System Security Group | Lancaster University

Cyber Threat Intelligence

Aims

- Understand the need for CTI
- Understand the foundations of CTI
- Understand the building blocks of CTI

Introduction

- How can you know the risk without knowing the threat?
- Threat assessment is the bed rock of a good risk assessment
  - Allows you to explore who/what might be after you
  - Informs the risk analysis process

Threats

- Threat = those things that may pose a danger to your information security
- Threat Actor is the agent that poses the threat
    - Can be malicious or accidental
    - Have the opportunity and capability to exploit a vulnerability

Threat Assessment

- Threat assessment identifies the threats to the organisation
- Identifies the likely culprits
- Threat assessment in this space is not very mature
  - Often borrows from other environments/domains
  - Difficult to provide quantified, accurate and repeatable outcomes

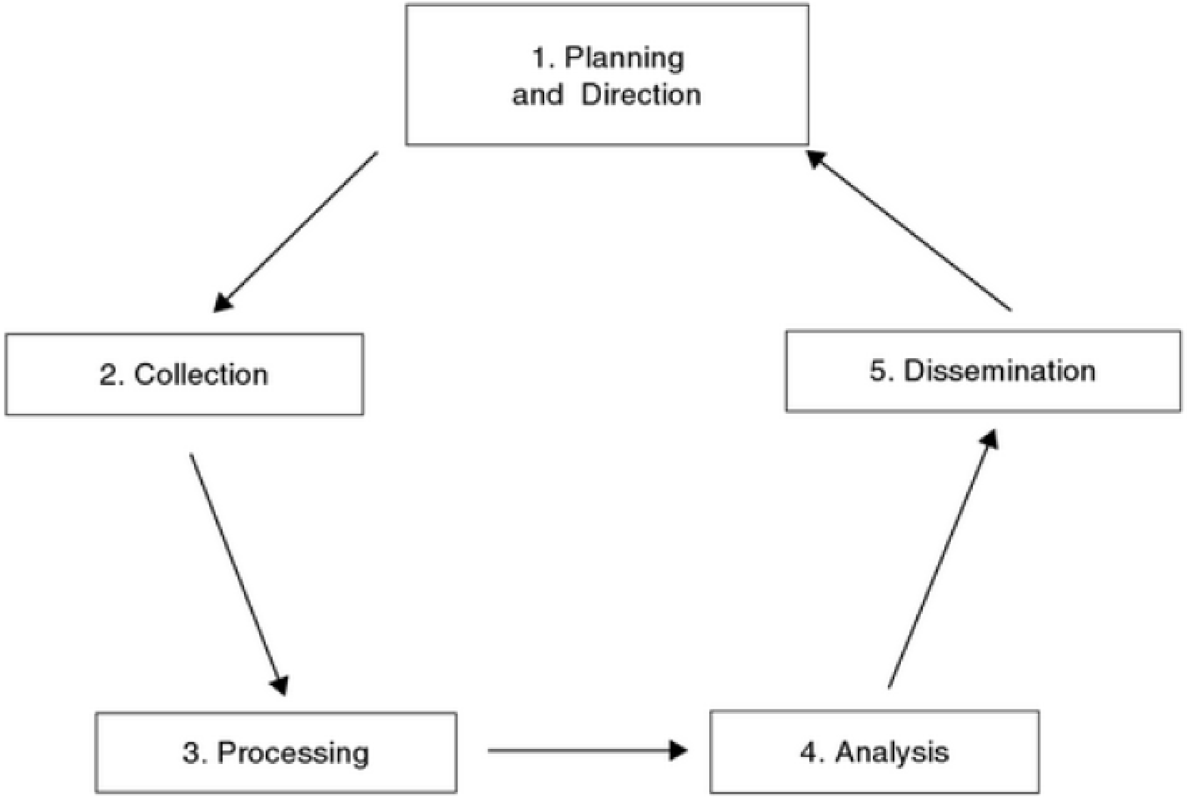
Background

- Threat assessments were regularly carried out by nation states on other nation states
  - Later businesses started to apply techniques for the market place
- National threat analysis done by experts
  - Normally considered over lengthy periods
- Threat Analysts will tend to specialise in specific parts of the threat spectrum, geographical region etc.

