

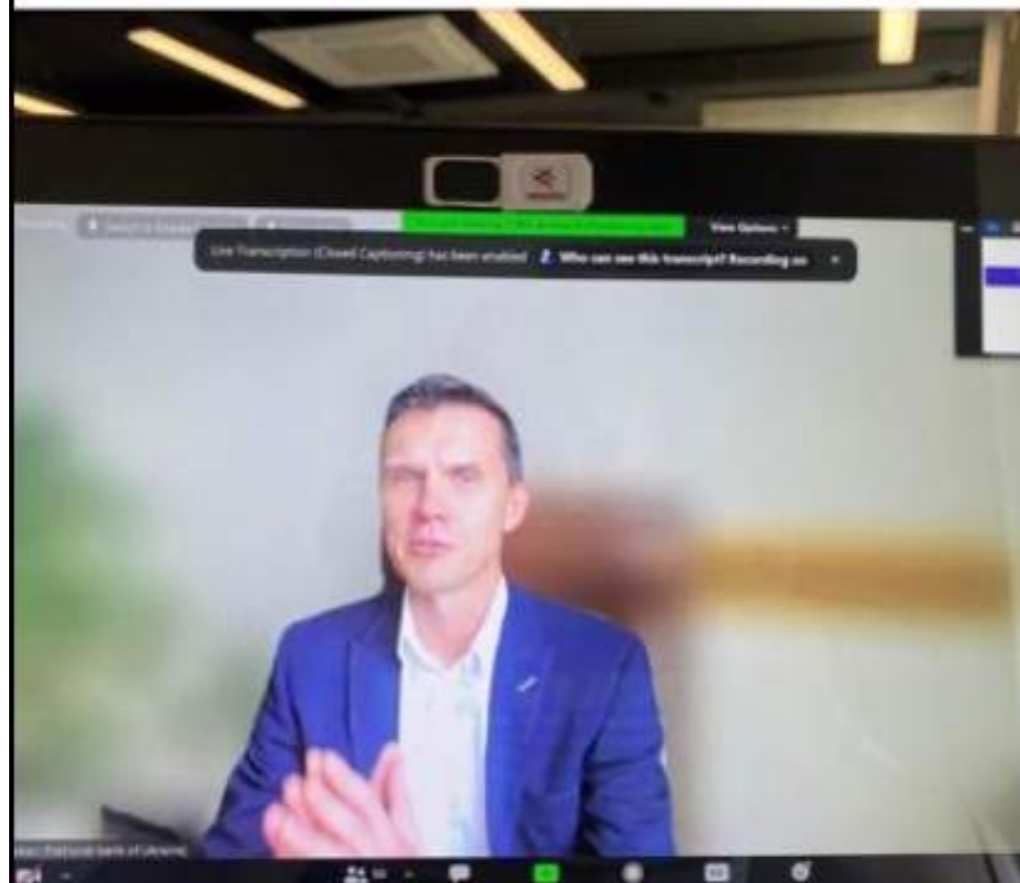
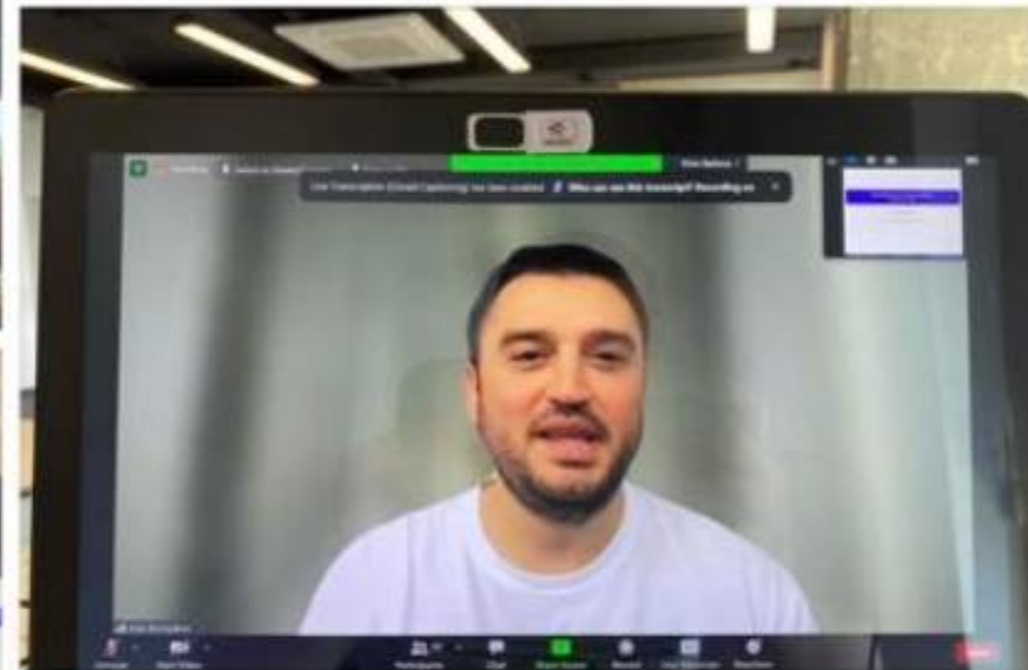
