Evaluating Human Awareness in Red Teaming Exercises

Who am I

Kaspar Jüristo – Head of Offensive Security Team

Penetration Testing and Red Teaming

15 years of experience in IT

Last 8 years specializing in cybersecurity.

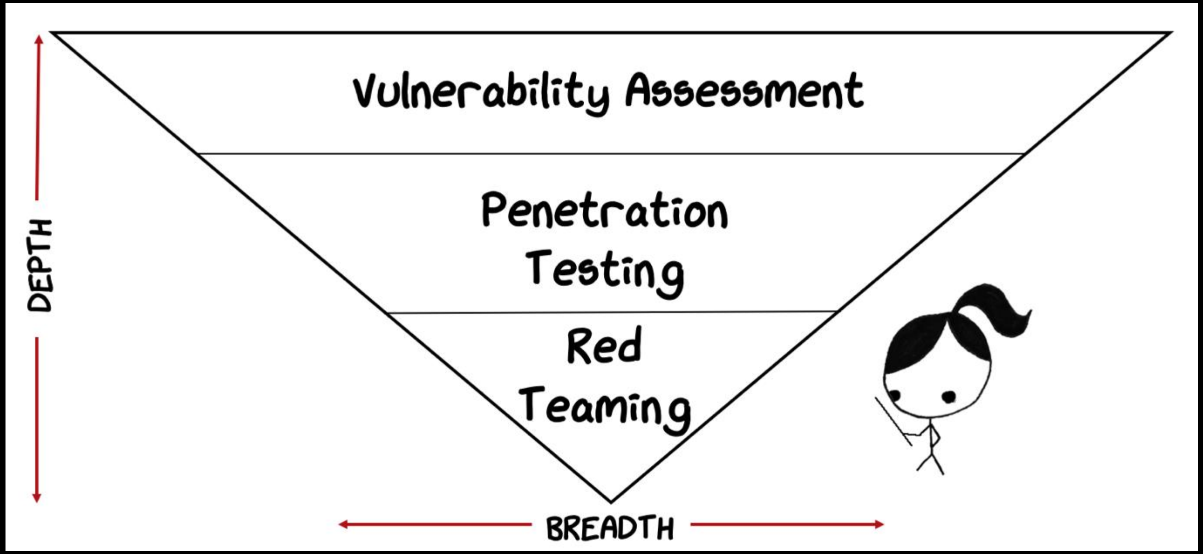
Focusing on offensive security activities past 5 years.

Master's thesis topic "How to Conduct Email Phishing Experiments“

What is Red Teaming?

Purpose: Identifying weaknesses and vulnerabilities, including human factors.

- Prepare for real cyber attack
- Get a realistic assessment
- Remediation steps with priority
- Justify investments in security



