WASHINGTON STATE UNIVERSITY

Human Behavior and the Organizational Context of Information Security

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CySER

Block 1

Understanding the Human and Organizational Security Context

Risks, Threats, and Vulnerabilities

Risk	Likelihood that something bad will happen to an asset
Threat	Any action that could damage an asset
Vulnerability	A weakness that allows a threat to be realized or to have an effect on an asset

Adapted from Kim and Solomon (2018)

Internet of Things (IoT)

- What is it?

Group Activity 1

- In groups of 2 or 3 answer the following questions. Be prepared to share your answers.
  - Identify one or two IoT technologies and discuss the benefits and risks associated with each.
  - Who receives the benefit and who is threatened by the risk?

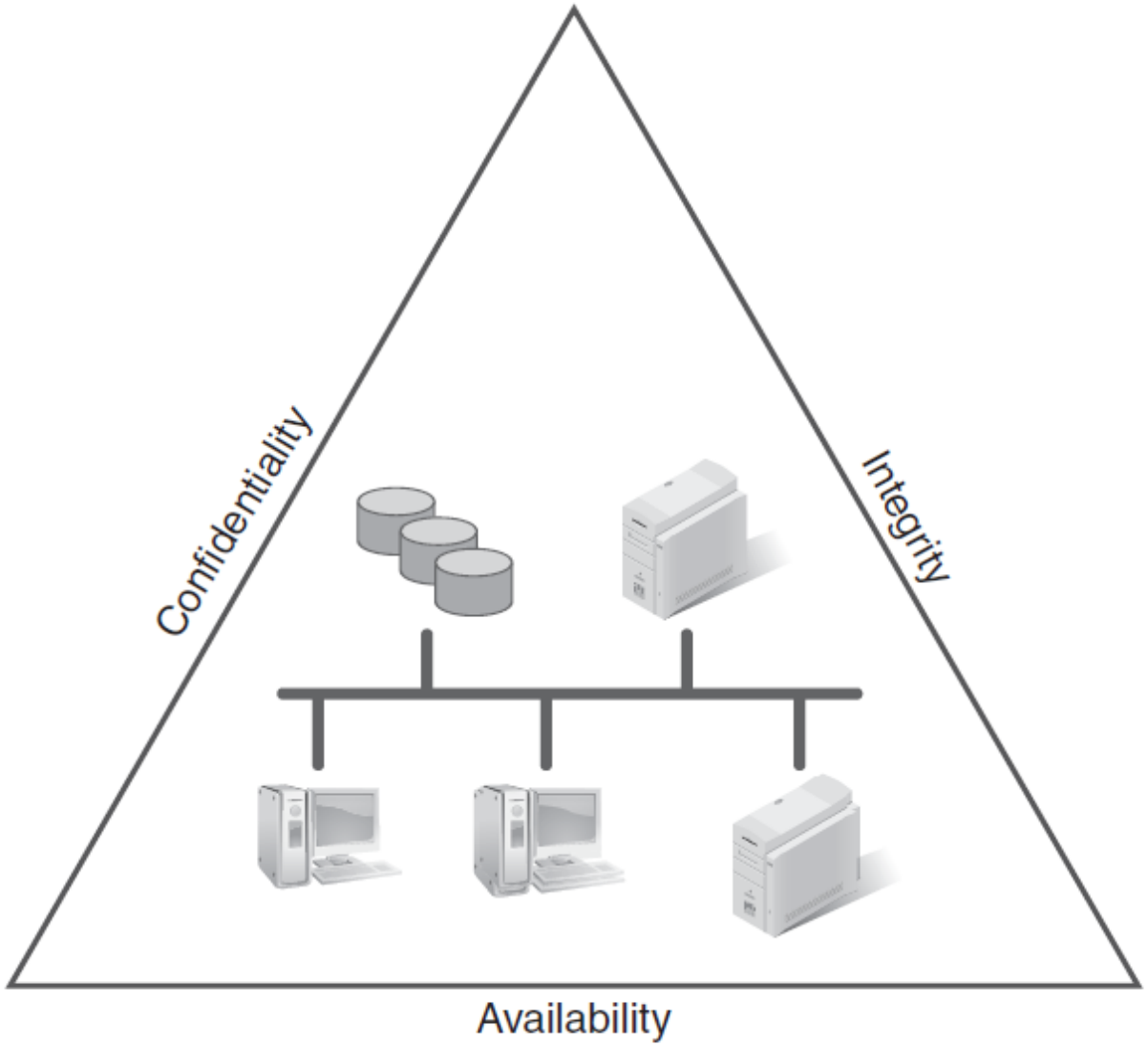
Weakest Link in the Security of an IT Infrastructure

