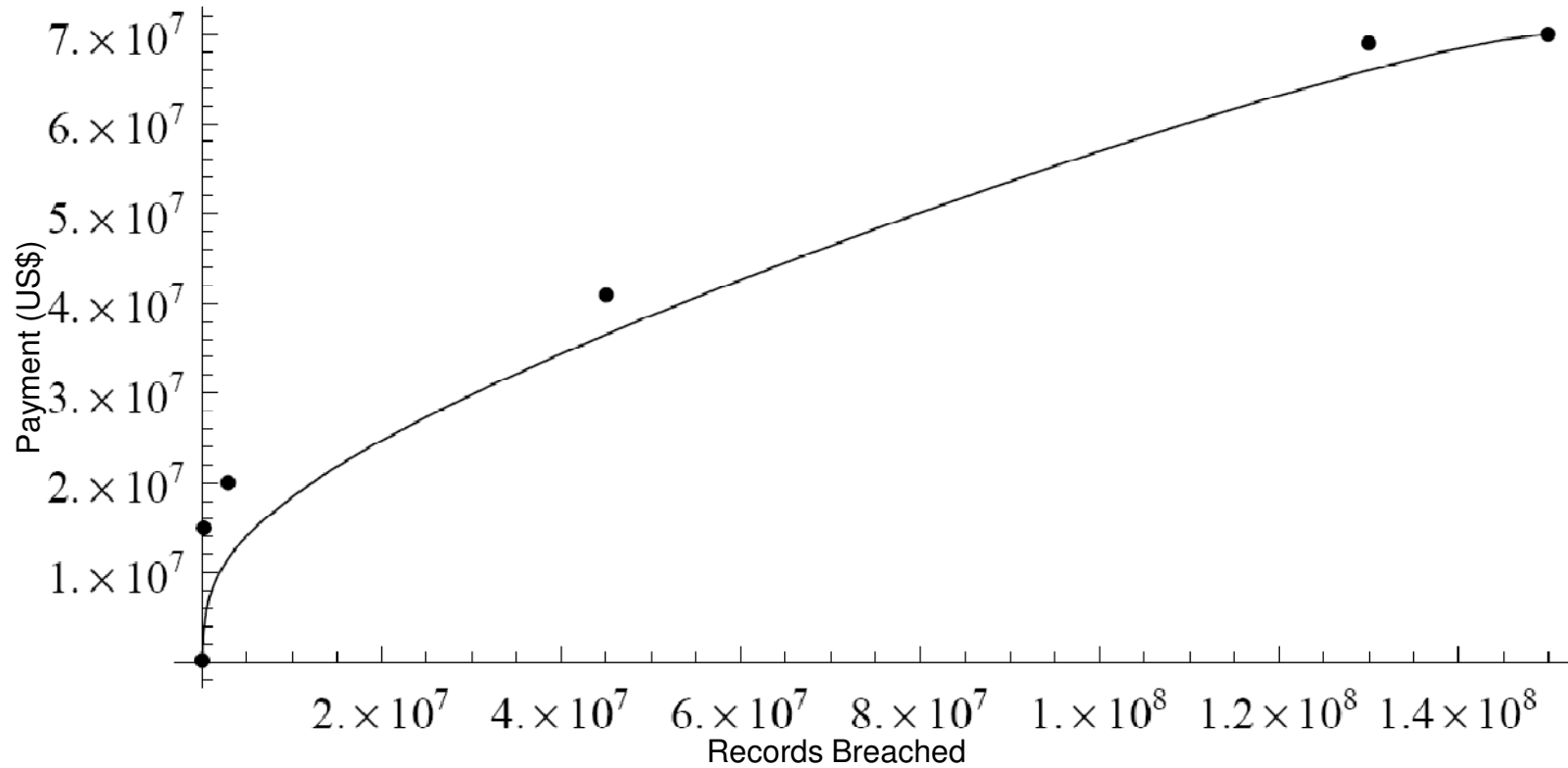


# 3-D RISK ASSESSMENT



Priority	Probability	Magnitude	Recoverability
1 Critical	High	High	High
2 High	High	Medium	Medium
	Medium	High	Medium
	Medium	Medium	High
3 Medium high	High	Medium	Medium
	Medium	High	Medium
	Medium	Medium	High
4 Low high	Medium	Medium	Medium
5 High medium	High	High	Low
	High	Low	High
	Low	High	High
6 Medium	High	Medium	Low
	High	Low	Medium
	Medium	High	Low
	Medium	Low	High
	Low	High	Medium
	Low	Medium	High
7 Low medium	Medium	Medium	Low
	Medium	Low	Medium
	Low	Medium	Medium
8 High low	High	Low	Low
	Low	High	Low
	Low	Low	High
9 Medium low	Medium	Low	Low
	Low	Medium	Low
	Low	Low	Medium
10 Lowest	Low	Low	Low

