Mentoring talent in IT security – A case study

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The story began

Talent Management 101

Talent management in IT security

Identification of ***a few students*** with increased field interest

Special support and mentoring

Careful ***assessment***

(of skill levels)

Understanding ***individual needs***

(for development)

Personalized training

(that unfolds their potential)

University courses are not enough

Designed for a ***large number of average*** students

(and not for the few outstanding ones)

Insufficient number of hands-on exercises

Lack of personalization

Our talent mentoring program

Based on two key elements

1. CrySyS Student Core
2. avatao platform

CrySyS Student Core

Invite-only group of selected students

How to get invited?

1. top performers of CrySyS Security Challenge or
2. having impressive results in semester projects

CrySyS Student Core meetings

Core members meet once every week

Discussion of various topics in IT sec.

- presentations of interesting hacks,
- preparation for CTFs – Founding **!SpamAndHex**
- watch talks

Principles of operation

The CrySyS Student Core operates as a ***community of practice (CoP)***

A group of people who

share a concern or passion

Key characteristics of CoP

Domain

(identity of the community: IT security)

Community

(joint activities and discussions to help each other)

Practice

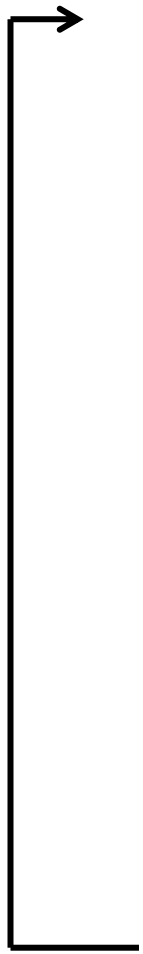
(develop a shared ”repertoire of resources”: CTFs, tricks, tools)

Sustainability

Initially, the Core was driven by the enthusiasm of founding members

Later, it became a strategic asset of the CrySyS Lab

Conditions for Sustainability



Visibility

Bootstrapping

Speeding up

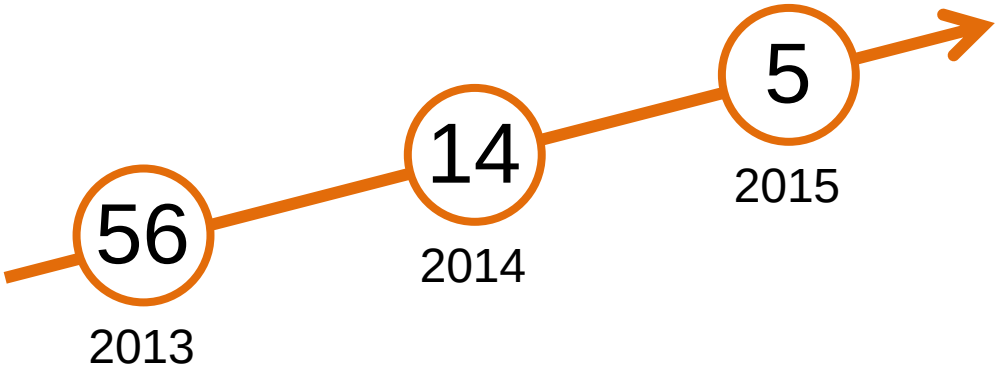
Admission

Inclusion

Giving back

Measuring success

DefCon CTF finalist (2015, 2016)