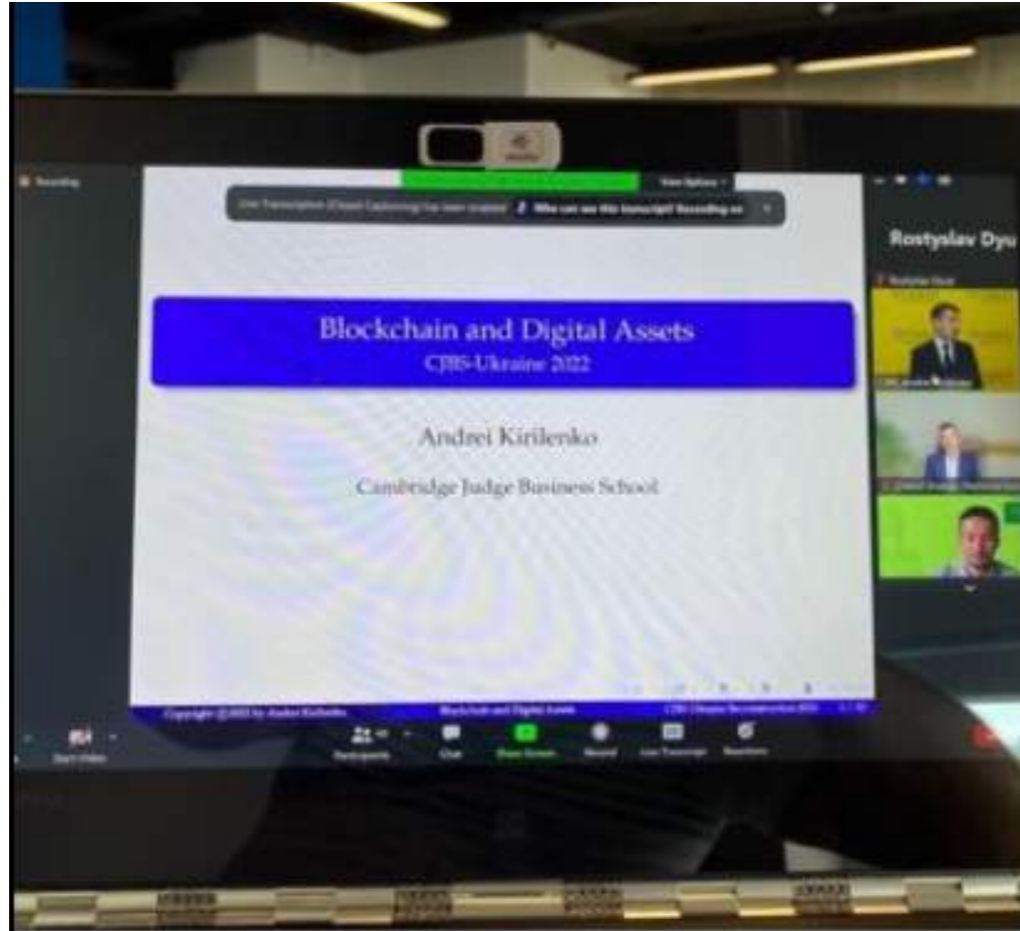
# What I Learned From Ukrainian Cyber Warriors

