Federal Information Security Educators (FISSEA)

Fall Forum

November 14, 2023

1:00pm – 4:00pm ET

#FISSEA | nist.gov/fissea

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FEDERAL
CYBERSECURITY | INNOVATION . AWARENESS . TRAINING

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STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

Please Note…

This webinar and the engagement tools will be recorded.

An archive will be available on the event website.

Welcome and Opening Remarks

Marian Merritt

Deputy Director of NICE/FISSEA Lead
National Institute of Standards and Technology

Brooke Crisp

IT Cybersecurity Specialist/FISSEA Co-Chair
Social Security Administration

Get Involved

Subscribe to the FISSEA Mailing List
FISSEAUpdates@list.nist.gov

Volunteer for the Planning Committee
https://www.nist.gov/itl/applied-cybersecurity/fissea/meet-fissea-planning-committee

Serve on the Contest or Award Committees
Email fissea@list.nist.gov

Submit a presentation proposal for a future FISSEA Forum
https://www.surveymonkey.com/r/fisseacallforpresentations

Opening Keynote

National Cyber Workforce and Education Strategy Overview

Seeyew Mo
Assistant Director
Office of the National Cyber Director

From Compliance to Impact: Tracing the Transformation of an Organizational Security Awareness Program

Julie Haney

Computer Scientist

National Institute of Standards and Technology

From Compliance to Impact:
Tracing the Transformation of an Organizational Security Awareness Program

Julie Haney[1] **and Wayne Lutters**[2]

[1]National Institute of Standards and Technology, [2]University of Maryland, College Park

November 2023

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SECURITY
AWARENESS

Program Failures

Measuring Effectiveness

versus

Research Goals

- Gain insight into how a security awareness team goes about developing, executing, and transforming their security awareness program
- Provide lessons learned useful to other programs

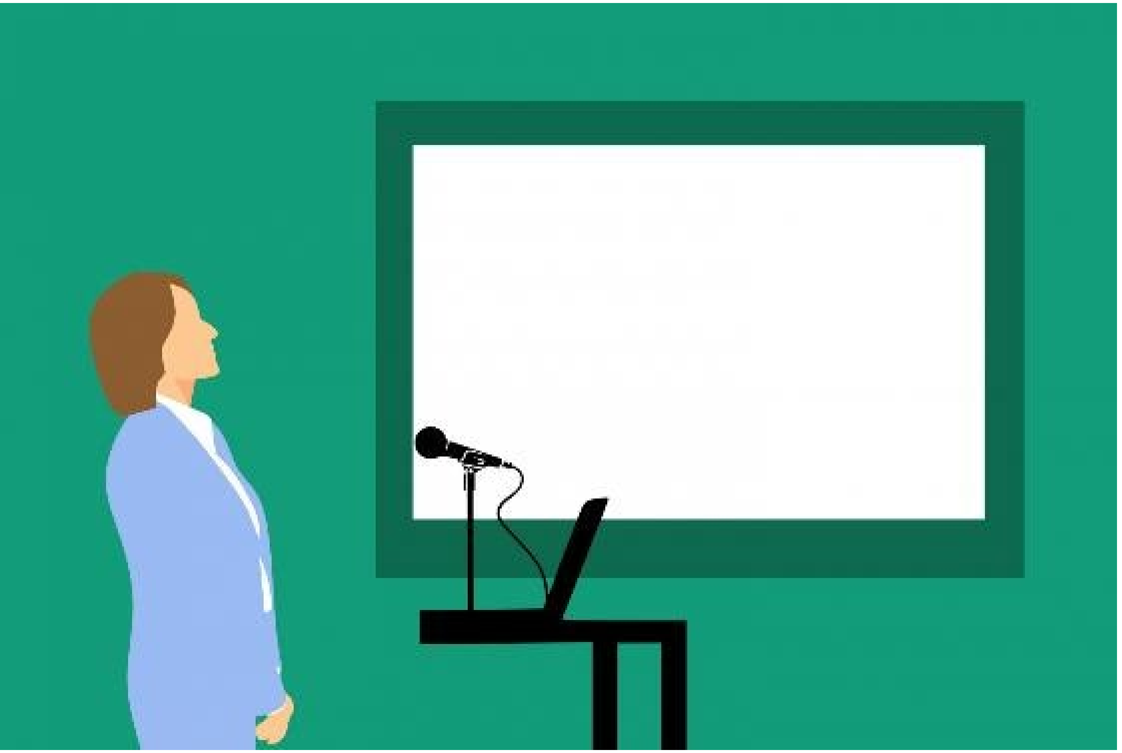
Case Study of “Agency Q” Security Awareness Program

- Medium-sized government agency
- Security awareness team: government lead + 2 contractors
- Team responsible for:
  - Implementing and tracking mandatory, annual awareness training
  - Planning and executing initiatives to increase employee awareness
  - Managing role-based training

What We Did

- Interviewed:
  - Security awareness team
  - CISO and front-line supervisor
  - Employees
- Observed in-person events over the course of a year
- Analyzed historical reports, awareness materials, and results of post-event feedback surveys

Security Awareness Initiatives



- Drop-in lunchtime events
- Security days
- Security officer forums
- Campaigns
- Phishing simulation exercises

Challenges

- Lack of buy-in from some employees and leaders
- Compliance mentality
- Lack of resources

Challenges

> *People do it because they have to. You have the online training where it’s like “click, click, click, done”... rather than paying attention to the words they’re seeing on the screen ... Just because you’re compliant doesn’t mean that it’s an effective program.*
>
> program lead

- Lack of buy-in from some employees and leaders
- Compliance mentality
- Lack of resources

Engaging and Empowering the Workforce

Making Security Relatable

- Include topical information
  - Season of year
  - Recent security needs and threats
  - Workforce-suggested topics
- Address multiple contexts
  - Work-home connection
  - Physical and personnel security

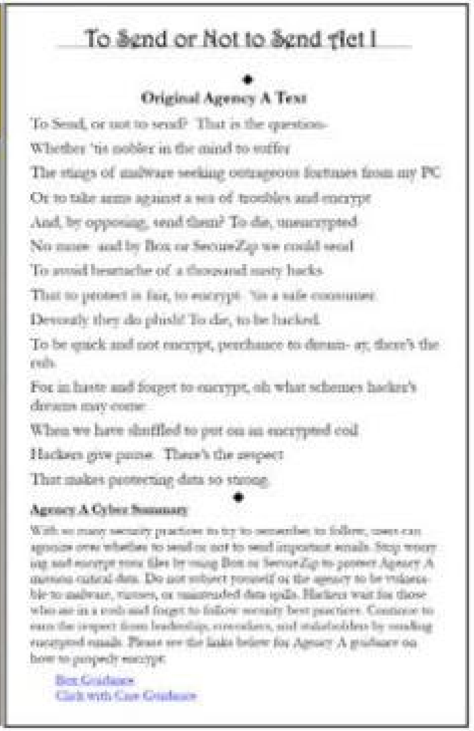
Making Security Relatable

- Include topical information
    - Season of year
    - Recent security needs and threats
    - Workforce-suggested topics
- Address multiple contexts
    - Work-home connection
    - Physical and personnel security

> *We want to secure the person, and we want everyone to think about all aspects in which they could secure themselves.*
>
> Chief Information Security Officer

Employing Engaging Communication Techniques

PLAYBILL
To Send or Not to Send



To Send or Not to Send Act I

Original Agency A Text

To Send, or not to send? That is the question-
Whether 'tis nobler in the mind to suffer
The stings of malware seeking outrageous fortunes from my PC
Or to take arms against a sea of troubles and encrypt
And, by opposing, send them? To die, unencrypted
No more- and by Box or SecureZip we could seal
To avoid heartache of a thousand nasty hacks
That to protect is fair, to encrypt 'tis a safe consummate
Devoutly they do phish! To die, to be hacked.
To be quick and not encrypt, perchance to dream- ay, there's the rub.
For in haste and forget to encrypt, oh what schemes hacker's dreams may come
When we have shuffled to put on an encrypted coil
Hackers give pause. There's the respect
That makes protecting data so strong.

