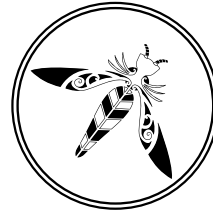


An Exploration of the Ethical Issues with the Gamification of Information Security Awareness Training



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Dan Frayn 10/22/20 1:00PM

Would you consider gamification an ethical risk?



Who this talk is for

The next 30 minutes...



Looking at what
gamification
is



What ethical
issues might
apply



Applied to information
security awareness
training

Information security

information security is the protection of information to provide confidentiality, integrity and availability.

Ethics

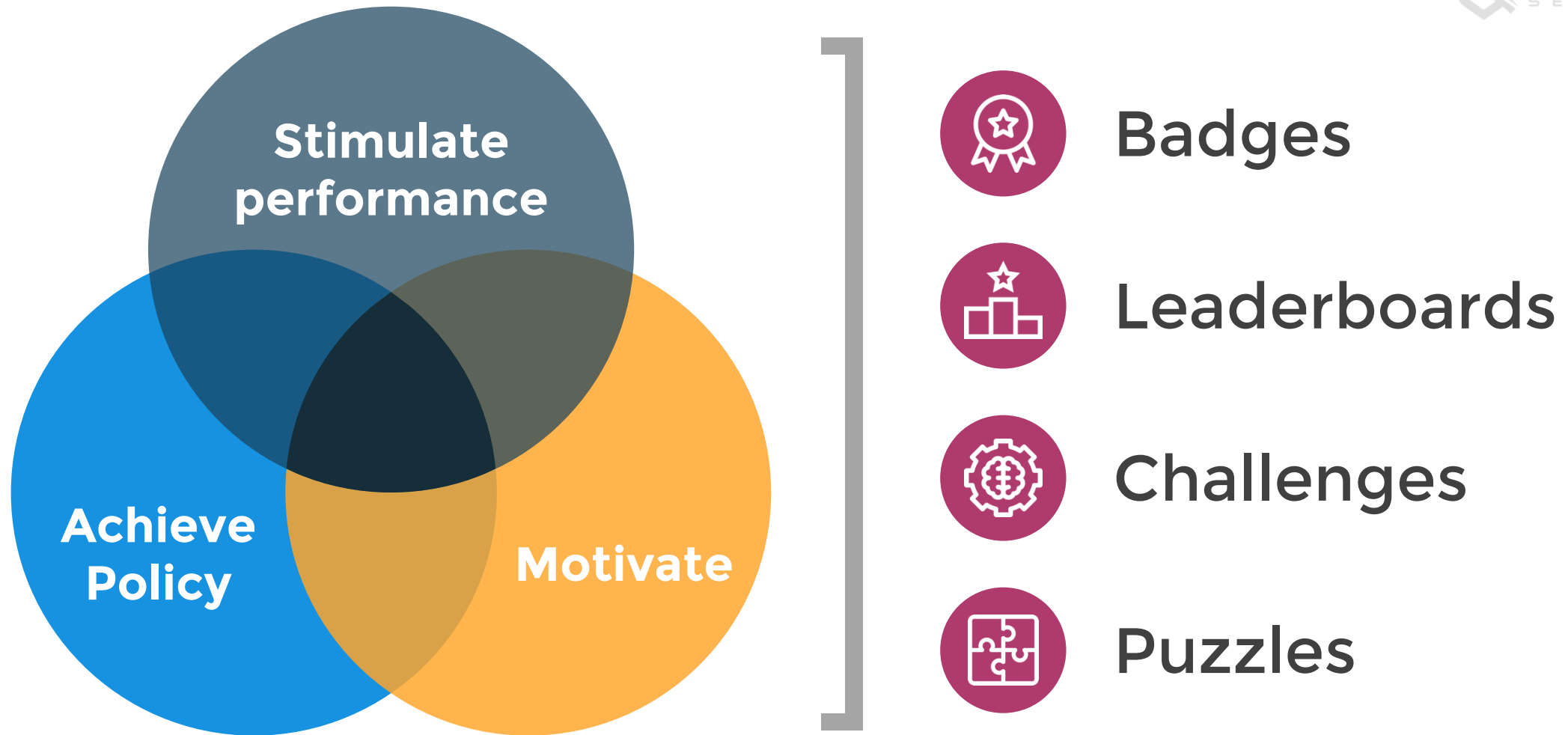
the moral principles which govern a person's behaviour or the conducting of an activity. Ethics are not what we think or feel is right or wrong.

