

Board Games as Security Awareness Improvement Tools

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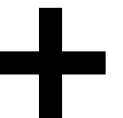
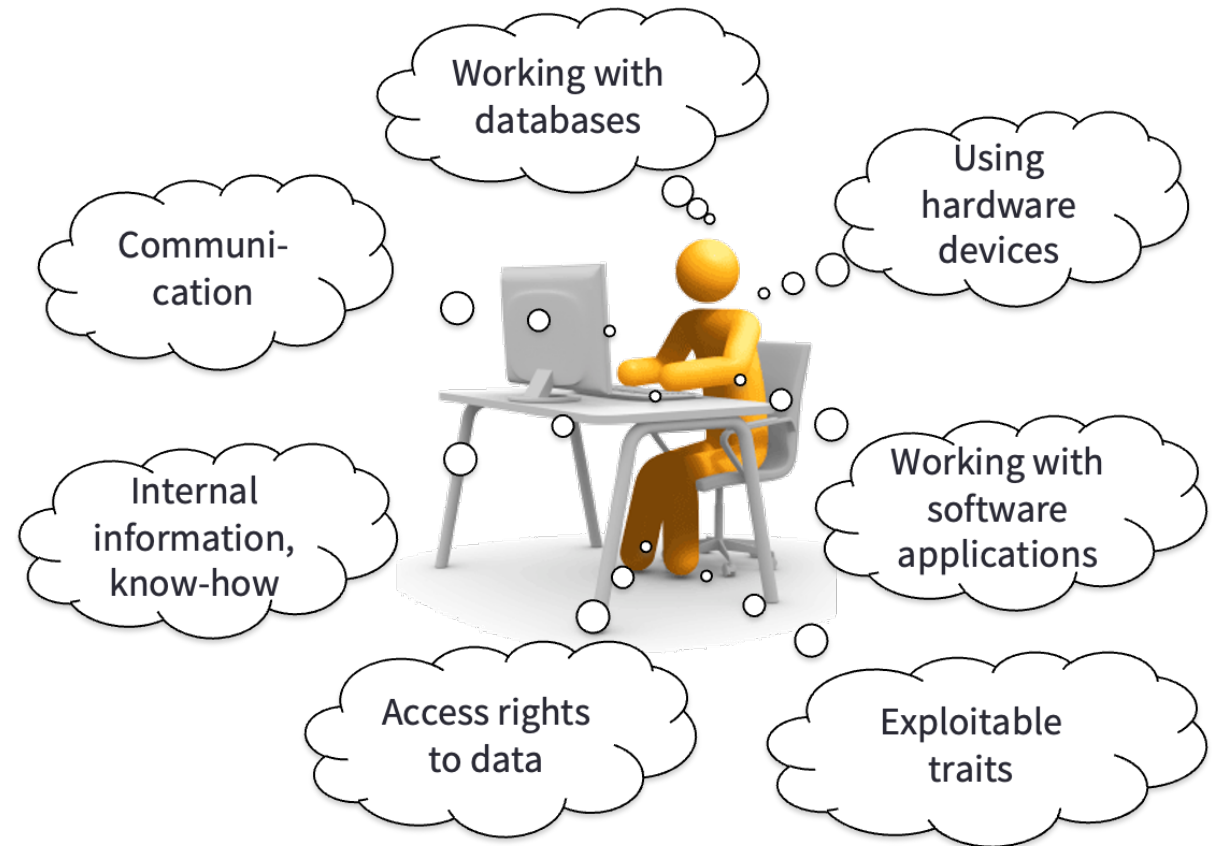
Eszter Diána Oroszi

- Lead consultant at a Hungarian information security consulting enterprise
- Ph.D student at National University of Public Services
- Certificates: CISA, CISM, CRISC
- Research area: human factor in information security, Social Engineering, security awareness measurement and improvement
- Interested in gamification: security awareness escape room, security awareness boardgame



Importance of Security Awareness

- Human factor is the weakest link in the chain of security...
- We are **all** attractive targets... Why? →
- **Social Engineering attacks:** deceiving and manipulating users
- „Small pieces” of data could be even so valuable
- **Rapid changes** in digital world could be lead to new threats and vulnerabilities



Traditional Security Awareness Improvement Methods

Personal trainings, workshops


Online presentations (video-conferences)

E-Learning materials

Campaign elements (posters, newsletters, etc.)