Agency A Cyber Summary

With so many security practices to try to remember to follow, users can agonize over whether to send or not to send important emails. Stop worrying and encrypt your files by using Box or SecureZip to protect Agency A sensitive critical data. Do not subject yourself or the agency to be vulnerable to malware, viruses, or unintended data spills. Hackers wait for those who are in a rush and forget to follow security best practices. Continue to earn the respect from leadership, coworkers, and stakeholders by sending encrypted emails. Please see the links below for Agency A guidance on how to properly encrypt.

Box Guidance
Click with Care Guidance

- Using a variety of communication methods throughout the year
- Implementing creative, memorable, and entertaining initiatives
- Trying new things even though not everything works

Providing Practical Recommendations

- Provide actionable steps to take
- Achievable given employee skills
- Described in understandable terms
- Accompanied by points of contact and resources for more information

Providing Practical Recommendations

> *[It's beneficial] having the information presented in a manner where it's not intimidating, … in a way you can embrace it and take away information … The more we know about it and the more we know people that we can reach out to that can help us if we have a question about it, I think that can make you feel more empowered and more comfortable in doing it the right way and protecting yourself as well.*
>
> employee

Measuring Success

Event Attendance

> *I think we're starting to make a difference. I can see that by the numbers of people who come to our events and look forward to it.*
>
> program lead

- Increase in number of event attendees
- ***Who*** attends - how to reach groups that don't typically attend

Employee Feedback

- Post-event surveys
  - Rating scales
  - Written feedback and suggestions
- Focus groups
- Personal feedback

Employee Feedback

- Post-event surveys
  - Rating scales
  - Written feedback and suggestions
- Focus groups
- Personal feedback

“

You can get messages from the agency, and I go like, ‘Is this real?’ And I send it to the cybersecurity team to say, ‘Am I supposed to be answering this?’ So, basically, as a result of my training here, I am very, very suspicious of everything.

employee

Evidence of Leadership Support

> *If we can get the leadership to look forward to what we're doing and show some interest rather than just being another line on a report, I think that's very good. I think we're making some progress … Now I've got the CIO and the deputy CIO and the CISO and the deputy CISO sitting in the crowd and watching the whole [event] rather than just showing up to give their opening remarks and then leaving.*
>
> program lead

User-Generated Incidents & Reporting

- Trends in employee-involved security incidents and reporting
- Contextualizing the trends
- Holistic approach to measuring effectiveness

User-Generated Incidents & Reporting

> *We're trying to…be able to tie in together the people who take their training to the people who get caught with phishing exercises, the people who are really getting caught with phishing exercises with people who are losing their badges to people who send out information they shouldn't to see what's the correlation here. Are these people just too busy? Are they not paying attention? Is there a training problem?*
>
> program lead

- Trends in employee-involved security incidents and reporting
- Contextualizing the trends
- Holistic approach to measuring effectiveness

Takeaways

The Big Picture

- Emphasize impact, not compliance!
- Obtain leadership buy-in
- Security awareness should not be “one and done”
- Leverage diverse expertise

Approaches

- Use a variety of engaging communication channels and methods
- Information should be relatable, actionable, and tailored
- Reward positive behaviors

Measuring Effectiveness

- Measure program effectiveness by synthesizing data from multiple sources
    - Quantitative
    - Qualitative
- Provide evidence to leadership

THANK YOU!

human-cybersec@nist.gov
https://csrc.nist.gov/projects/human-centered-cybersecurity

Human-Centered Cybersecurity Program

Case Study Article

Q&A

Are There Any Questions?

Federal Information Security Educators (FISSEA) Fall Forum

BREAK

The Forum will resume at 2:30pm ET

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CYBERSECURITY | INNOVATION . AWARENESS . TRAINING

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Welcome Back!

Marian Merritt
Deputy Director of NICE/FISSEA Lead
National Institute of Standards and Technology

Fireside Chat

Kristy Daphnis
Federal Workforce Branch Chief
Office of Management and Budget

Susan Hansche
CISA/CSD Training and Development
Department of Homeland Security

Cybersecurity Awareness Month and More

Lisa Plaggemier

Executive Director
National Cybersecurity Alliance

NATIONAL
CYBERSECURITY
ALLIANCE

Cybersecurity Awareness Month and More

14 November 2023

Cybersecurity Awareness Month Overview

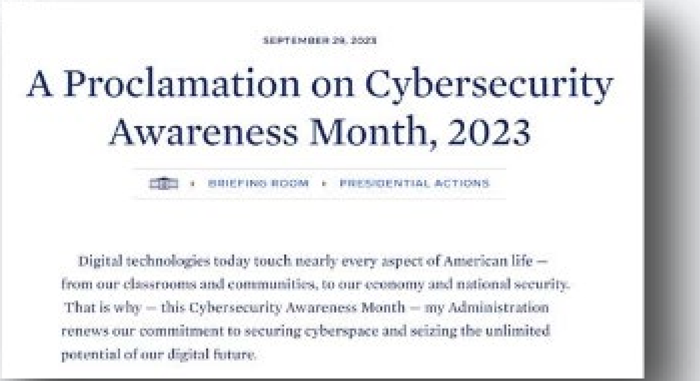
- 20th Cybersecurity Awareness Month
- Focus on four behaviors: phishing, MFA, software updates and passwords
- Launch of Secure Our World campaign
- "Oh Behave" Report on Cybersecurity Attitudes and Behaviors
- Kubikle Web Series

Oh, Behave!
The Annual Cybersecurity Attitudes and Behaviors Report 2023
NATIONAL CYBERSECURITY ALLIANCE
CYBSAFE
SUPPORTED BY

Results

- **4,080** Champions from 93 countries and all 50 states. Total est. reach approximately **102,277,394** individuals
- **765** people tuned into the Oct 4 campaign kick-off event
- **43,274 individuals** posted about the campaign in **136,646 posts** across social media platforms

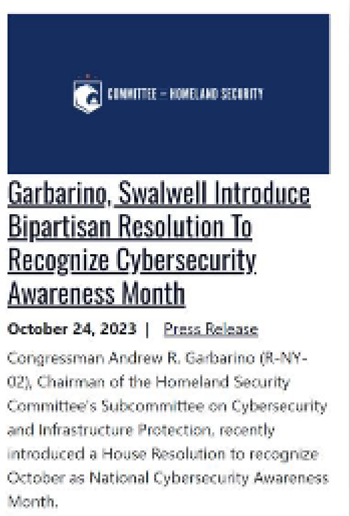
Resulted in 651,263 total engagements and **1.8b** potential impressions


SEPTEMBER 29, 2023

A Proclamation on Cybersecurity Awareness Month, 2023

BRIEFING ROOM • PRESIDENTIAL ACTIONS

Digital technologies today touch nearly every aspect of American life — from our classrooms and communities, to our economy and national security. That is why — this Cybersecurity Awareness Month — my Administration renews our commitment to securing cyberspace and seizing the unlimited potential of our digital future.