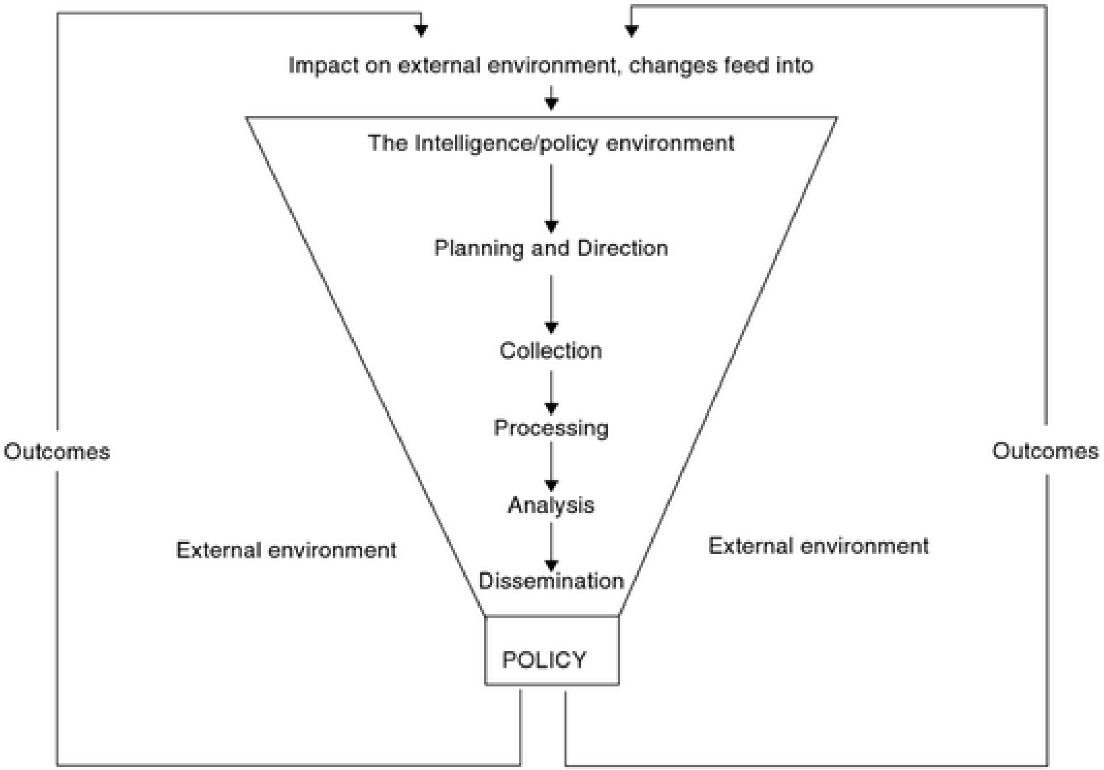
Time Period

- State threat analysis normally has a long time period to make assessments
- State attacks are normally a lengthy diplomacy phase coupled with a military build up
- Terrorist attacks may not have a diplomacy phase but still need planning and deployment
- Cyber attacks have short timescales
  - Build up maybe unobservable
  - Lower threshold to initiate
  - No requirement to move physical resources
  - Can attack from any location
  - Limited observable indicators
  - 1 attacker has all that they need