Andrei Kirilenko



UNIVERSITY OF  
CAMBRIDGE  
Judge Business School

# I met them in the summer of 2022



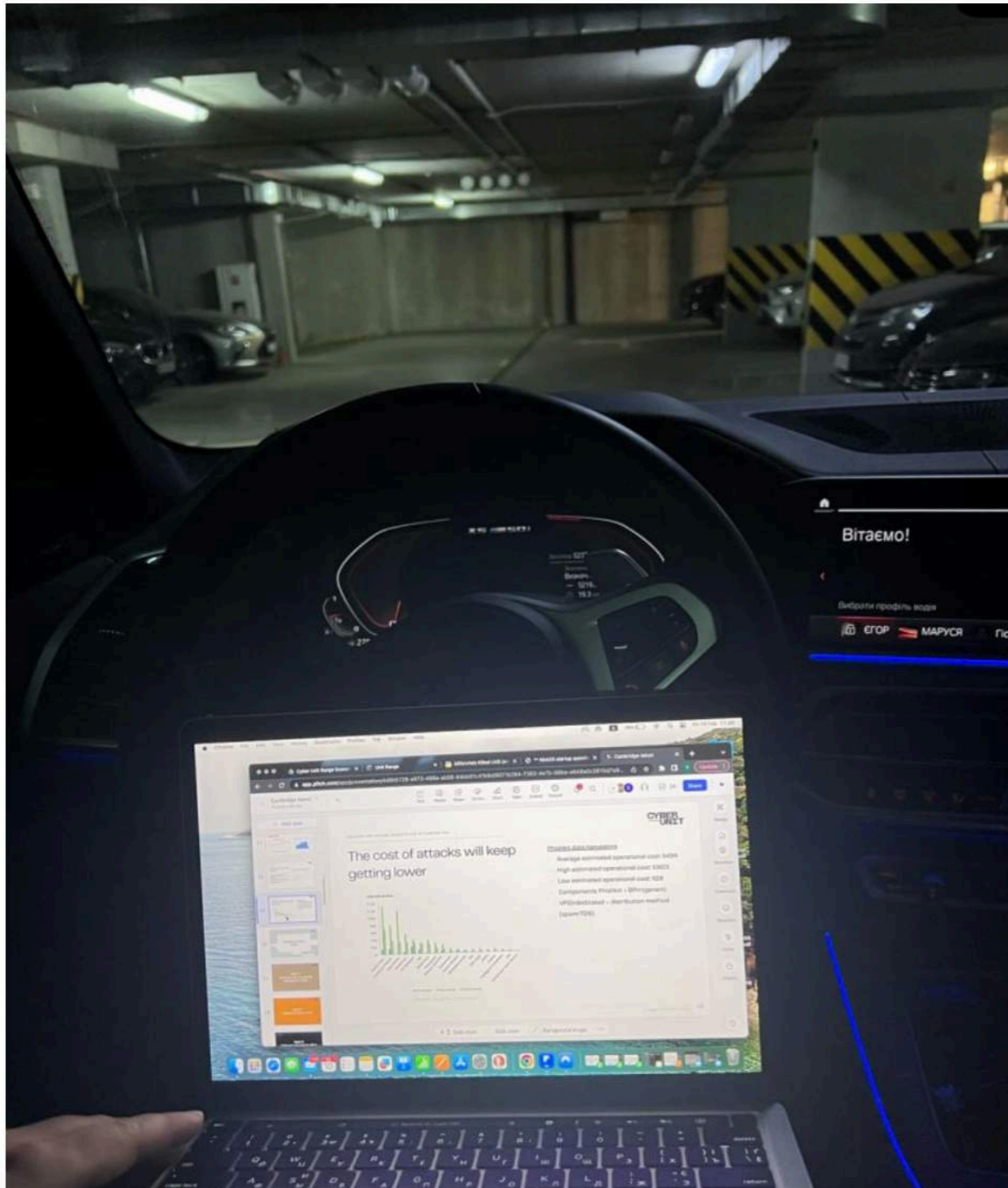


# They presented to my class in the winter of 2023



**Dr. Yegor Aushev** • 1st  
Co-Founder CyberUnit.Tech & CyberSchool.tech - Cybersecur...  
7mo •

Preparing a lecture for **Cambridge Judge Business School** Executive MBA during missile attacks on Kyiv.



**Christine Chen** (She/Her) • 1st  
Senior Engineering Manager at Google | Cambridge EMBA  
7mo • Edited •

I'm in Cambridge this weekend for our EMBA electives, where I'm learning how to be an effective board director and cybercrime. Both subjects discussed a lot about tech's impact on business and society. I love the diversity of the student cohort - so many engineers and cool cats.