Awareness training

a formal process for educating employees about information security.

Gamification

the use of games or game play in a non-game situation such as business.



A more **game-like** work environment

“Gamification”

“Gamification”

Playful Games

Serious Business

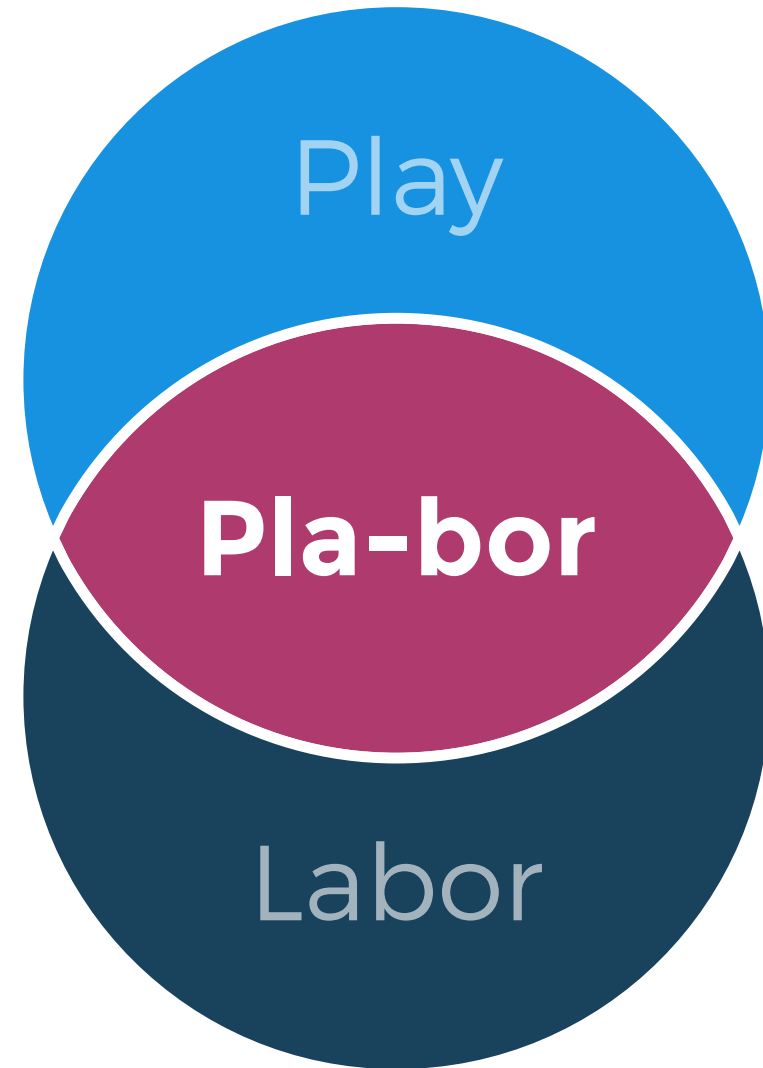


“Tension Points”

Gamification is
on the clock.

It happens
**during paid
working time.**

It is
part of the job.





A background image of two women, one older and one younger, looking at a smartphone together. The image is overlaid with a solid blue filter. The older woman on the left has short curly hair and wears glasses and a grey zip-up jacket. The younger woman on the right has long blonde hair and is smiling while holding the phone. They are standing outdoors on a path.

gamification is **not always**
ethically wrong

Exploitation?

Exploitation?

Employee opt out?

Mandatory?

Quitting the only way to avoid it?

Well informed of purpose?

Employer / employee
power imbalance?

Exploitation?

Boring? —————→ Fun?

Meaningless? —————→ Exciting?

Monotonous? —————→ Reduced
monotony?

Manipulation?

Manipulation?