Creating Intelligence



The Intelligence Funnel



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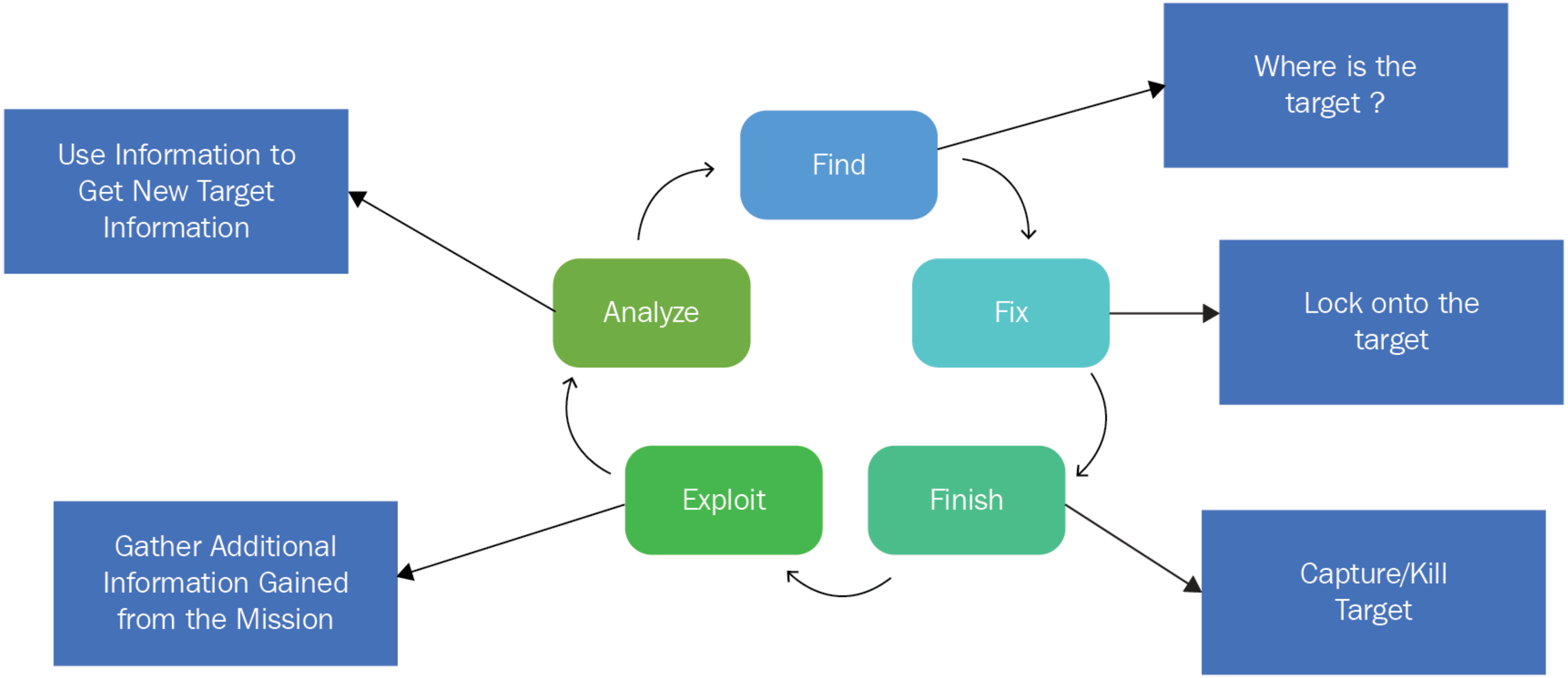
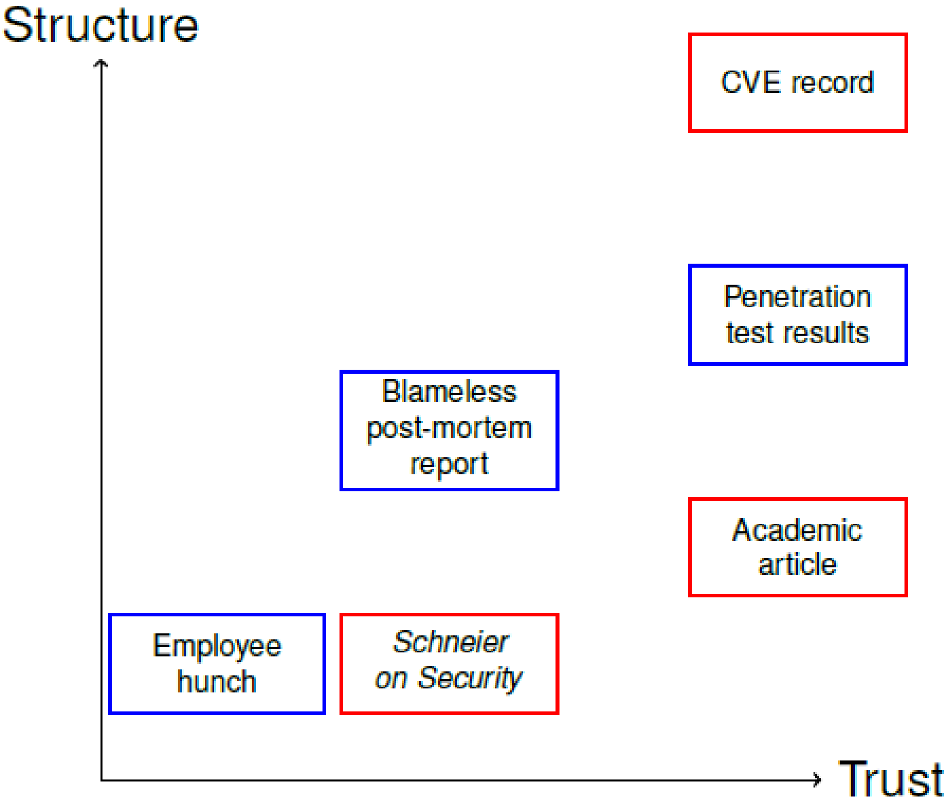
Military Targeting Process