Our guest lecturer for cybercrime dialed in from Kyiv and gave us a heads up he may need to pause to hide in a bomb shelter. Really puts things into perspective.

**University of Cambridge, Cambridge Judge Business School, Dr. Yegor Aushev, Simon Learmount, Andrei Kirilenko**

**#nonappingtoday #cyberwar #cybercrime #NED #boarddiversity #cambridge #tech #cybersecurity #artificialintelligence #ai**

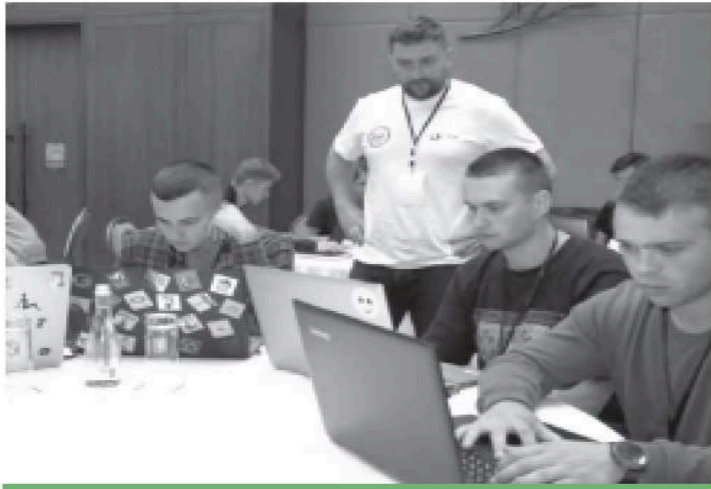




# They have been helping Ukraine with cyber defense



OUR THREEFOLD STRATEGY TO DEFEAT RUSSIAN HACKERS



## Training

Public-private partnerships to train critical infrastructure employees in knowledge and practice of elite Russian hackers.

## Community

Unifying Ukrainian cybersecurity community and building government-community trust.

## Massive Response

Shock & awe counterattacks mixed with intense media coverage to demoralize the enemy.

**On Feb. 24, 2022 posted a call for cyber volunteers on social media**

**Within 24 hours received more than 1000 application**

**Separated them into groups of 7-10 people and put them on projects**



# It worked and lessons are being learned



**NATO**  
**OTAN**  
Allied Command Transformation  
North, Virginia | USA

**ALLIED COMMAND TRANSFORMATION**

**TIDE HACKATHON**  
Advancing Interoperability through Innovation

**TIDE Hackathon Challenges/Sponsors**

- Analytics Dashboard for Interoperability (HQ SACT)
- Disinformation Analyser (POL Cyber Command)
- Small UAV Visual Navigation Concept Development (UKR Cyber Unit Technologies)

**FW Hackathon**

**WARSAW, POL**  
**20-24 FEBRUARY 2023**

tid@act.nato.int

**“ACT - IMPROVING TODAY, SHAPING TOMORROW, BRIDGING THE TWO.”**



# Initial lessons

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## Lessons from the trenches

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### Lesson #1:

Governments can't protect private enterprise

- Governments don't have resources to protect companies or even fully cover their critical infrastructure.

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### Lesson #2:

Cyber aware, skilled people is your strength

- We built a 1000+ strong volunteer community to defend companies, critical infrastructure, and gather intelligence in cyberspace. Strong response is key.
- Our experience in cyberwarfare shows that 90+% of worst breaches can be stopped with cyber aware, trained people, which create a human firewall.

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### Lesson #3:

Become inconvenient to attack

- The first goal for every organization in the age of cyberwar, darknet economy etc is to make yourself as inconvenient to attack as possible. If an attacker understands that they can sow chaos within your organization (people don't know how to respond etc), it invites continuous rounds of attacks and makes it difficult to recover.