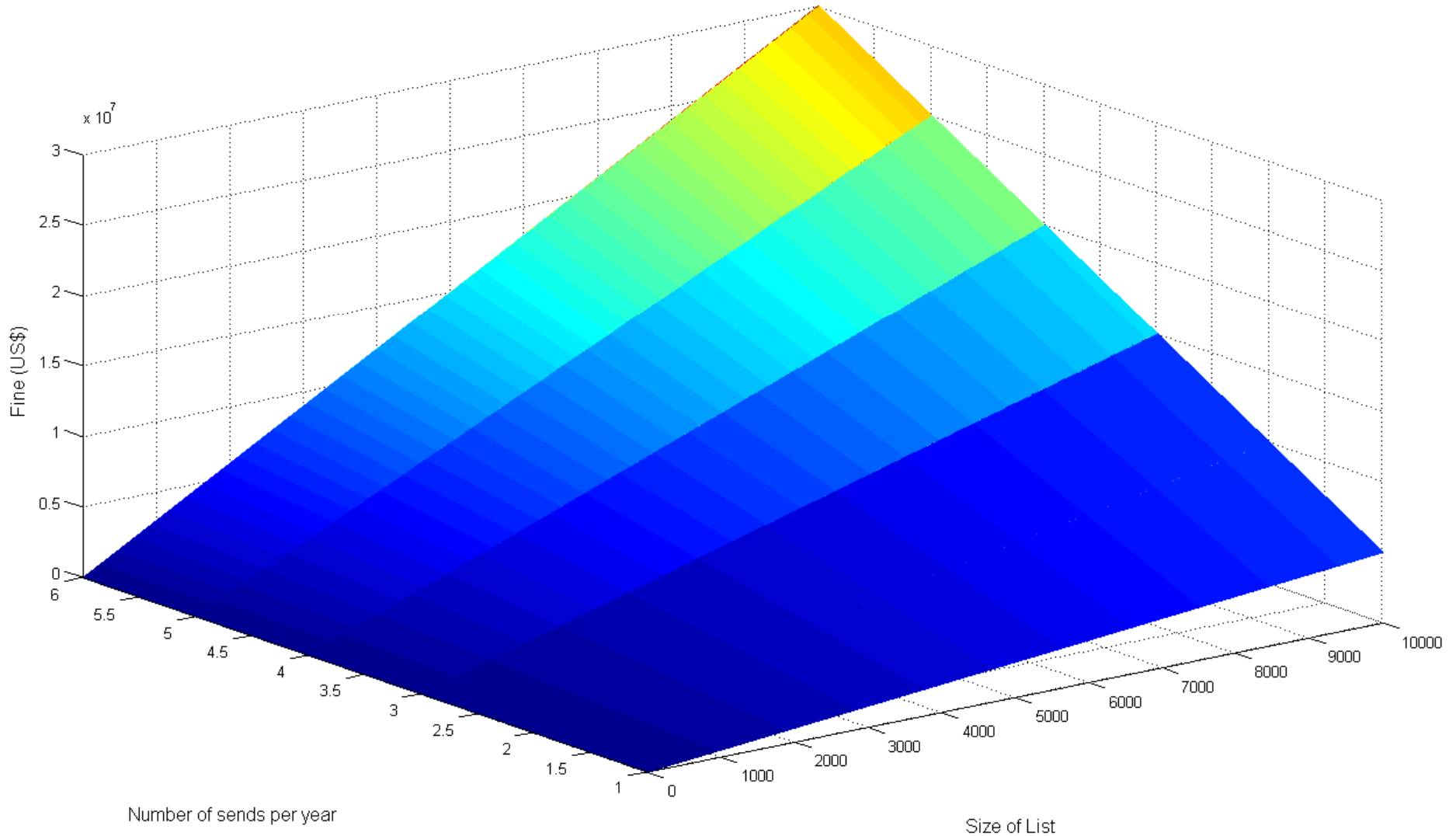
# COMPENSATION ANALYSIS



**Figure 5:** Plot of payment for number of records breached

# COMPENSATION ANALYSIS

Fine (US\$) = 500 x Size of email list x Number of times per year that emails sent



# RECENT EXAMPLES

- Average cost per record breached = \$204 / £64
  - Malicious breach ~ \$215 / £76
  - Negligent insider ~ \$154
  - Systems glitch ~ \$166
  - Ponemon Institute, 2010
- Liability of customer / bank for fraud
- Liability of software companies for flaws in code that result in security breaches.
- SA: Protection of Personal Information Bill

# CONCLUSION

- Data, information & knowledge can shape decisions, actions and responses.
- The use of information operations and strategic information can give an asymmetric advantage.
- Expand risk assessment frameworks.
- Business intelligence to assess liabilities, probabilities.



Thank you.

Questions?

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