!SpamAndHex after winning iCTF

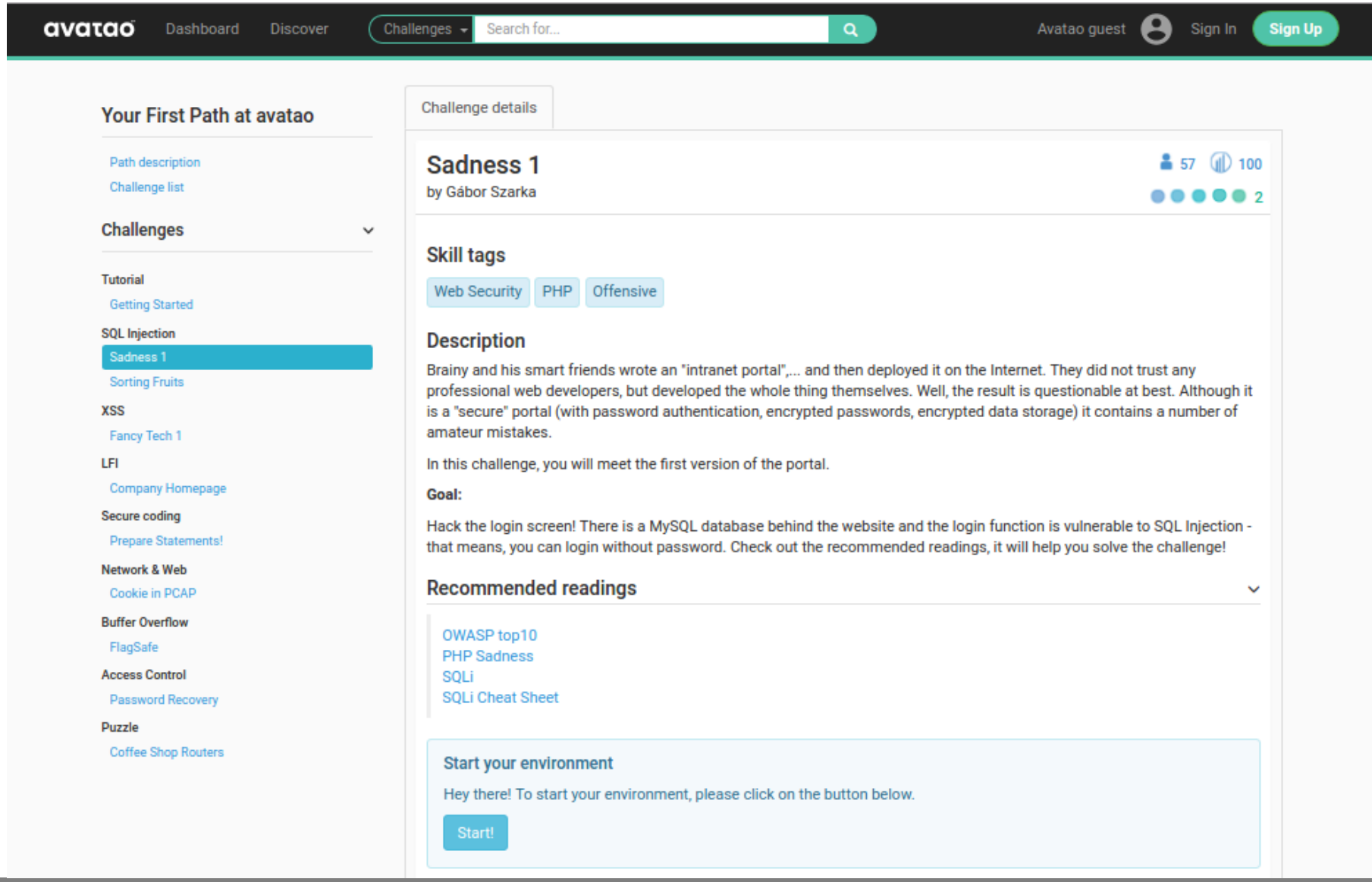
Challenge: Better inclusion of new members

Newcomers have to catch up

New members should follow a self-directed learning process

dependent → interested → involved → self-directed

avatao platform



avatao platform

High-quality challenges

- originally CTF challenges, now secure coding and more…
- experiment with security tools
- built-in hints and recommended readings
- instant feedback on solutions

Comparison with existing platforms

more help and customization

avatao™

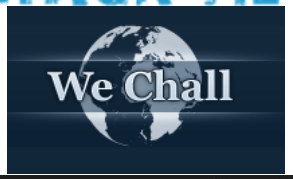
more difficult setup/access

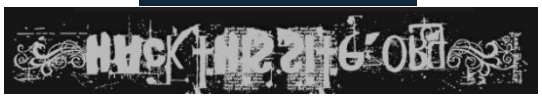
easy setup/access

DeterLab

SEEDLABS

HACK-ME





less help and customization

avatao use cases

Support talent mentoring in the Student Core

- CrySyS Security Bootcamp
- CrySyS Security Challenge

Future plans

CrySyS Student Core

- Improve sustainability → better inclusion of new members
- Increase value given back to traditional education
- Measure the impact of avatao on learning

avatao

- Easier content creation in avatao
- Introduce tools experimentation and security adventures

(DEFCON 2016) Finals – Thank you