Improving Information Security Management: an Australian Universities case study.

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Topics

1. Overview
2. Information Security Management Issues
3. Security Practitioner's Management Model
4. Conclusion

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Overview

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Overview

- The design of a model which integrates and shows the relationship between:
  - Organisational context
  - Behavioural aspects
  - Functional management
  - Practical use (to security practitioners)

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The University Environment

- Diverse and often conflicting goals:
  - Corporate mandates
  - Provision of education
  - Cultural and pedagogical pursuits of academic:
    - Teaching
    - Learning
    - Research

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Literature Overview

- Not much on security management in universities
- Focus on:
  - Senior management ~ effective corporate governance
  - approaches to operation security management
  - policy frameworks and content
  - awareness of security, cultural compliance to security
- In many cases security is not prioritised in line with its accepted importance

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Methodology

- **Data generation:**
  - **Survey (35 open, closed questions) with 100% participation from all AVC Australian universities**
  - **Researcher's role as Information Security Manager at Southern Cross University**
- **Gathered data:**
  - **Synthesised into the Security Practitioner's Management Model**

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Information Security Management Issues

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Issues

- What is the current status of information security management?
- What are the key issues surrounding information security management?
- How could information security management be improved?

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Senior Management Involvement

➢ Key issues

- **Institutions that maintain strong reporting and communication to senior management have a clear advantage in terms of resourcing and support.**
- **Only approximately one third of institutions maintain reporting yet suffer resource and support issues.**

➢ How to improve?

- **Improve structure of approach to include reporting and ensure security is aligned to business as corporate governance issues over assets and reputation.**

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Security Management Approach

➢ Key issues

- Various standards in use.
- Difficulties in how to implement approach.
- Lack of structured, coordinated approach.

➢ How to improve?

- Adopt a coordinated, structured enterprise approach.
- Incorporate organisational requirements within Security Manager's model.

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Security Policy

➢ Key issues

- Policy development and implementation effectiveness varies widely.
- Policy considered to fundamentally underpin security.
- Issues with policy monitoring and enforcement.

➢ How to improve?

- Look to international standards.
- Adoption policy 'abstraction and refinement'.
- Increase awareness on policy.

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Security Awareness

➢ Key issues

- Security awareness lacking resulting in users constructing their own reality of security risks.
- Security awareness raising not prioritised due to resourcing.

➢ How to improve?

- Adopt strategic, targeted continuous awareness program.
- Model on 'framework and content' as NIST recommends.
- Integrate behavioral theory where appropriate.

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Security Compliance

➢ Key issues

- Emerging regulatory drivers.
- Difficulties in measuring security effectiveness due to intangibility.
- Point based solutions emerging.

➢ How to improve?

- Seek organisational compliance from a cultural perspective via security management model.
- Seek balancing factors including technology based policy enforcement.

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Security Practitioner's Management Model