User is weakest link in security

Group Activity 2

- In groups of 2 or 3 answer the following questions. Be prepared to share your answers.
  - Identify possible threats caused by individuals.
  - For each threat, indicate what could be done to mitigate that threat.

Tenets of Information Systems Security



Adapted from Kim and Solomon (2018)

New Challenges Created by the IoT

- Security
- Privacy
- Interoperability
- Legal and regulatory compliance
- E-commerce and economic dev issues

Adapted from Kim and Solomon (2018)

Personnel Security Principles

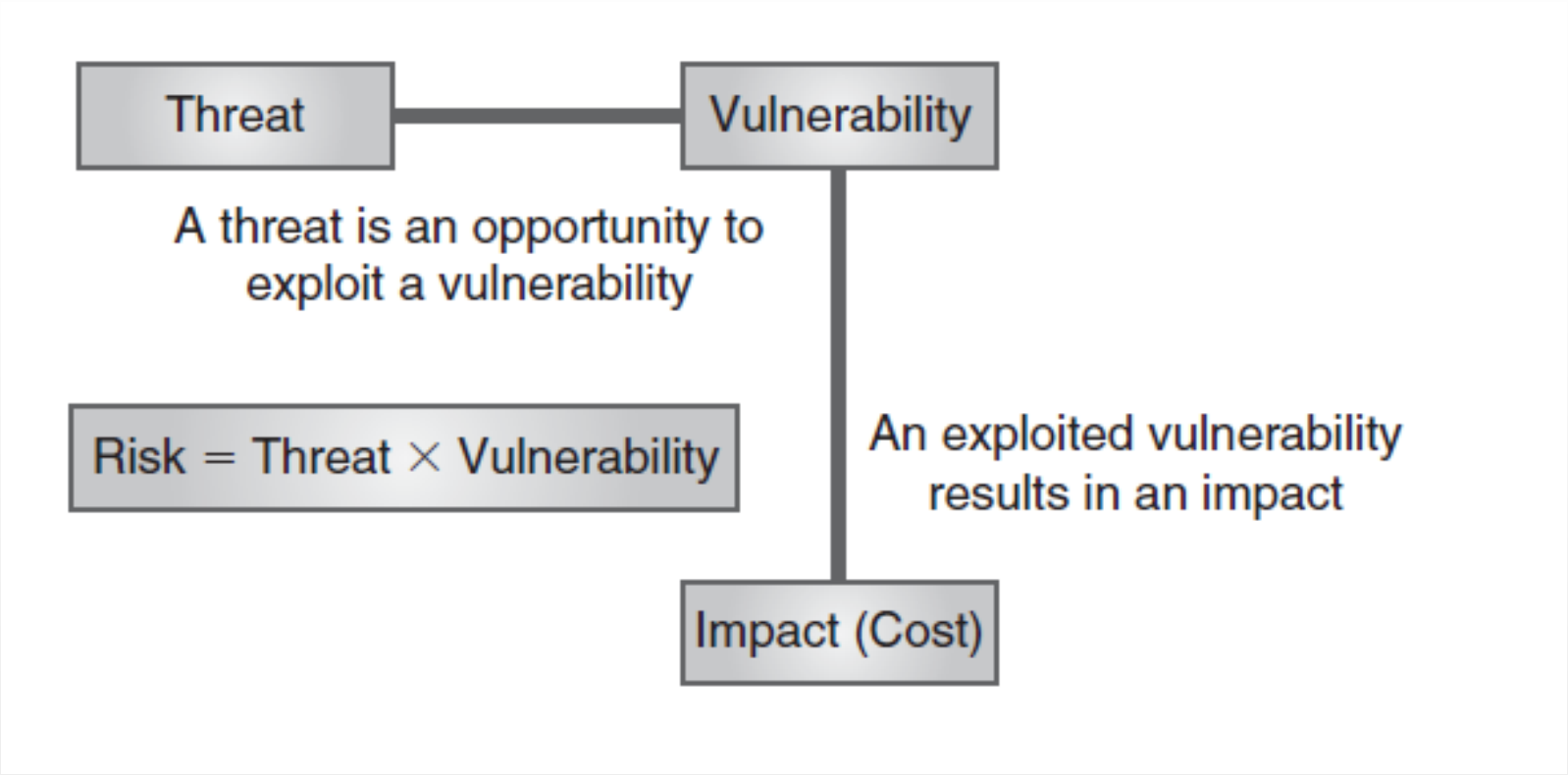
- Limiting Access
- Separation of duties
- Job rotation
- Mandatory vacations
- Security training
- Security awareness
- Social engineering