A company **not disclosing the contents and goals** of a gamification system because it knows they would otherwise not participate **is manipulating those workers.**

Harm?

Harm?

Seeing
performance vs
coworkers ranked
on a screen caused
**panic about job
losses**

“an official with Unite Here
Local 11, said employees have
been known to
skip bathroom breaks
out of fear that their
production will fall and
managers will demand an
explanation”

Forbes

Harm?

Ethics of sharing
VS
Better (perceived) outcomes

Harm?

Advance disclosure may not alleviate
potential humiliation and harm

Character?

Character?

Real life characteristics
VS
Gamified characteristics

Culture?

Culture?

A pair of black boxing gloves with white wristbands and white stitching, positioned horizontally across the middle of the frame. The background is a dark, textured surface.

Gamification could create
unnatural competition and **tension**

Culture?

The background of the slide features three trophies, with the central one being the most prominent and in focus. The trophies are dark and reflective, set against a dark blue background. Confetti is scattered throughout the scene, suggesting a celebratory atmosphere.

Are **rewards** exploitative?

Culture?

Cultural compatibility



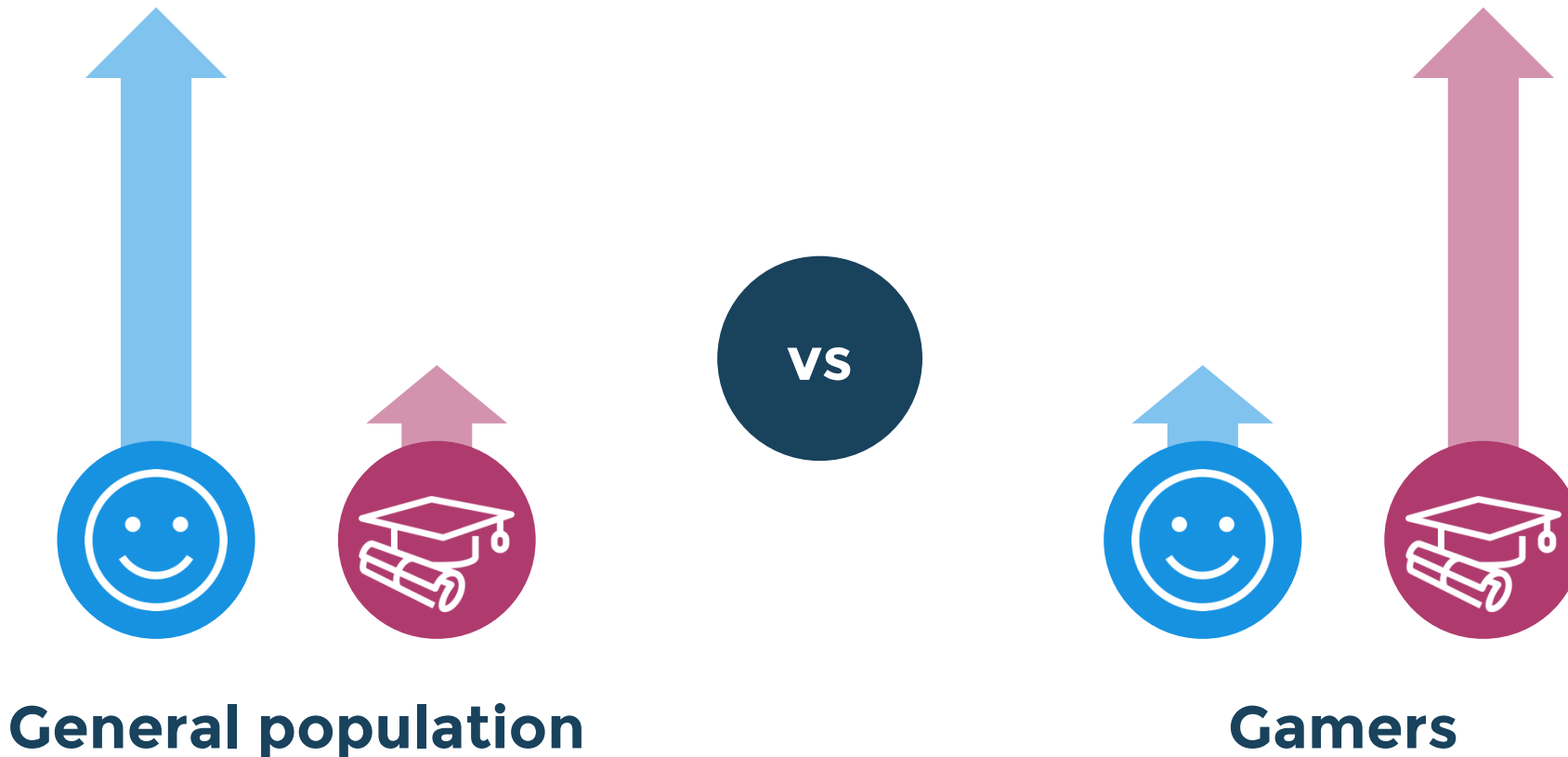
Why **Gamification** though?