**KNOWN BORING
UNNECESSARY
PASSIVE
GENERAL
INEFFECTIVE**



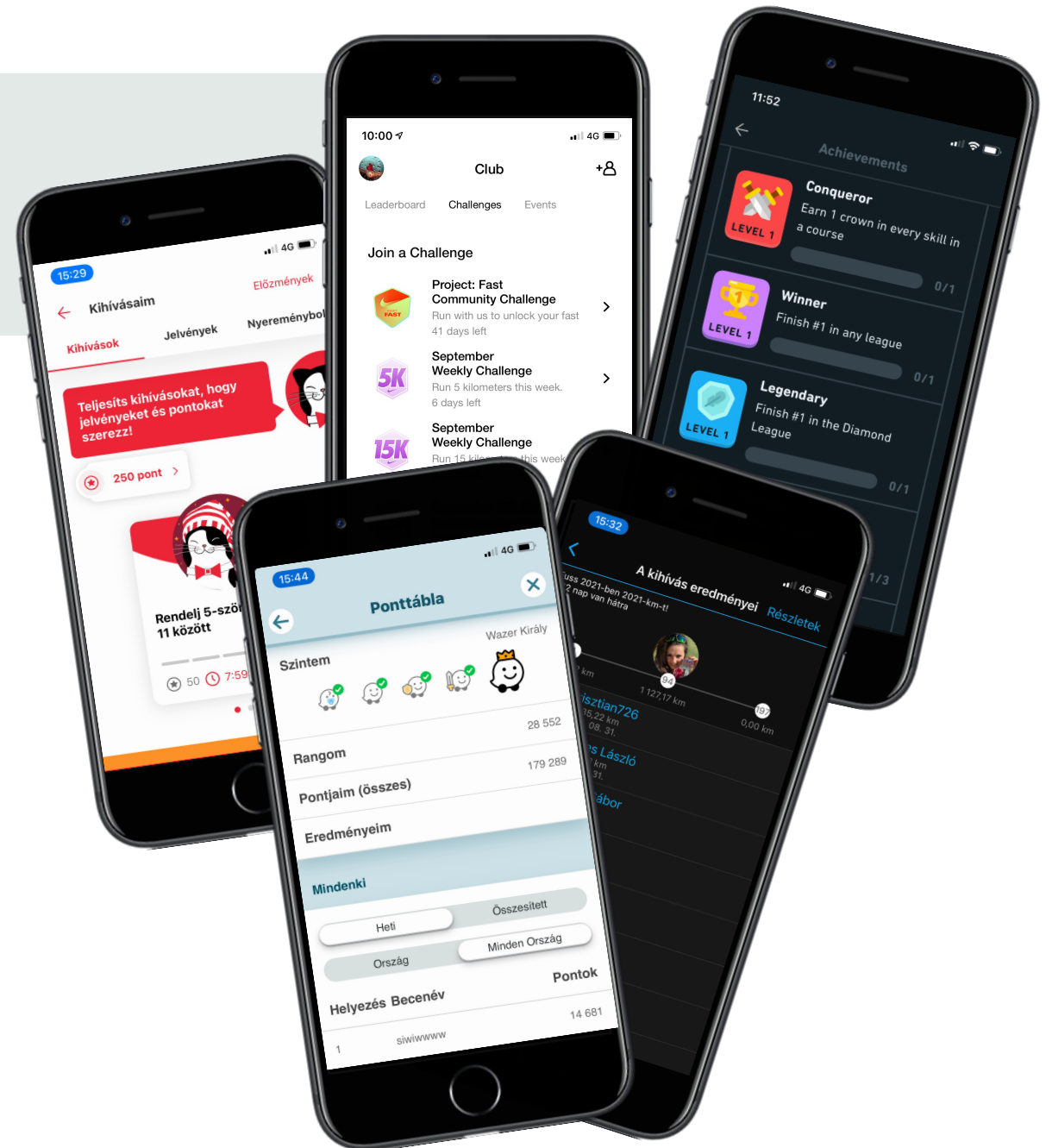
A close-up photograph of a board game. The board is green with a pattern of dark grey and light grey circles. Various game pieces are scattered across the board, including a green pawn, a yellow pawn, a black pawn, a white pawn, and a red die. The die is red with white pips and is positioned near a yellow pawn. The background is slightly blurred, showing more pieces and the board's pattern.