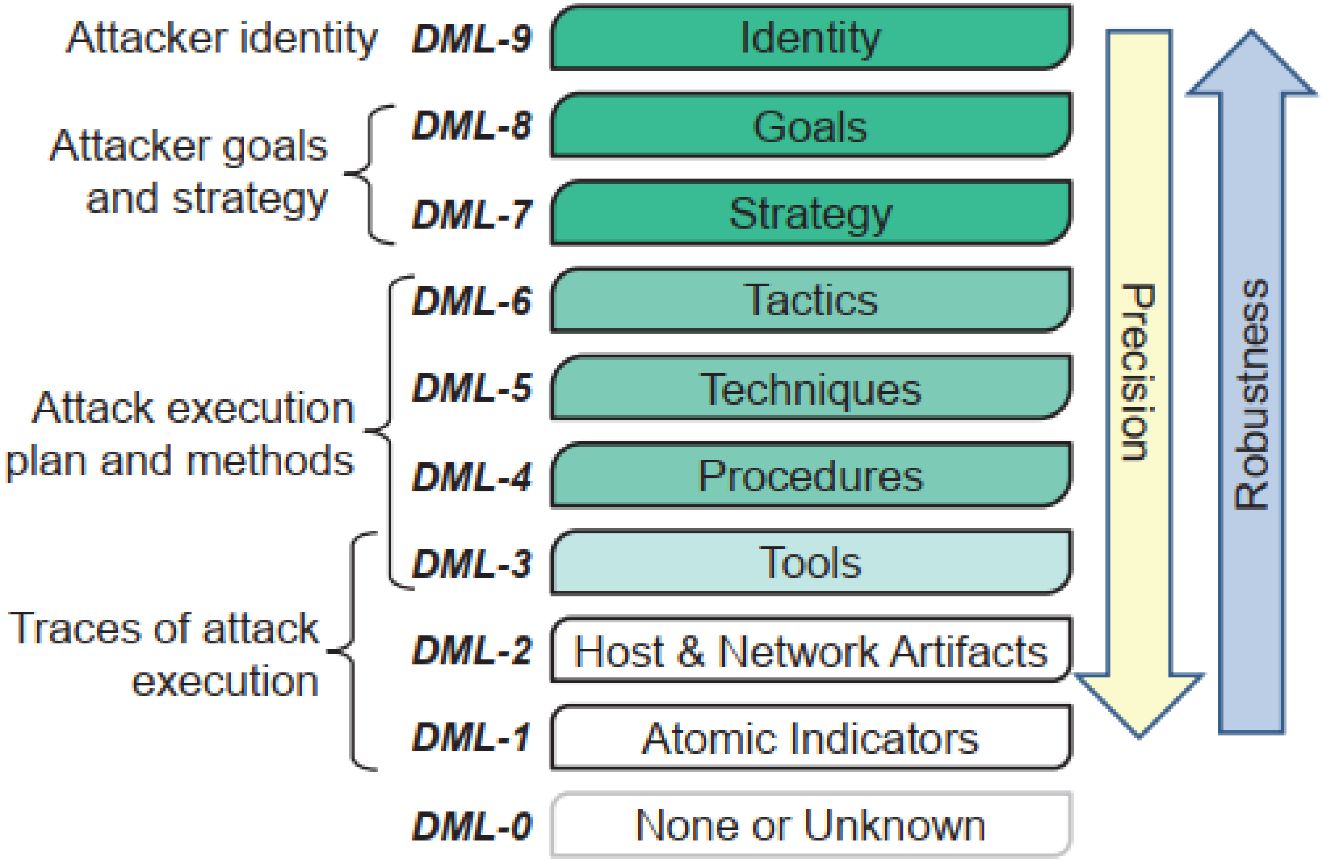


Find
Fix
Finish
Exploit
Analyze
Where is the target ?
Lock onto the target
Capture/Kill Target
Gather Additional Information Gained from the Mission
Use Information to Get New Target Information

Data Sources



Maturity


Attacker identity
DML-9
Identity
Attacker goals and strategy
DML-8
Goals
DML-7
Strategy
Attack execution plan and methods
DML-6
Tactics
DML-5
Techniques
DML-4
Procedures
DML-3
Tools
Traces of attack execution
DML-2
Host & Network Artifacts
DML-1
Atomic Indicators
DML-0
None or Unknown
Precision
Robustness

Questions?