COMMITTEE ON HOMELAND SECURITY

Garbarino, Swalwell Introduce Bipartisan Resolution To Recognize Cybersecurity Awareness Month

October 24, 2023 | Press Release

Congressman Andrew R. Garbarino (R-NY-02), Chairman of the Homeland Security Committee's Subcommittee on Cybersecurity and Infrastructure Protection, recently introduced a House Resolution to recognize October as National Cybersecurity Awareness Month.

Results

US Media Reach 7.2B

Morningstar
Yahoo Finance
Marketwatch
60 Minutes
Fox
CBS
NBC
ABC
NPR
MSN
CNN
Time
New York Times
Economist
Wall Street Journal
Fortune
USAToday
Los Angeles Times
Washington Post

Speaking Engagements

- **9,500** individuals attended an NCA session or game show
- **135** companies reached

CVS

StateFarm®

COSTCO WHOLESALE®

Nasdaq

VISA

CISCO

USDA United States Department of Agriculture

U.S. DEPARTMENT OF HOMELAND SECURITY
Transportation Security Administration

MTA

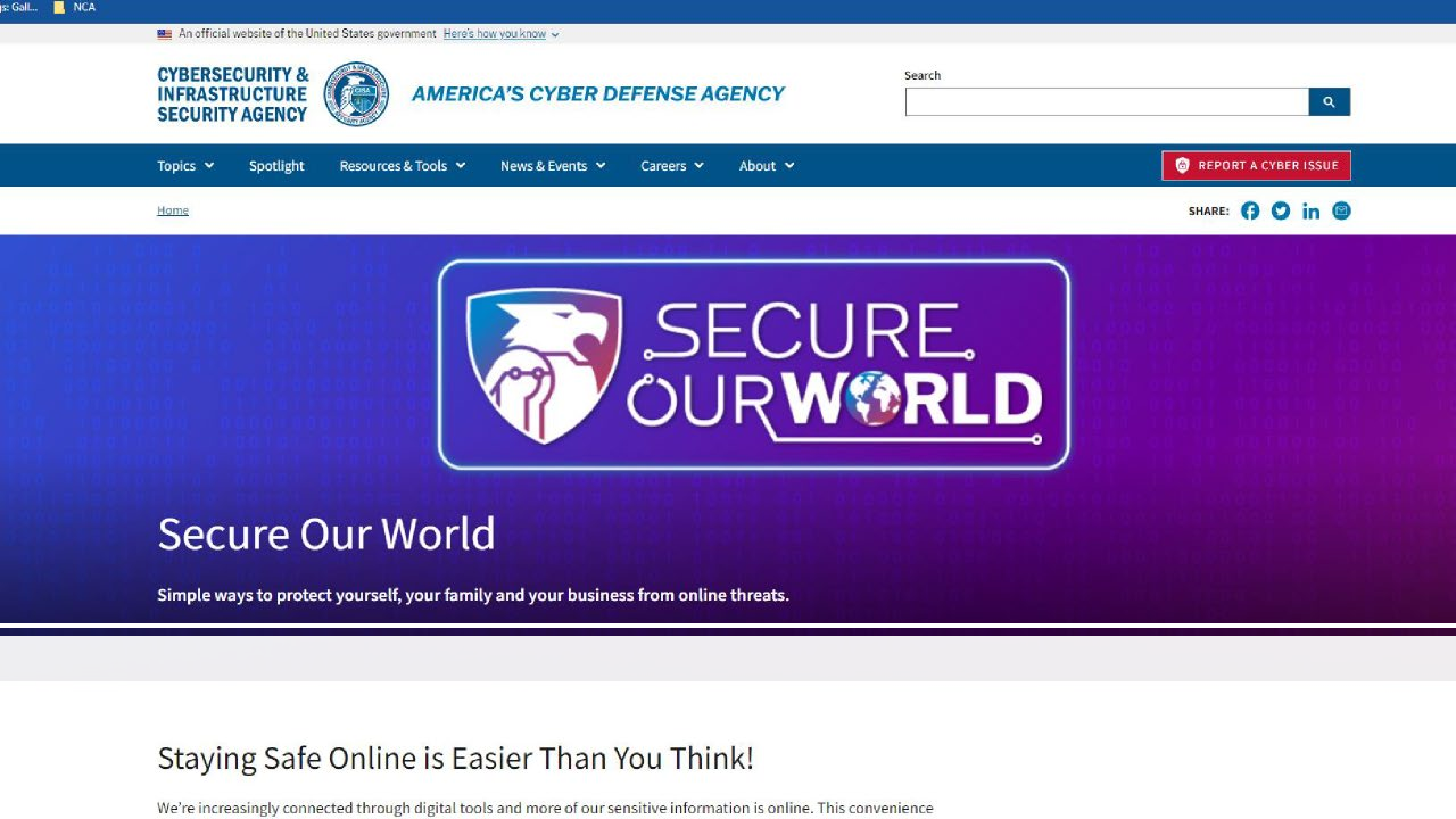
McAfee™

NORTH AMERICAN AEROSPACE DEFENSE COMMAND

Oh Behave 2023

NATIONAL CYBERSECURITY ALLIANCE
CYBSAFE
Oh, Behave!
The Annual Cybersecurity Attitudes and Behaviors Report 2023

- Launched Oct 3, 2023
- 1,534 downloads to date
  - 42% increase compared to same period in 2022
- Coverage:
  - Fortune (UVM: 19M)
  - Beta News (UVM: 1M)
  - Dark Reading (UVM: 405K)
  - CyberWire (UVM: 32K)