https://threatexpress.com/redteaming/red_vs_pen_vs_vuln/

Importance of Human Awareness

Stanford Research: 88% Of Data Breaches Are Caused By Human Error

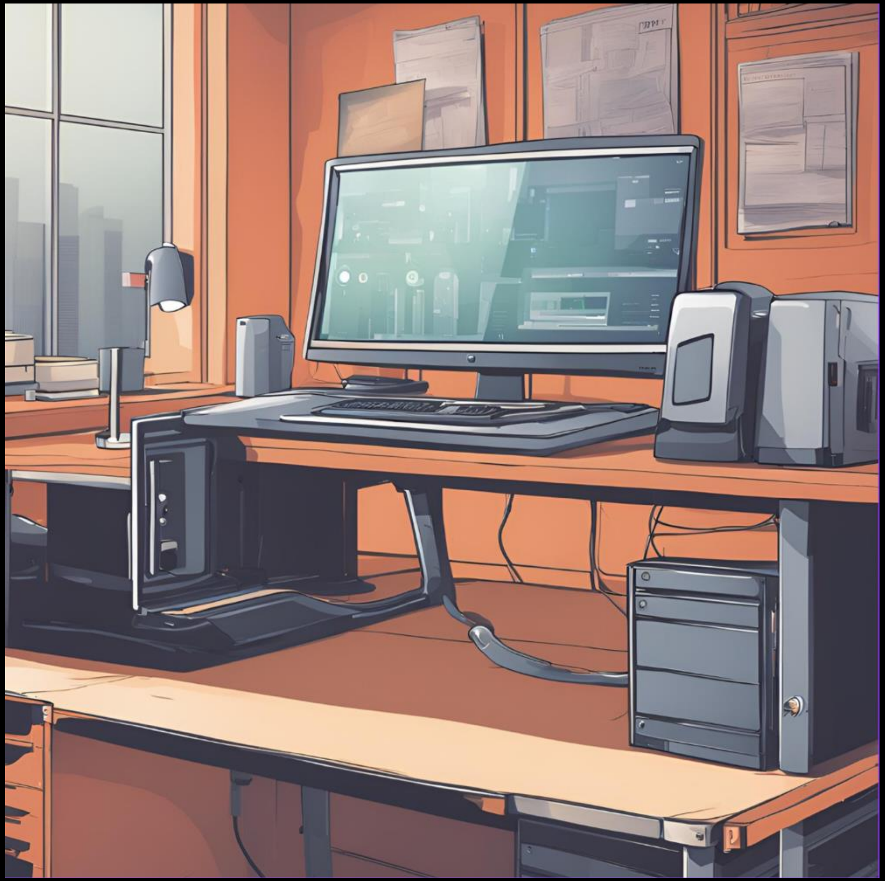
- **Tactics:** Social engineering
- **Prevention:** educating people
- **Promoting Skepticism:** less likely to trust unsolicited requests
- **Security Culture:** Regular training and updates on evolving threats

How to change Human behaviour?

Example Case #1 – Unlocked Computer

Cake emails

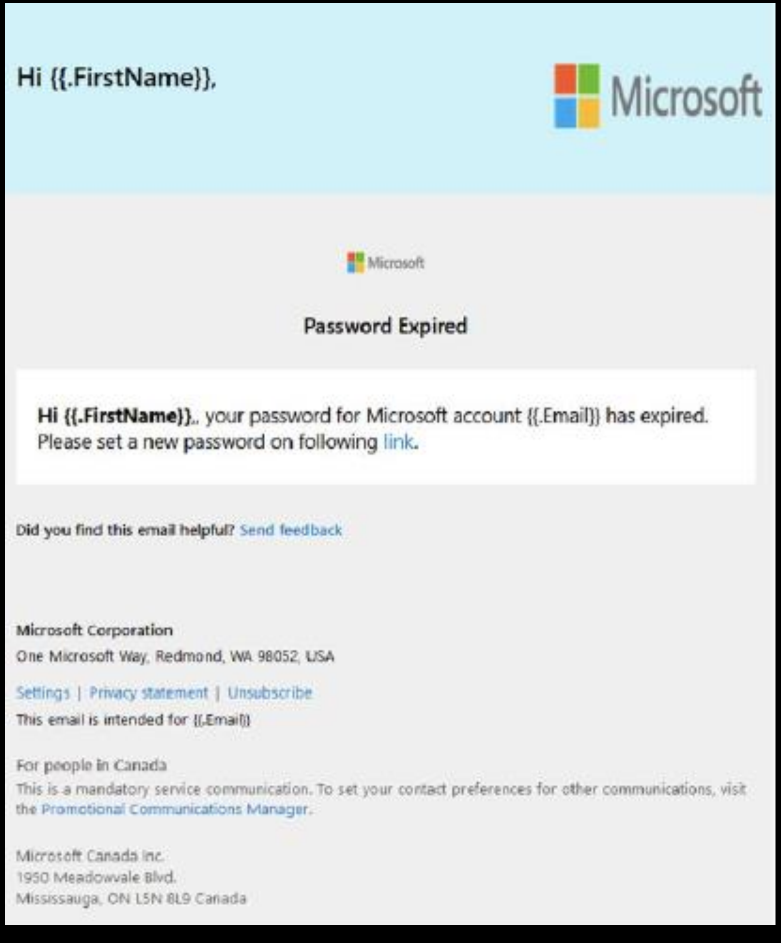
- Before Execution
  - Visual enumeration
- Execution
  - Physical access was only restricted with curtains.
  - Employees came to ask about our work ID
  - Password file on the desktop ☺
  - Active session to internal services



Example Case #2 – Phishing

Microsoft Password Expired

- Before Execution
  - Similar domain
  - Landing page and email
- Execution
  - Low number of creds
  - CEO spoofing as second email
  - Very high number of creds ☺



Hi {{.FirstName}},

Password Expired

Hi {{.FirstName}},, your password for Microsoft account {{.Email}} has expired. Please set a new password on following link.