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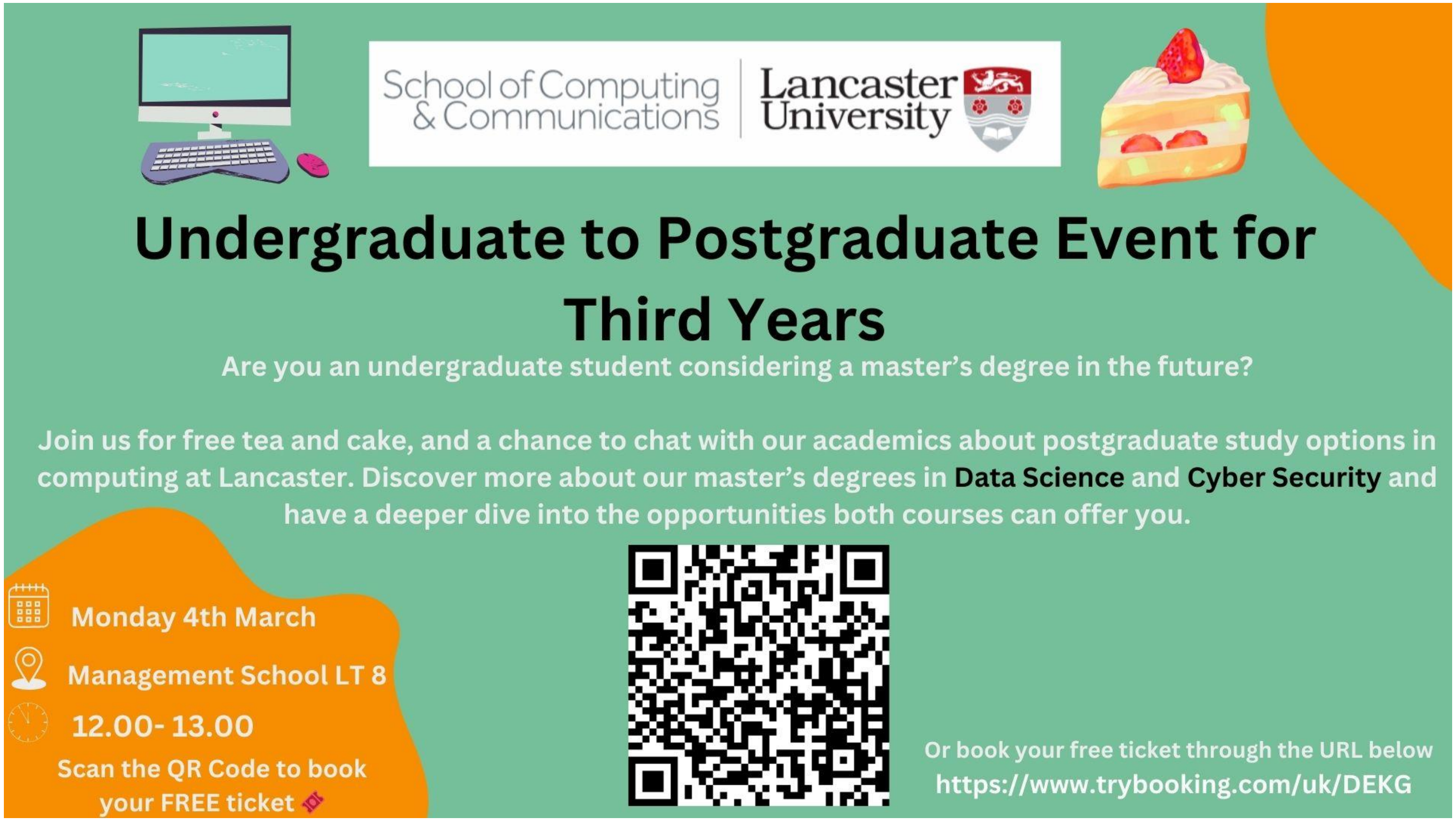

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