An official website of the United States government Here's how you know

CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

AMERICA'S CYBER DEFENSE AGENCY

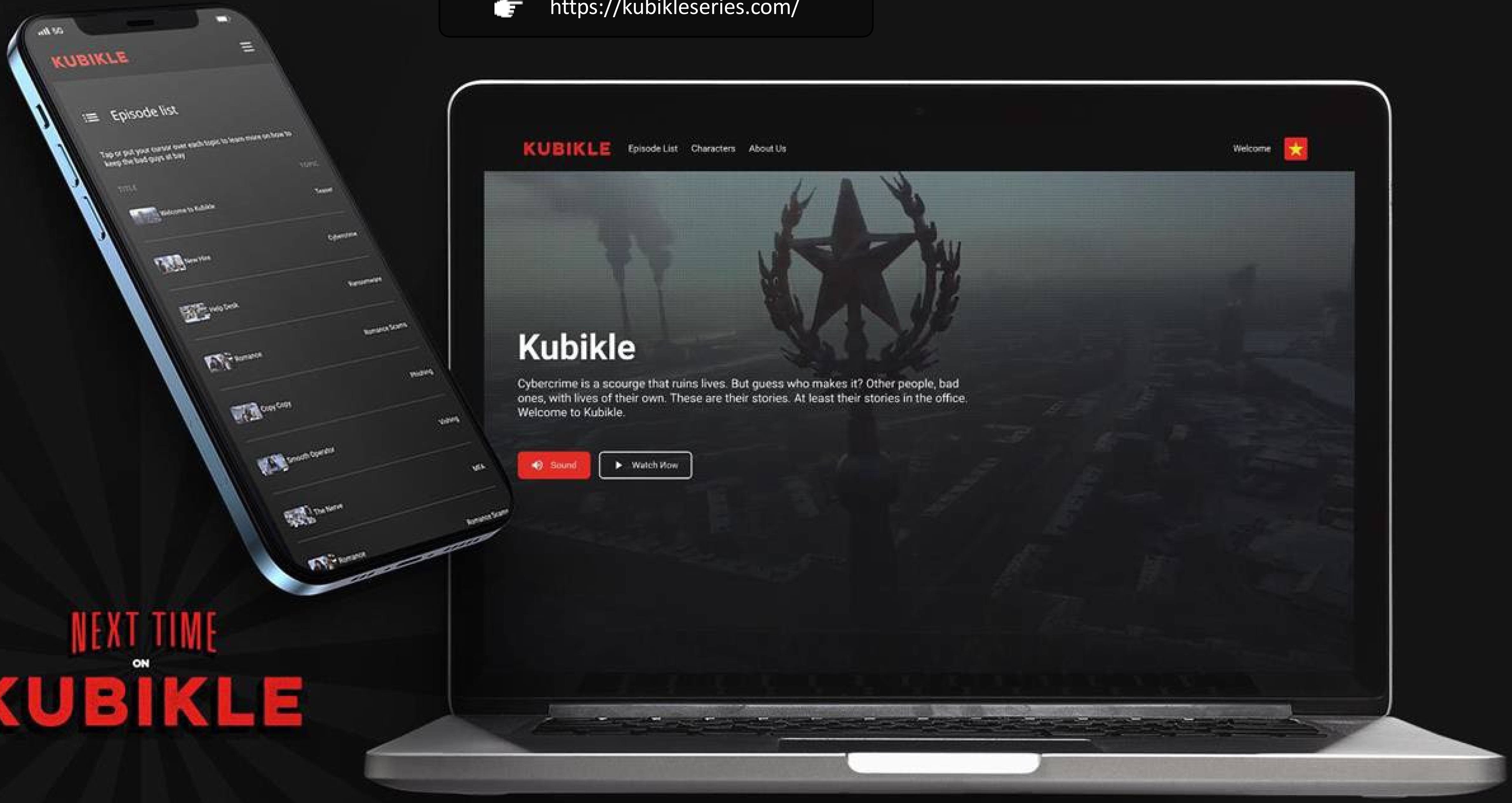
Secure Our World

Simple ways to protect yourself, your family and your business from online threats.

Staying Safe Online is Easier Than You Think!

We're increasingly connected through digital tools and more of our sensitive information is online. This convenience

☛ https://kubikleseries.com/



Episode list

Tap or put your cursor over each topic to learn more on how to keep the bad guys at bay

TITLE	TOPIC
Welcome to Kubikle	Teaser
New Hire	Cybercrime
Help Desk	Ransomware
Romance	Romance Scams
Copy Copy	Phishing
Smooth Operator	Vishing
The Nerve	MFA
Romance	Romance Scams

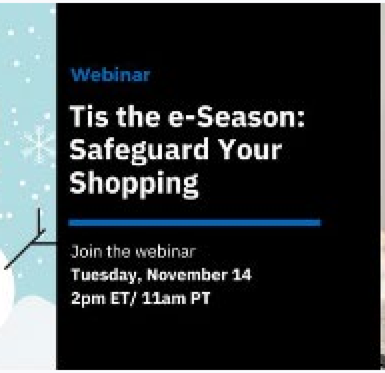
Kubikle

Cybercrime is a scourge that ruins lives. But guess who makes it? Other people, bad ones, with lives of their own. These are their stories. At least their stories in the office. Welcome to Kubikle.

NEXT TIME
ON
KUBIKLE

Online Holiday Shopping Campaign

- Social media campaign
- Toolkit – tips sheets, graphics, holiday cards
- Webinar with Trend Micro
- Media pitching
    - interview with BBC on Nov 24


Webinar
Tis the e-Season: Safeguard Your Shopping
Join the webinar
Tuesday, November 14
2pm ET/ 11am PT

Give the gift of digital
peace of mind
SPREAD THE JOYOUS WORD ABOUT ALL THE
WONDERFUL FREE RESOURCES AT
STAYSAFEONLINE.ORG

SHOP SAFE ONLINE.
Research online vendors and read
reviews before making a purchase
to confirm they are legitimate.
NATIONAL
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Convene: Clearwater Beach Florida 2024

Sheraton Sand Key January 17-18

Oh, Behave!