# Main idea

**The traditional approach to cyber defense relies on a limited number of critical cybersecurity experts and tools.**

**But technological and human resources are limited.**

**And attacks come from too many enemies.**

**The enemies aim to overwhelm/bypass/take out limited resources.**

**Leaving the rest of the organization defenseless.**

# Main idea

**The key to successful defense is to build a human firewall.**

**Using expertise and participation of ALL employees in the organization.**

**Some employees are frontline. The rest are in reserve.**

**They defend TOGETHER.**

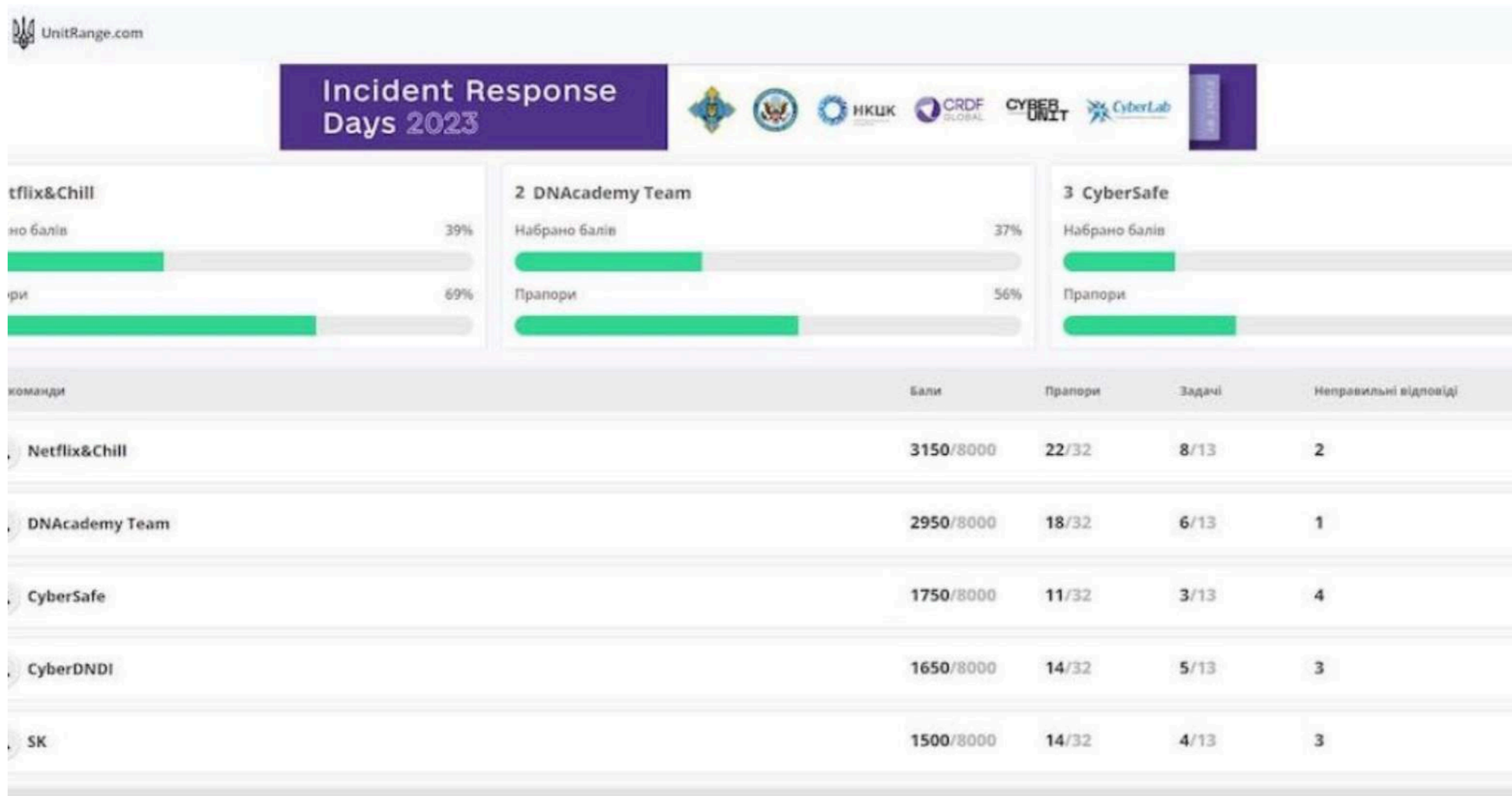
**Defending with ALL available resources succeeded.**

**Periodically resources need to be synchronized.**

**Between specialists and non-specialists, public and private, domestic and international.**



# Building a human firewall



**An integrated dashboard showing all resources.**

**Tracking current cyber skills status of all employees.**

**Used for onboarding, scenario testing and drills.**



# Synchronization of resources



**Periodic synchronization of resources**

**Hackathons, drills, updates**

**So, strategic priorities can be established and tasks distributed**



**“That city is well fortified which has a wall of men instead of brick.”**

**Lycurgus of Sparta**