Adapted from Kim and Solomon (2018)

Block 2

Risk Management and Business Continuity

Risks, Threats, and Vulnerabilities



Seek a balance between the utility and cost of various risk management options

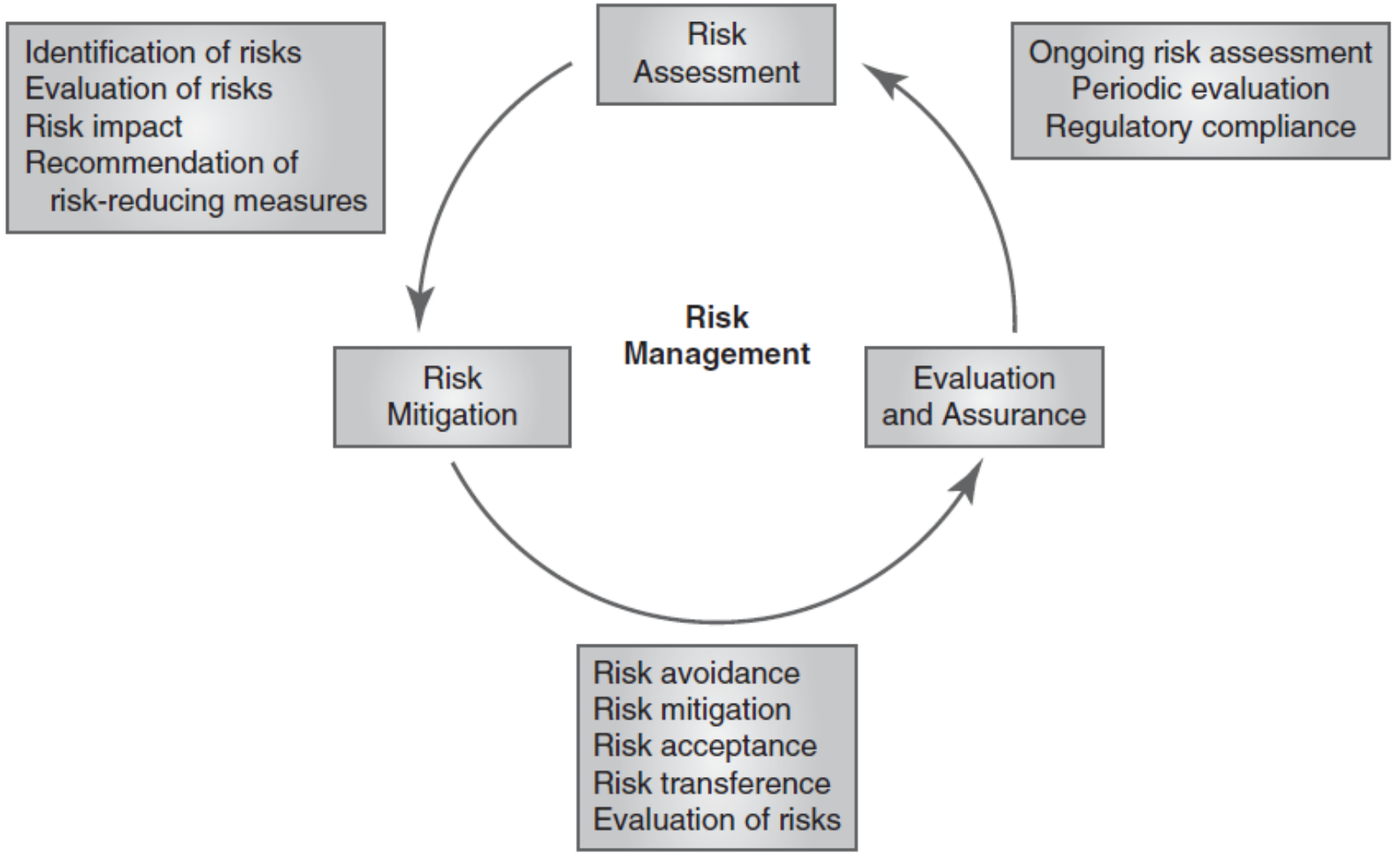
Adapted from Kim and Solomon (2018)