The Annual Cybersecurity Attitudes and Behaviors Report 2023

NATIONAL CYBERSECURITY ALLIANCE

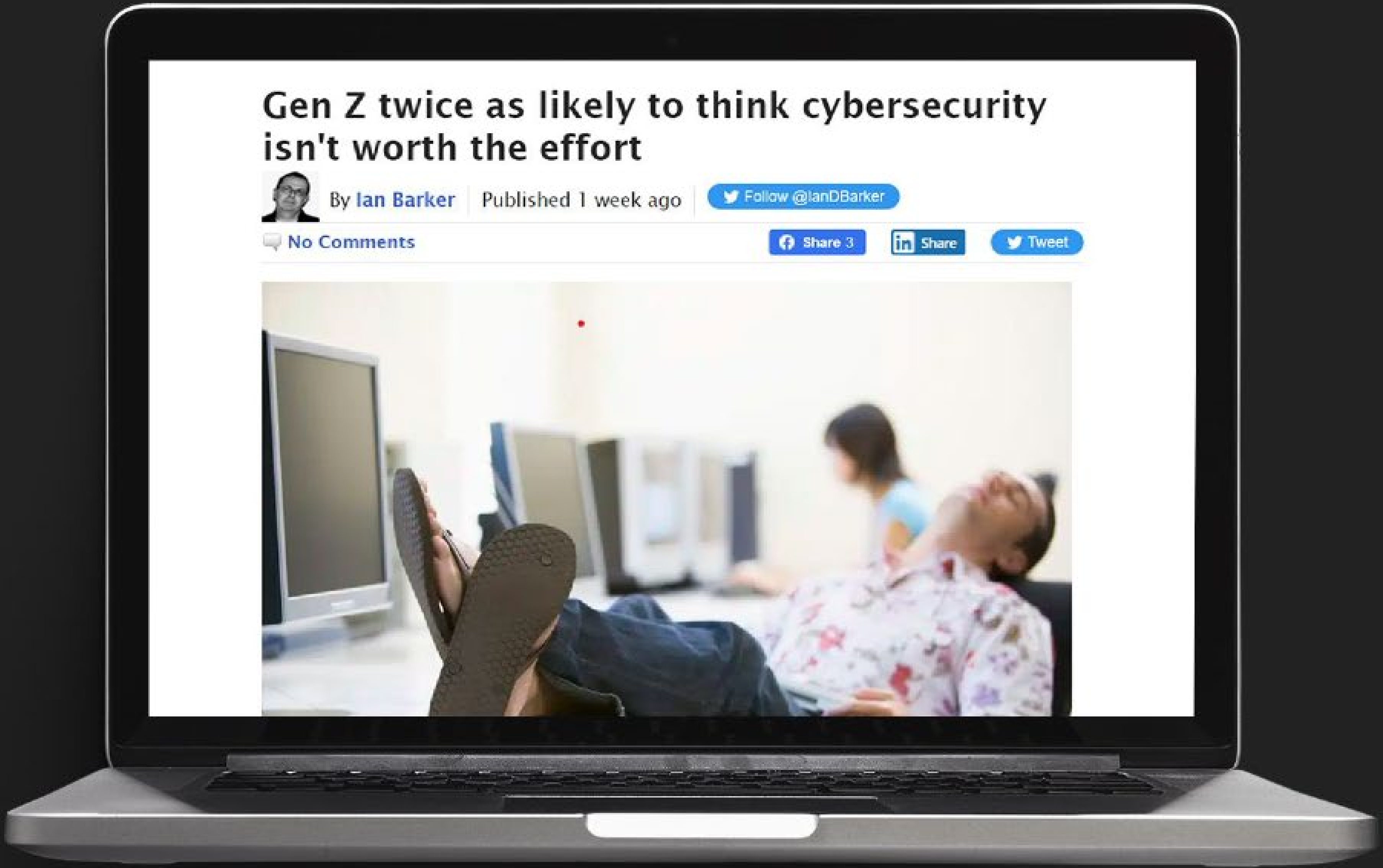
CYBSAFE

Oh, Behave!

The Annual Cybersecurity Attitudes and Behaviors Report 2023

Security Behaviors

- Password habits: password creation, password management, etc.
- Using Multi-Factor Authentication (MFA)
- Installing the latest updates
- Checking for signs of phishing
- Backing up data



Gen Z twice as likely to think cybersecurity isn't worth the effort

By Ian Barker | Published 1 week ago

No Comments

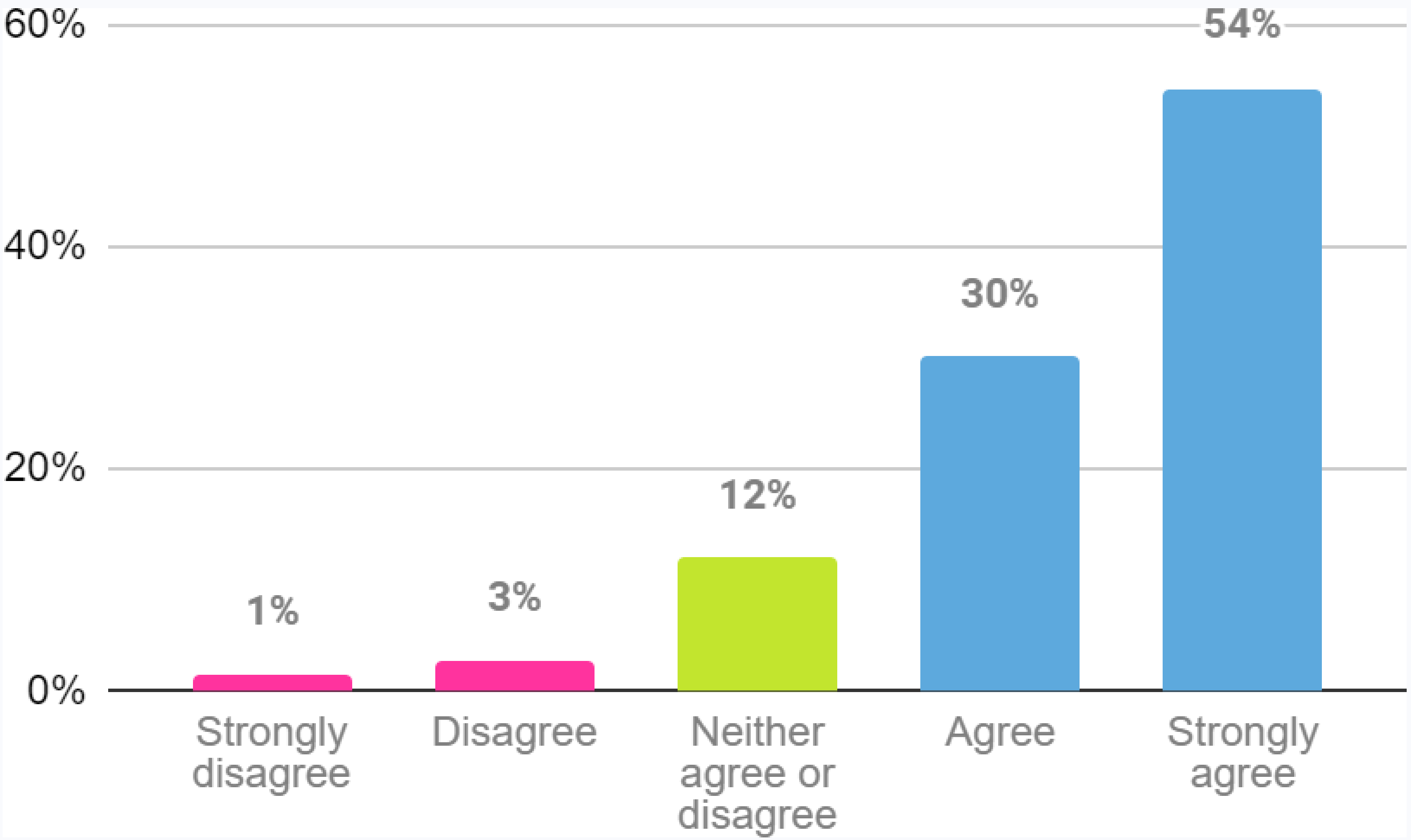
Prioritizing Cybersecurity

Question:

How do you feel about cyber security?

Statement:

"I feel that staying secure online is a priority"