Great on the surface

Absence of
research of
benefits and
dangers



Study applying basic gamification techniques to IT Compliance Training



“Security awareness is a key link in an organisation’s security chain,
**as even the most efficient security mechanisms have little value
in an organisation with no security culture**”

Rantos, Fysarakis, and Manifavas

But...

“...People **aren’t even completing these things**, they’re so boring”

Totty 2005

Only 32 percent “agreed or strongly agreed that the compliance
training they received over the past year **was engaging**”

Quaranta 2013



**Stories and
themes**

+



**Tracking
points**

+



**Earning
achievements**

+



**Competitive
leaderboards**

“Gamification,
crowdsourcing and
blended learning were
utilised to make
learning more fun”

Aldwairi, Shuhaiber

“In gamification, we most often
want everyone to win”

- Burke

“It has been underlined that despite the fact that the courses on information security **were provided** by the schools, the **majority of school staff members did not attend them.**”

Antonaci et al

Problems that gamification is intended to solve.

Myth

“It’s just a fad”

“Points, badges and leaderboards
to drive participation”

“Too complex”

“Our people aren’t competitive”

“Our people are too serious”

“Gamification is an expensive luxury”

Myth

“It’s just a fad”

“Points, badges and leaderboards to drive participation”

“Too complex”

“Our people aren’t competitive”

“Our people are too serious”

“Gamification is an expensive luxury”

Reality



15 years experience

Drives retention as well as participation

Doesn’t need to be overly complex

No evidence for that!

No evidence for that!

Affordable today

The Key Ethical Questions



Does it
**take unfair
advantage**
of workers
e.g. exploitation?



Does it
infringe any
involved
workers' or
customers'
autonomy
e.g. manipulation?



Does it
intentionally or
unintentionally
**harm workers
and other
parties?**



Does it have a
negative effect
on the moral
character of
involved
parties?

The Role of Gamification in Raising Information Security Awareness



Does the system offer choice?