Quantitative Risk Assesment

Individual Activity 1

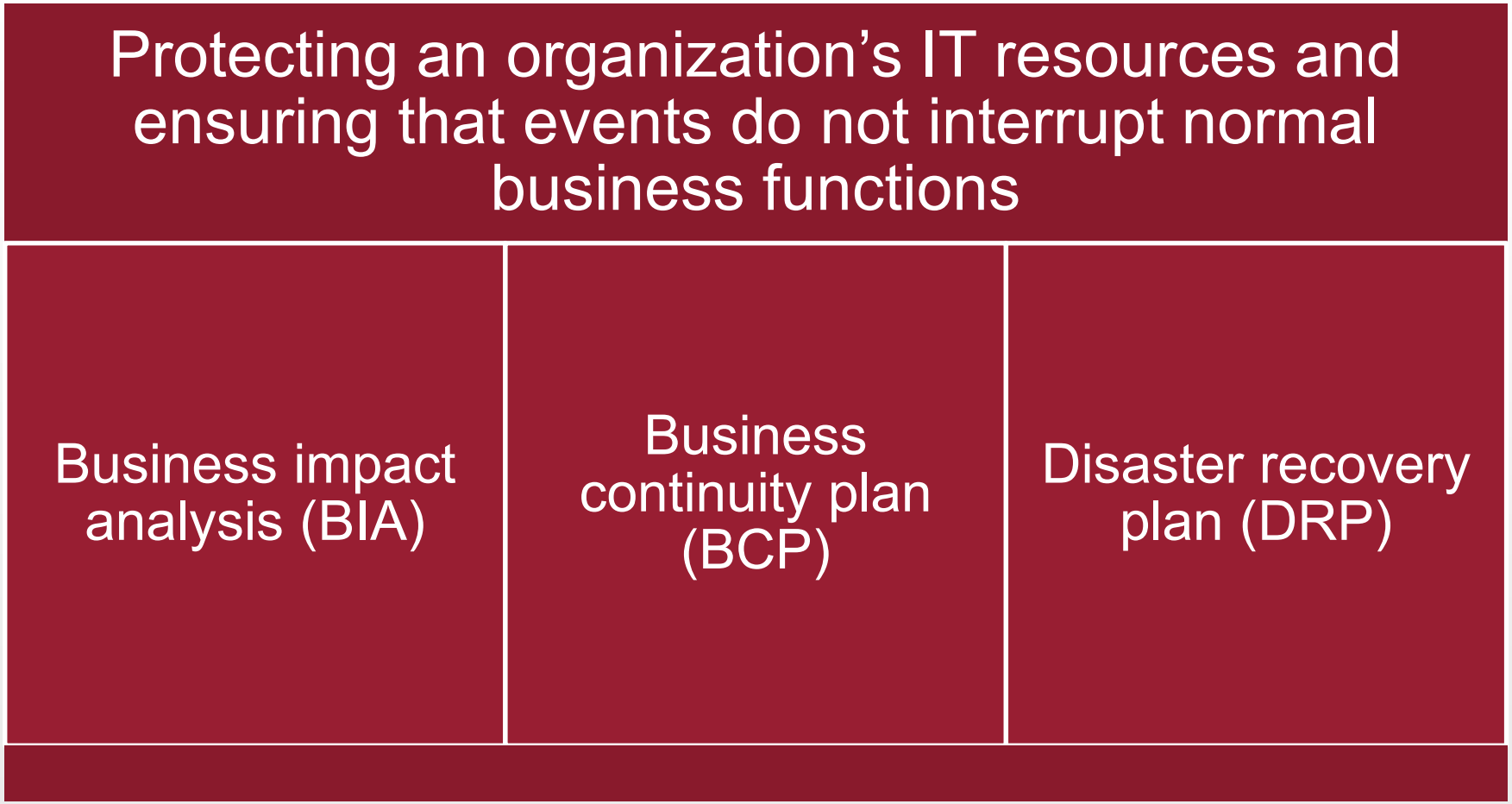
- Complete the quantitative risk worksheet.