Security Behaviors

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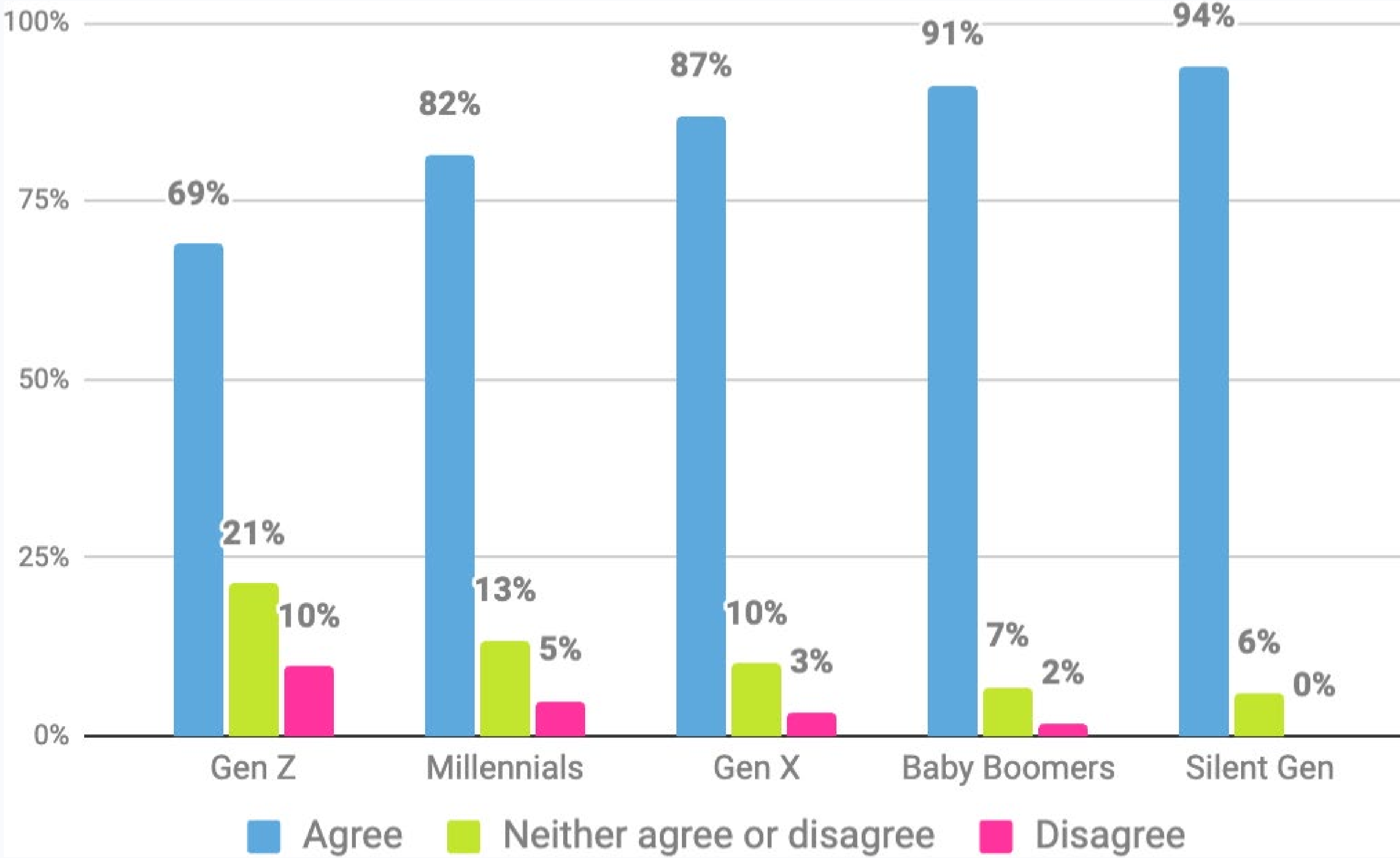