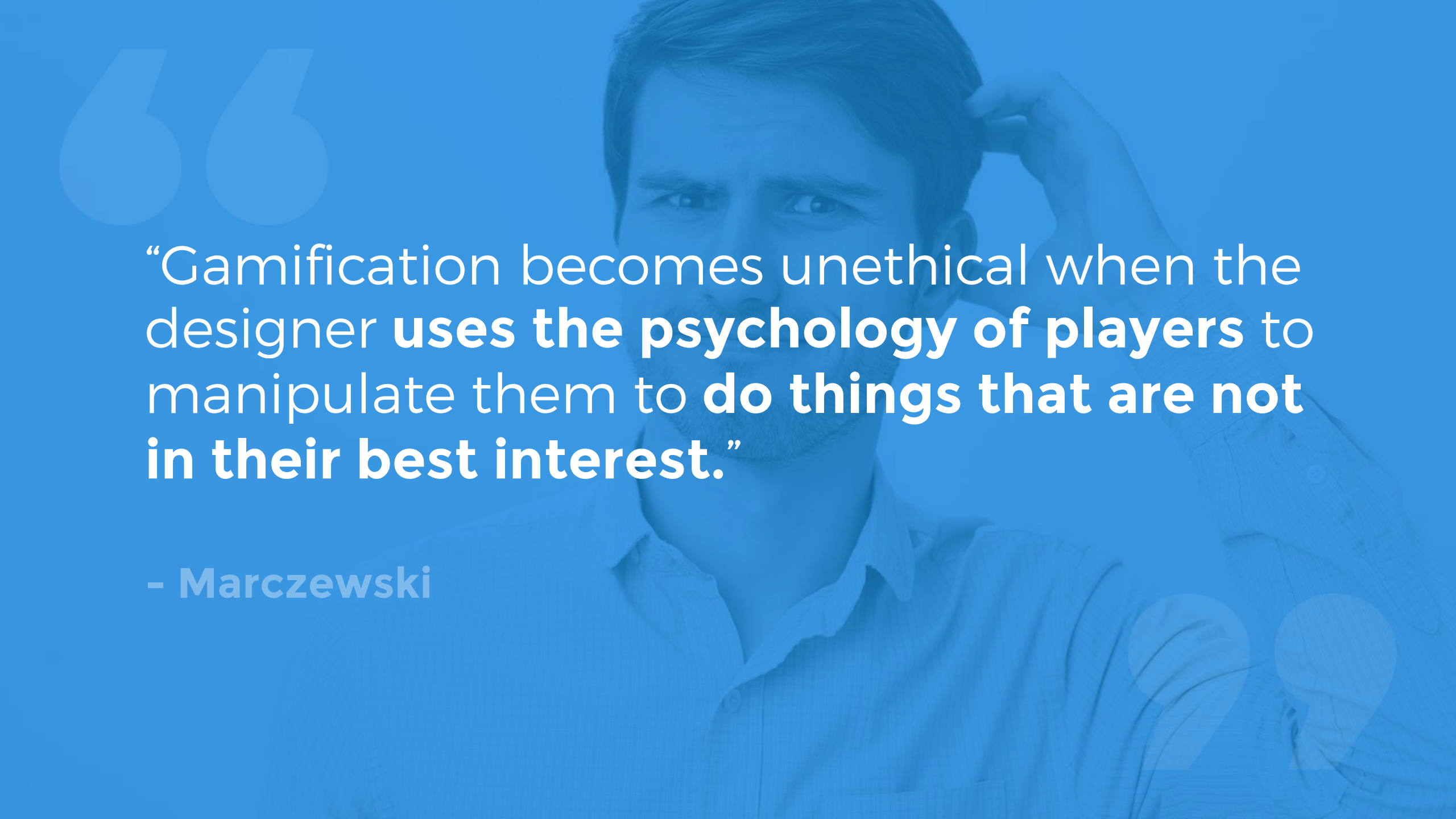
What is the intention of the designer?



What are potential positive & negative outcomes?



Are the beneficial outcomes weighted towards the needs or desires of the user or the designer?



“Gamification becomes unethical when the designer **uses the psychology of players** to manipulate them to **do things that are not in their best interest.**”

- Marczewski



**Leaky
containers?**

&



**Digital
whips?**

Data collection for
insight or marketing/other?

Illusion of change

VS

Real change

**Failure could
lead to more
dissatisfied
and disillusioned
employees**

“What if the leaderboards, levels and badges serve another negative purpose:
they become the means for work intimidation instead of motivation or lead to lack of group cohesion if these elements are meant to be visible to all team members and peer comparison is encouraged”

- Alashami et al

“It is obvious that gamification
is not a panacea”

- Kourtis

“Like a hammer, gamification is a tool.

A hammer can be used to build beautiful houses when used by someone who understands its uses and its limitations.

However, a hammer can also be used to break objects and cause great damage when used by those with less creative intentions.

This does not make the hammer ethical or unethical, it is just a tool...The same is true of gamification.”

- Marczewski

Specific Ethical Considerations for Gamification in Information Security Awareness Training

1
Has the employee provided informed consent?

2
Only option for non participation to quit their job? Is that reasonable?

3
Do leaderboards need to be shared with everyone?
Succeed together and fail softly together.

4
Is information only provided for information security awareness?
Is it secondarily used?

5
Does it actually work for your organisation?

Kia kaha



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stand in the lobby**



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