What can we
do for better
user experience
and success?

+

Using Gamification in General

- **Points, scores** (*order something to gather extra points*)
- **Challenges** (*run 15K in a given time period*)
- **Levels, achievements** (*unlock new levels*)
- **Leaderboards** (*see where are you in a competition*)
- **Badges** (*drive for X points to be a King, or reach a goal to take a badge on your profile*)
- **Online games**
- **Mobile applications**





Security Awareness Escape Room

- You have 30 minutes to find an open the file TOPSECRET.pdf to escape the room
- Only security awareness knowledge
- Use documents, photos, devices, smartphones, dumpster, and even social media sites

Everyone loves to play!



Concept of an Own Security Awareness Board Game

Character cards
with exploitable traits

Assets have to
be protected

Timeline and
security awareness
meter
symbolizing a
workday

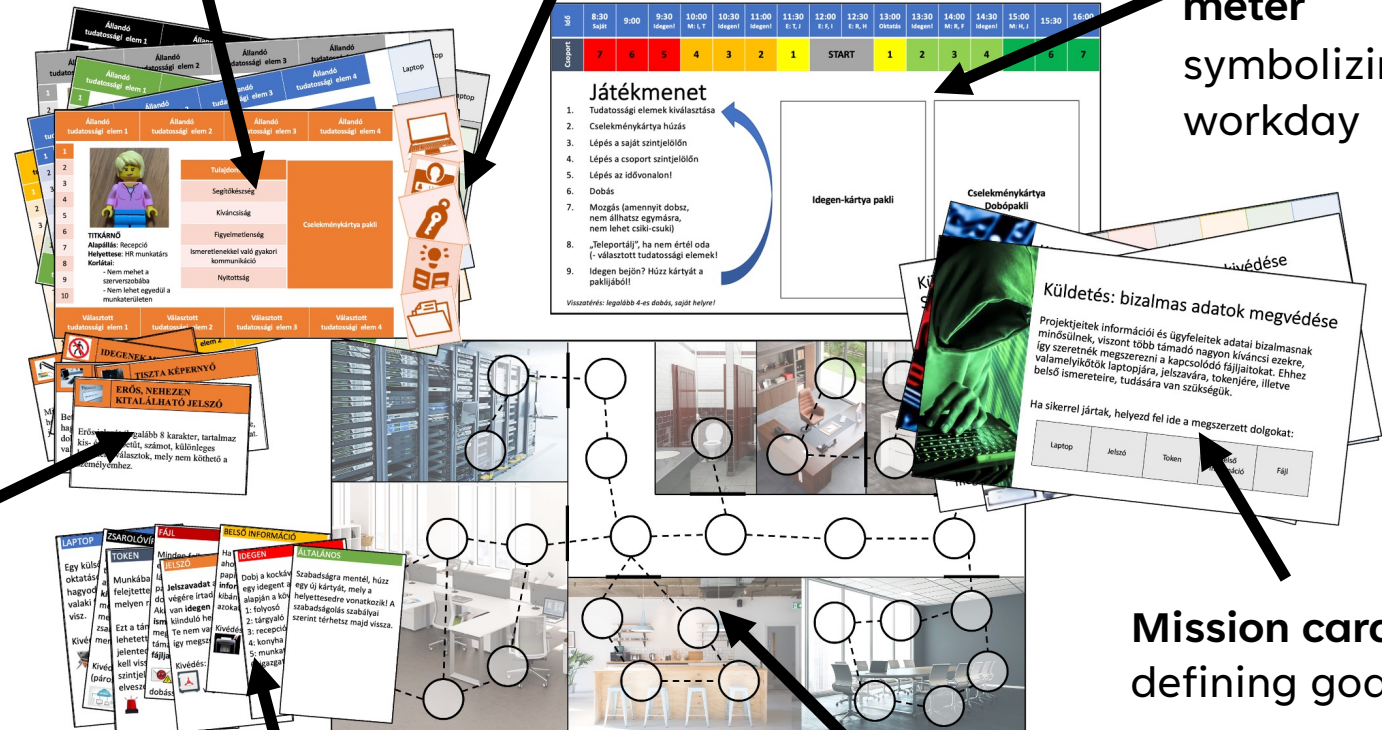
Security awareness knowledge cards
to show rules and recommendations