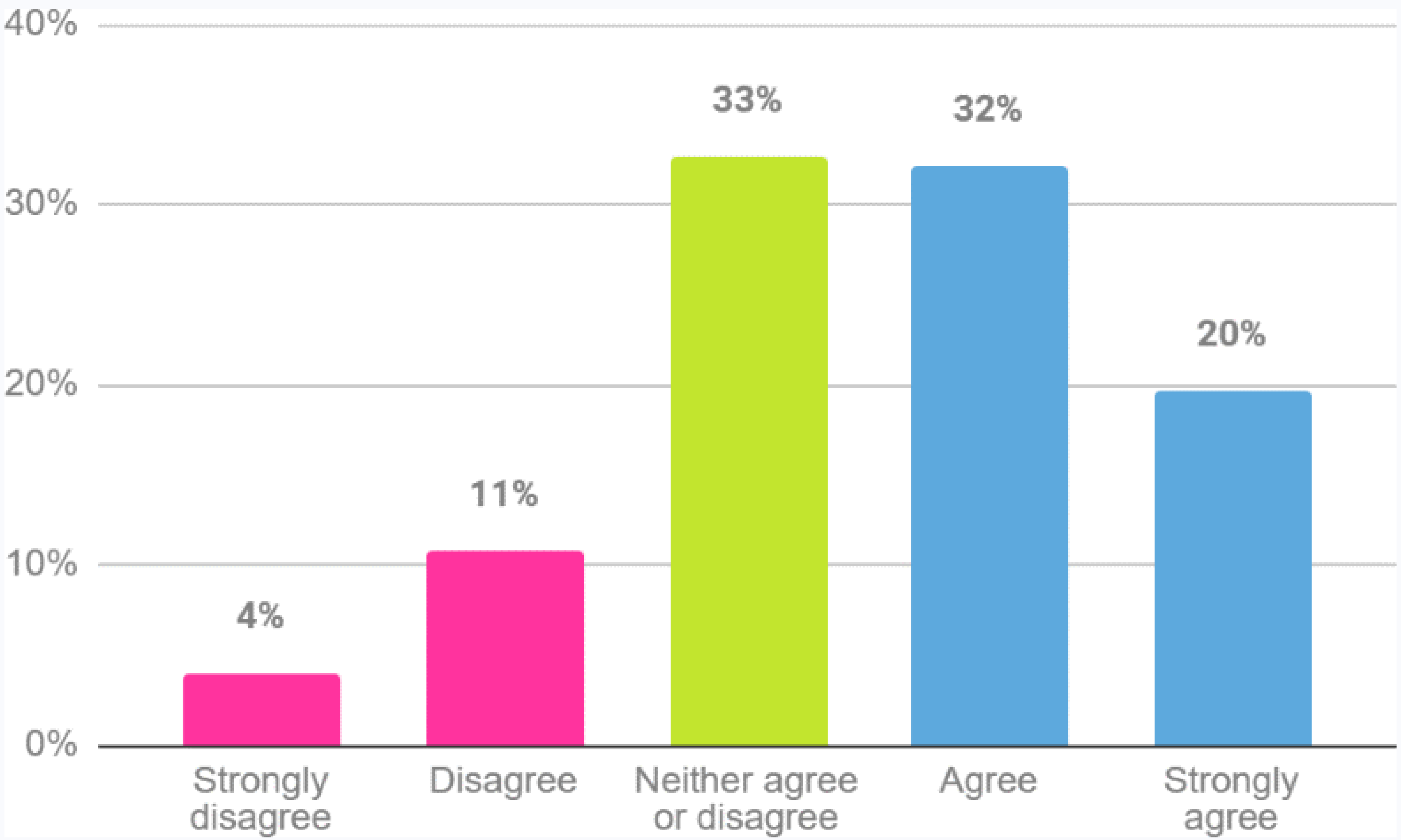
Feelings

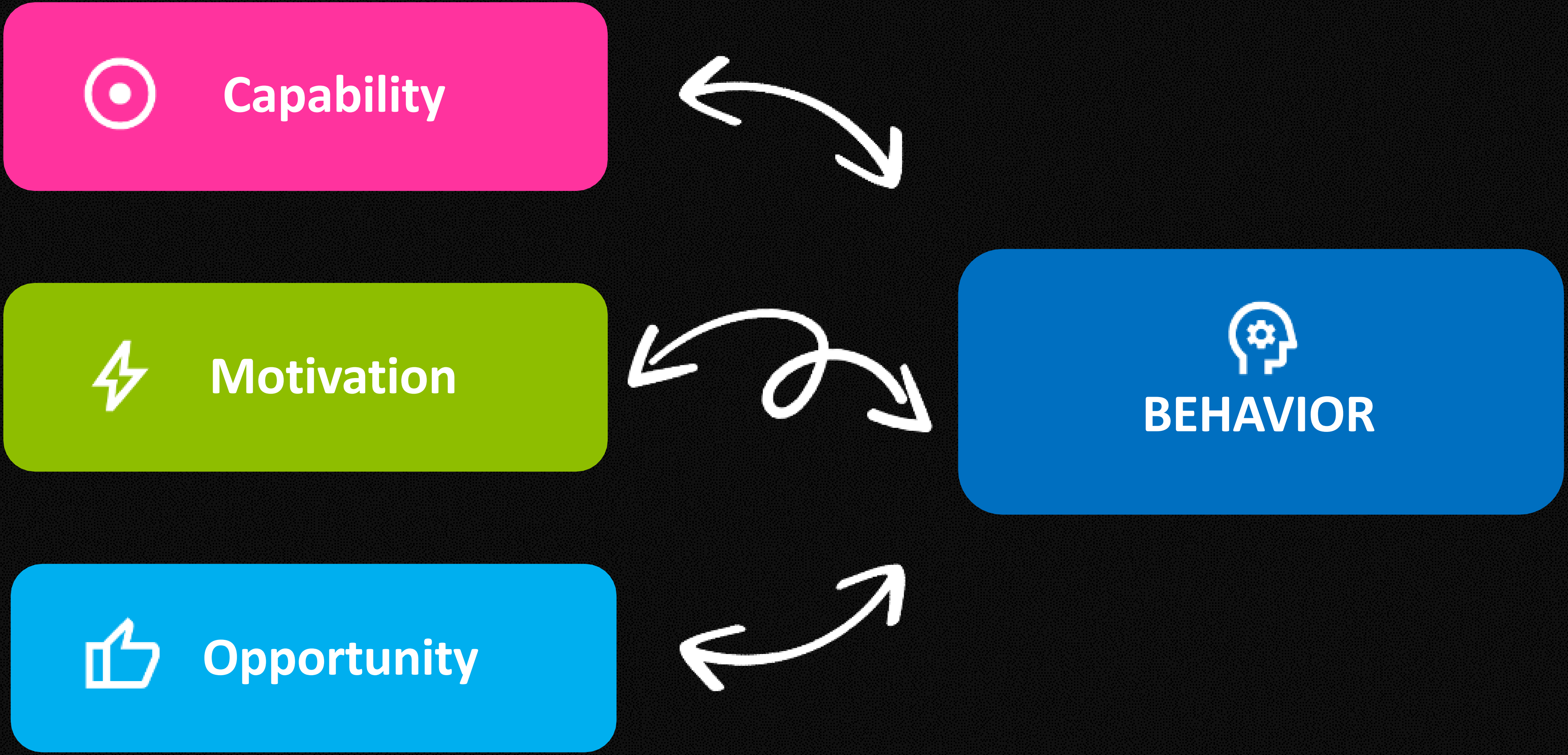
Question:

How do you feel about cyber security?

Statement:

"Staying secure online is under my control."





Capability

Motivation

Opportunity

BEHAVIOR

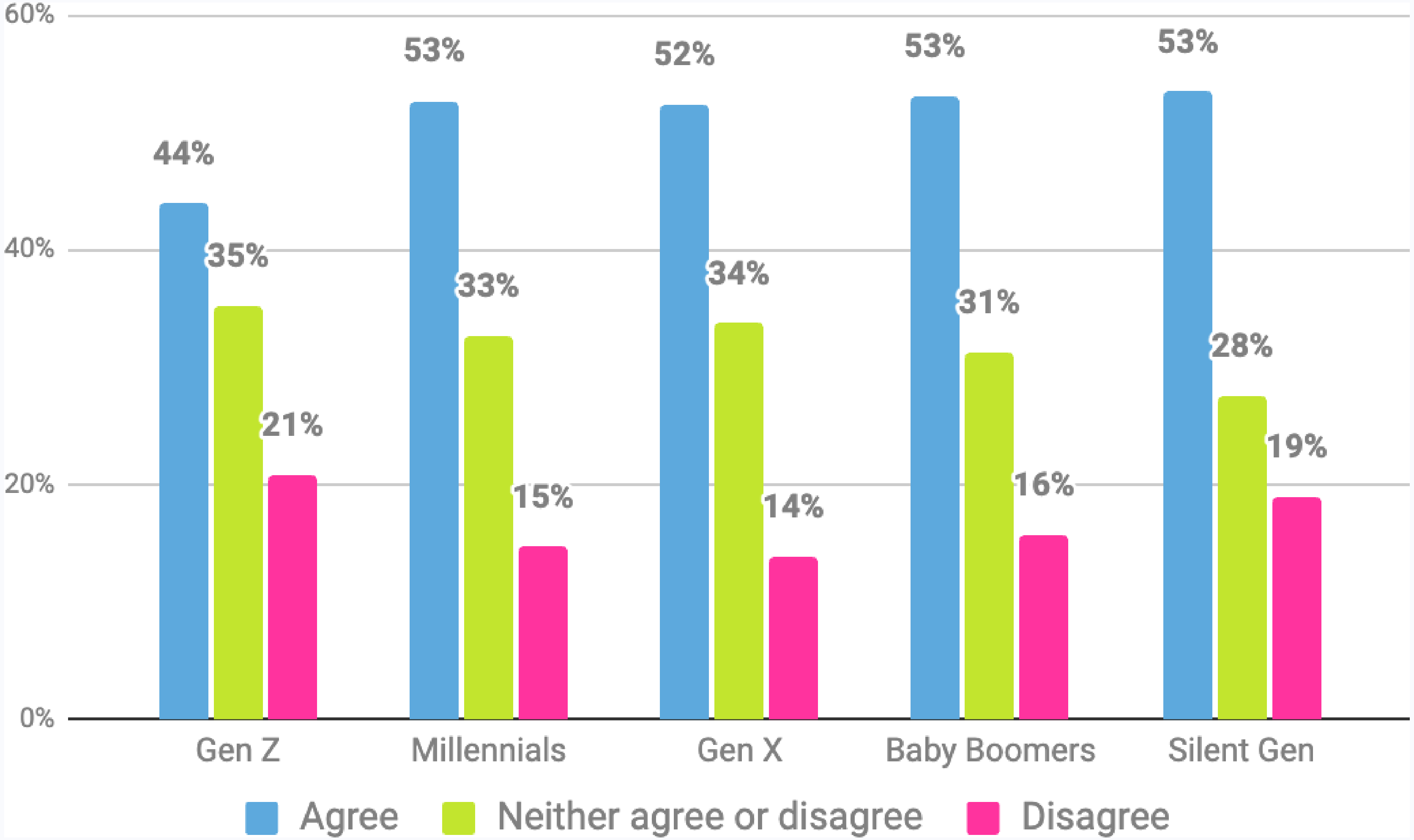
Feelings

Question:

How do you feel about cyber security?

Statement:

"Staying secure online is under my control."