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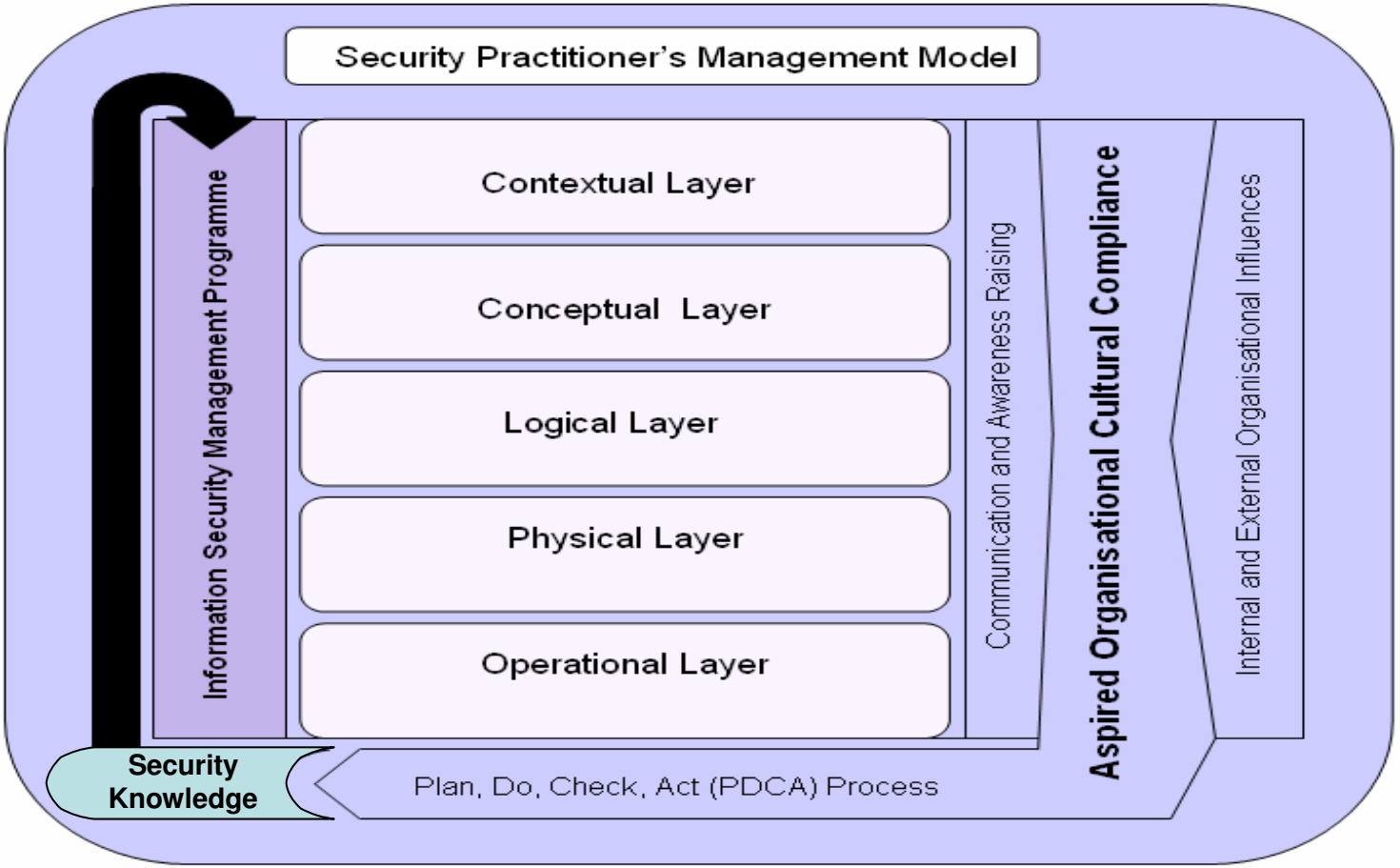
Security Practitioner's Management Model



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A Systemic Approach

- **Operational level goal:**
  - **To enable security practitioners to apply the management of information security in a structured and cohesive manner**
- **Organisational level goal:**
  - **To increase the transparency and effectiveness of the information security process towards organisational goals**

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The Use of Standards in the Model

- **Any information security management standards can be incorporated into the model.**
- **Hybrid best-practices can be incorporated into the model.**
- **Enables consistency with business risk management and control framework.**

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Process Flow through the Model

1. Feed in security practitioner's knowledge.
2. Channel knowledge through contextual, conceptual, logical, physical, operational layers.
3. Encourages cultural compliance.
4. Which feeds back to 1.

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Communication and Awareness

- **Motivation of people through:**
  - **Active participation**
  - **Persuasive communication**
- **Technology Acceptance Model (TAM)**
- **Learned behaviour**
- **Recognition**

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Validation

- Strong applied research component
- Qualitative research model
- Real-world phenomena methodology
- Thematic data analysis technique:
  - triangulation of observations, participation, literature reviews and the survey instrument
  - inductive model for illuminating processes

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Conclusion

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Conclusion

- Universities are an important foundation of society
- Security Practitioner's Management Model encourages:
  - Transparent, accountable data processes
  - Balance between civil liberties and state-based control (i.e. security and privacy)
  - Acceptance of knowledge-gathering role of security practitioner
  - Raised awareness and compliance of all staff

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Thank you!

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- Dr. Nev Meyers (Associate Supervisor)

Q&A