Did you find this email helpful? Send feedback

Microsoft Corporation
One Microsoft Way, Redmond, WA 98052, USA

Settings | Privacy statement | Unsubscribe
This email is intended for {{.Email}}

For people in Canada
This is a mandatory service communication. To set your contact preferences for other communications, visit the Promotional Communications Manager.

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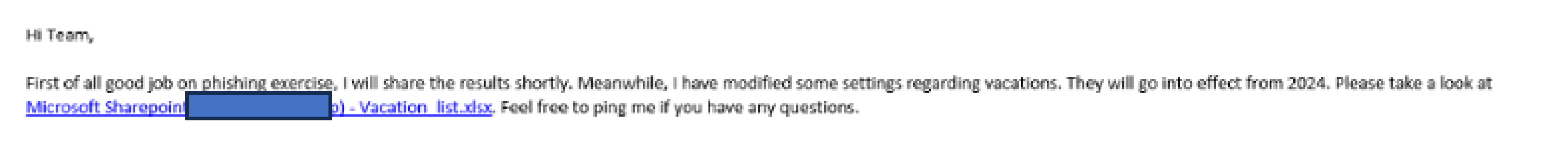
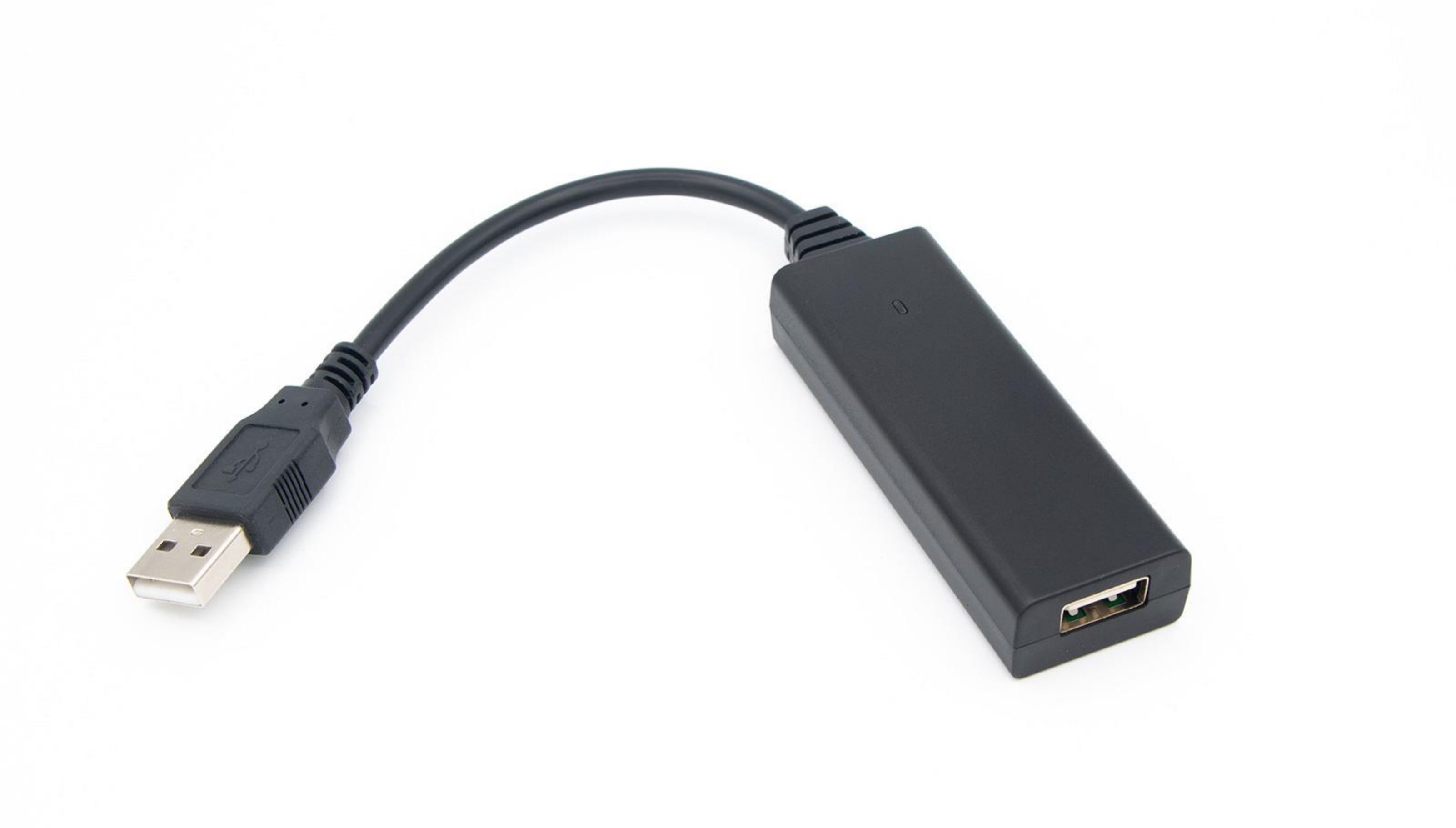