The Risk Management Process



Adapted from Kim and Solomon (2018)

Implementing a BIA, a BCP, and a DRP



Adapted from Kim and Solomon (2018)

BIA Recovery Goals and Requirements

- Recovery point objective (RPO)
- Recovery time objective (RTO)
- Business recovery requirements
- Technical recovery requirements

Adapted from Kim and Solomon (2018)

Disaster Recovery Plan (DRP)

- Threat analysis
- Impact scenarios
- Recovery requirement documentation
- Disaster recovery

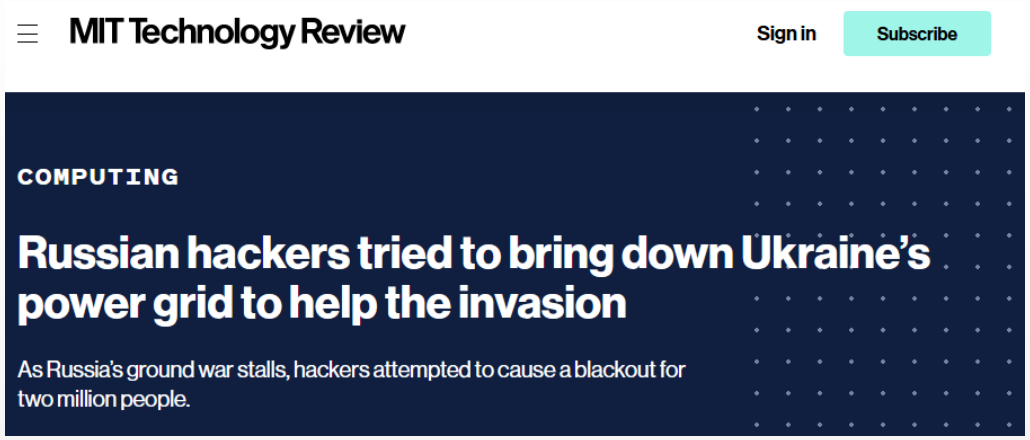
Hot site	Has environmental utilities, hardware, software, and data like original data center
Warm site	Has environmental utilities and basic computer hardware
Cold site	Has basic environmental utilities but no infrastructure components
Mobile site	Trailer with necessary environmental utilities, can operate as warm or cold site

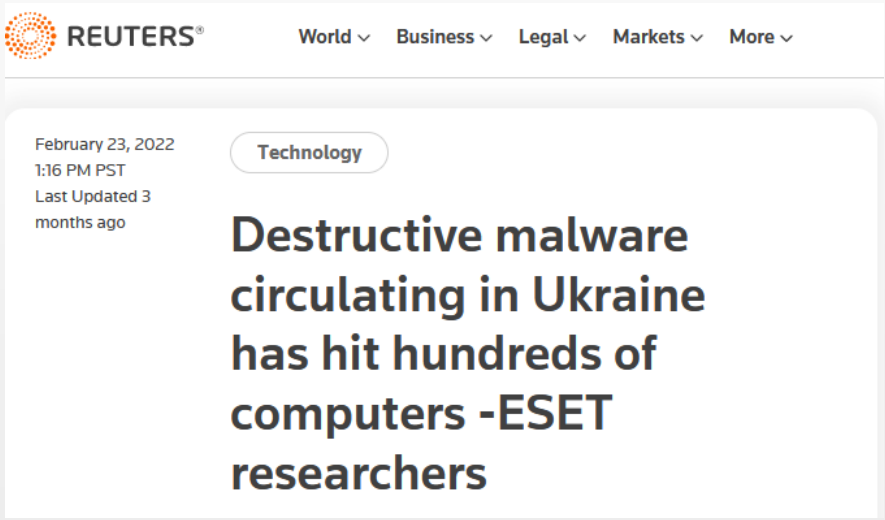
Adapted from Kim and Solomon (2018)