And a dice to
need a little bit of
luck 😊

Action cards
To show threats and risks

Game board
symbolizing an office

Mission cards
defining goals



Goals of the new game:



- Applying strategic-cooperative approach.
- Enable cooperative and competitive playing modes.
- Fit for organizational environment and private life.
- The game should highlight exploitable human traits.
- The game should introduce assets have to be protected.
- The game should teach security awareness and useful countermeasures.
- The game should show threats, attacks affecting human factor.
- At the workplace could be played with instructor.
- At home could be played alone (without instructor).
- Support demo mode (applying time limit).
- Be realistic, but stay game (players need sometimes luck).
- Be commercially available, like traditional board games.
- The game should be expandable with accessories.

Ongoing Research About Evaluating Security Awareness Improvement Methods

Which are the most effective security awareness improvement actions?

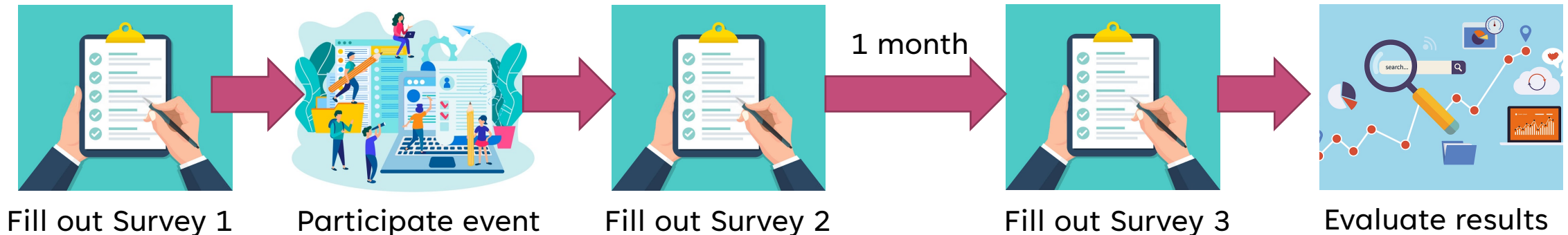
Testing 6 methods (shown in next slide) with the following requirements:

- time limit 30 minutes
- same content (10 predefined knowledge elements)
- same instructor/presenter

Which are new security awareness knowledge elements came from participated method?

Involved 10 organization, each of them with 30 employees.

Steps of the tests:



Results in progress

SELECT PLAYER...

**PERSONAL
TRAINING**



ONLINE TRAINING



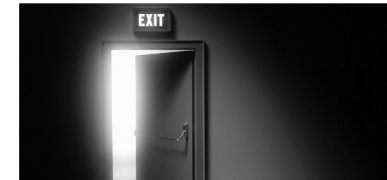
E-LEARNING



**CAMPAIGN
ELEMENTS**



ESCAPE ROOM



BOARD GAME



START GAME



LOADING...



End of research and results: 2022 Q1

But we can see:

- Gamified elements are more popular
- Personal programs are more effective and interesting
- Users are interested in security awareness board game

Thank you!

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