Hi Team,

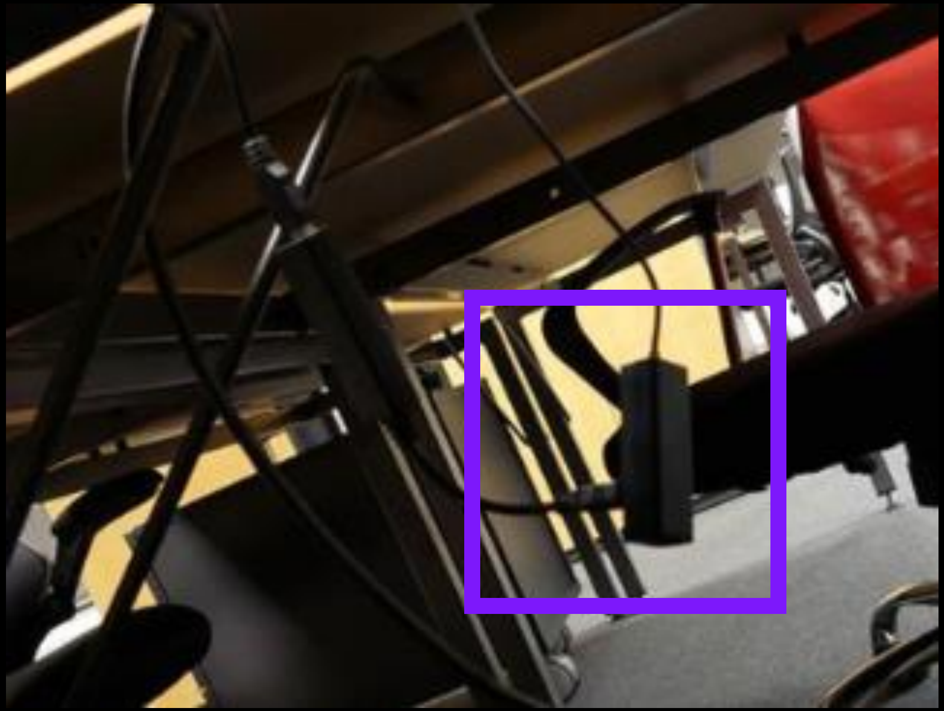
First of all good job on phishing exercise, I will share the results shortly. Meanwhile, I have modified some settings regarding vacations. They will go into effect from 2024. Please take a look at Microsoft Sharepoint[redacted]) - Vacation_list.xlsx. Feel free to ping me if you have any questions.