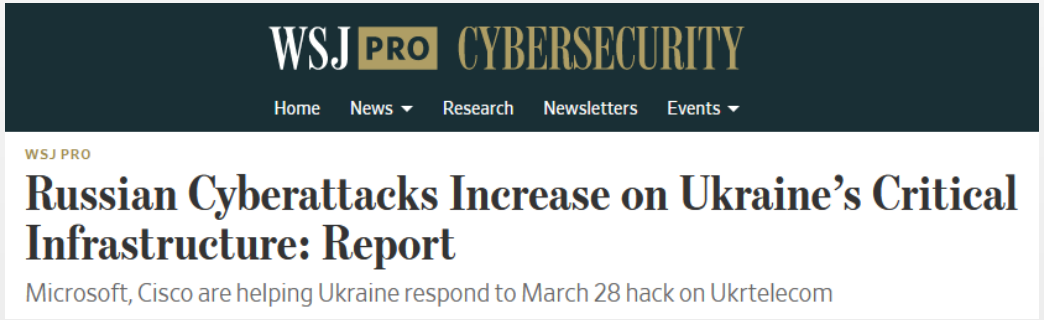
Block 3

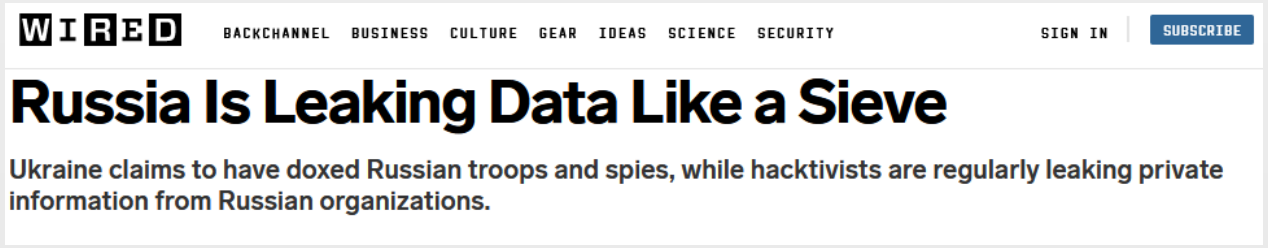
Beyond Organizational Borders: Cyberwarfare

Cyberwarfare is happening **now**









Internet of Things

Group Activity 3

- In groups of 2 or 3 answer the following questions from **a national security perspective**. Be prepared to share your answers.
  - What risks are introduced at the individual level? (IoT Devices in Home)
  - What risks are introduced at the organizational level? (IoT Devices in Business)
  - What risks are introduced at the government level? (IoT Devices in Government Infrastructure)
  - What can be done to mitigate these risks?

Legitimacy of Cyber Weapons

Group Activity 4

- In groups of 2 or 3 answer the following questions. Be prepared to share your answers.
  - Should we be using cyberwarfare attacks?
    - When is it acceptable?
  - Are cyberwarfare attacks preferable to conventional warfare?

What can we do?

- A lot of the same security principles apply even if your adversary is a nation state
- Public awareness reduces support for cyber warfare escalation (Shandler et al., 2021)
- Educating key military and political personnel on cybersecurity (Hare, 2019, Shandler et al., 2021)
  - Through programs like CySER!
- Cultivating cyber resilience (Clarke and Knake, 2019)
  - Not one nationalized solution to the problem

Questions/Comments?