Example Case #3 – ? Device



Example Case #3 – Key Croc (Keylogger)

- Before Execution:
  - Enumeration on Internal resources
  - Exploring on-site
  - Testing with same model keyboard
- Execution
  - Planted after workday
  - Blue Team alerted victim as soon as the victim has typed his password and logged in.



Example Case #4 – Mail and phone

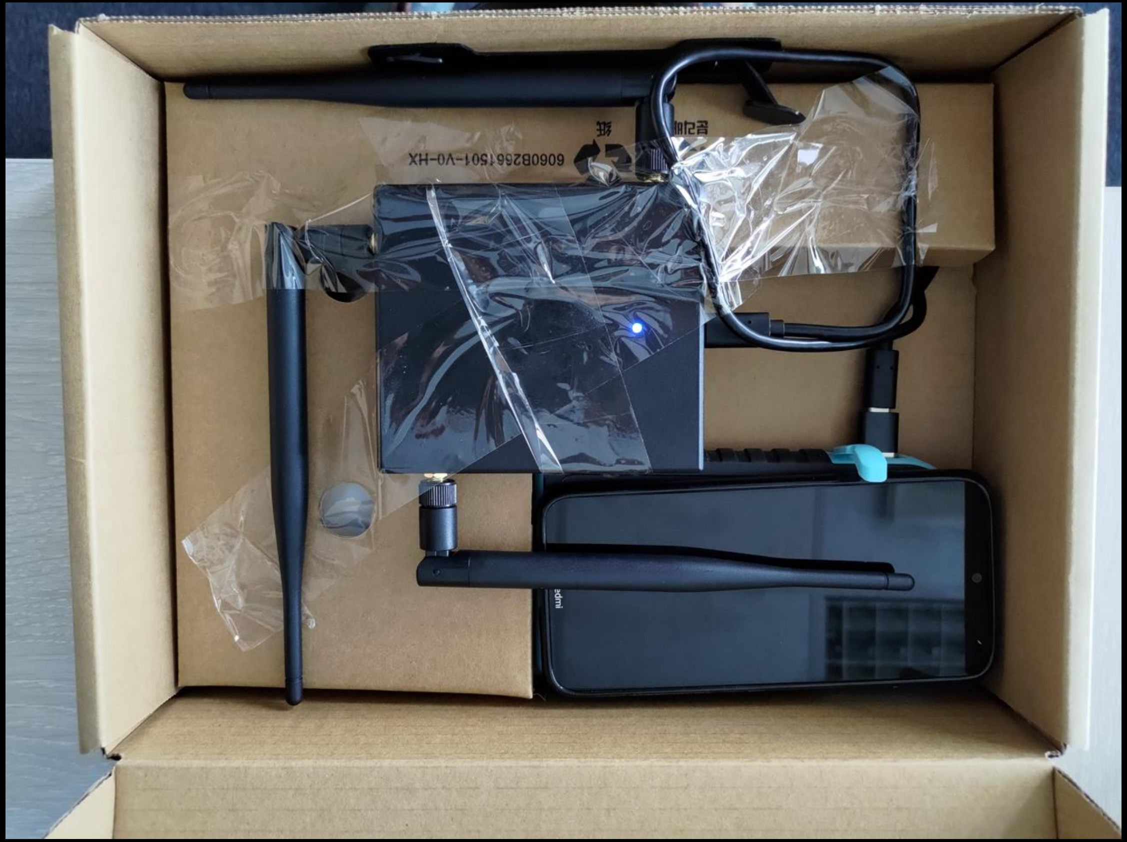
Security controls are too efficient?

- Before Execution:
  - OSINT
  - Landing page
- Execution
  - Got the creds ☺, but server info was missing
  - Phone phishing their service provider for missing information

Example Case #5 – WiFi

PineApple

- Before Execution:
  - Exploring on-site
- Execution
  - Planted behind ceiling
  - WiFi attacks



Improving Human Awareness

- **Continuous cybersecurity training**
    - Realistic simulations
- **Cybersecurity Awareness Training Programs**
    - Use quizzes, videos, and hands-on simulations to engage users
- **Security Policies and Best Practices**
    - Develop and communicate clear cybersecurity policies