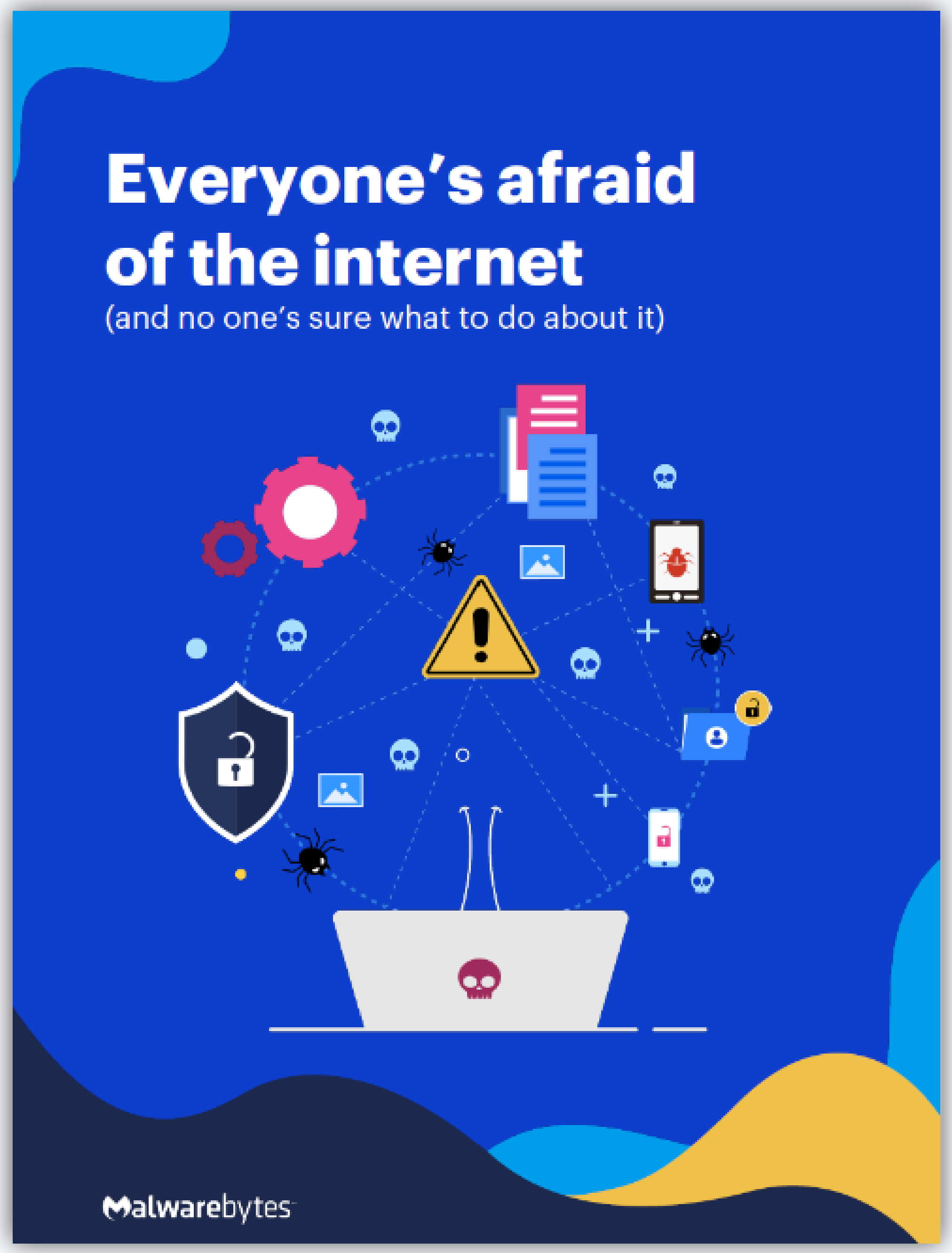
Huh?

43%

of Gen Zs reported having lost data or money due to phishing

39%

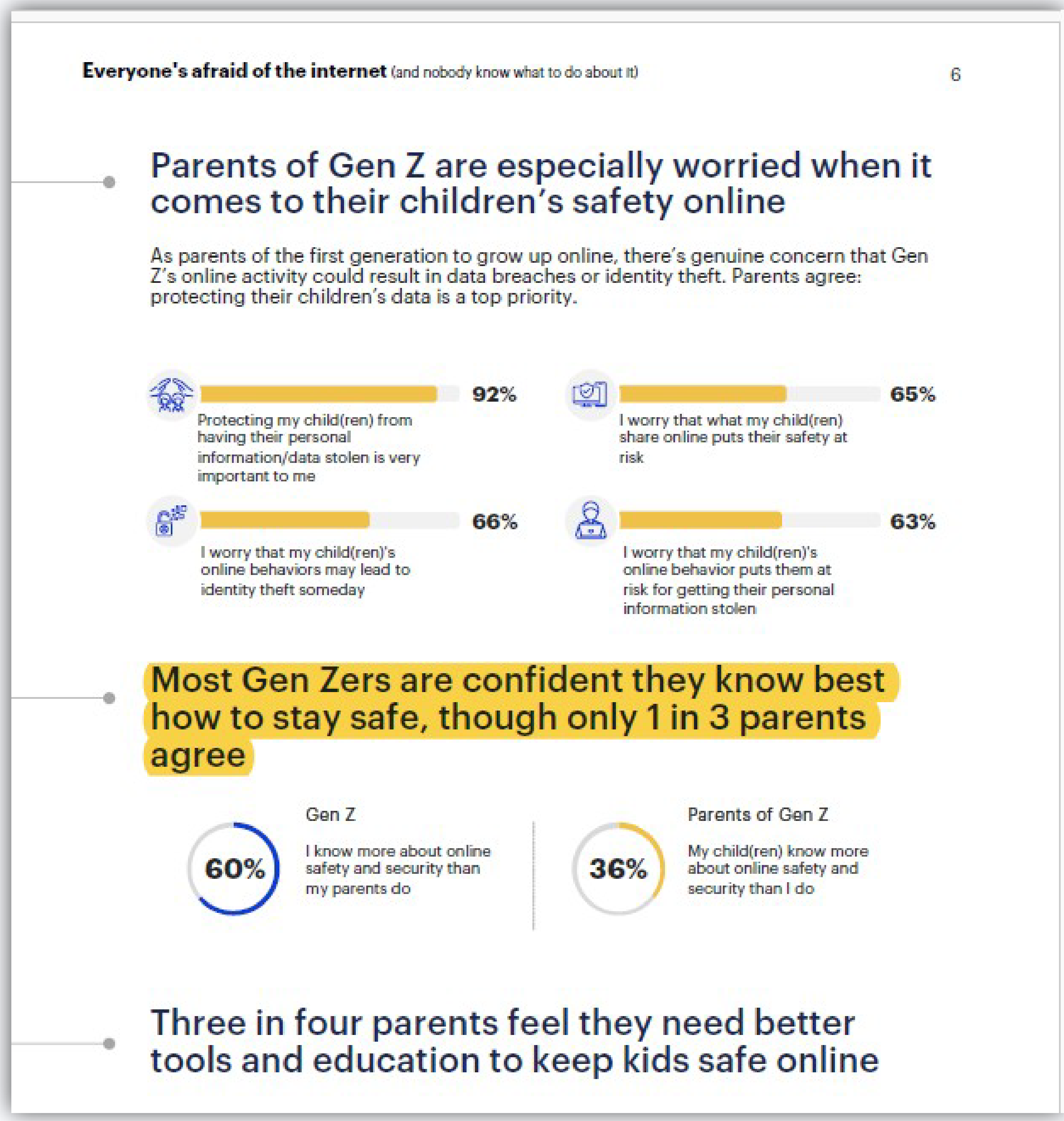
of Gen Zs reported family members rely on them for online security



Everyone's afraid of the internet

(and no one's sure what to do about it)

Malwarebytes



Everyone's afraid of the internet (and nobody know what to do about it) 6

Parents of Gen Z are especially worried when it comes to their children's safety online

As parents of the first generation to grow up online, there's genuine concern that Gen Z's online activity could result in data breaches or identity theft. Parents agree: protecting their children's data is a top priority.

92% Protecting my child(ren) from having their personal information/data stolen is very important to me

65% I worry that what my child(ren) share online puts their safety at risk

66% I worry that my child(ren)'s online behaviors may lead to identity theft someday

63% I worry that my child(ren)'s online behavior puts them at risk for getting their personal information stolen

Most Gen Zers are confident they know best how to stay safe, though only 1 in 3 parents agree

Gen Z

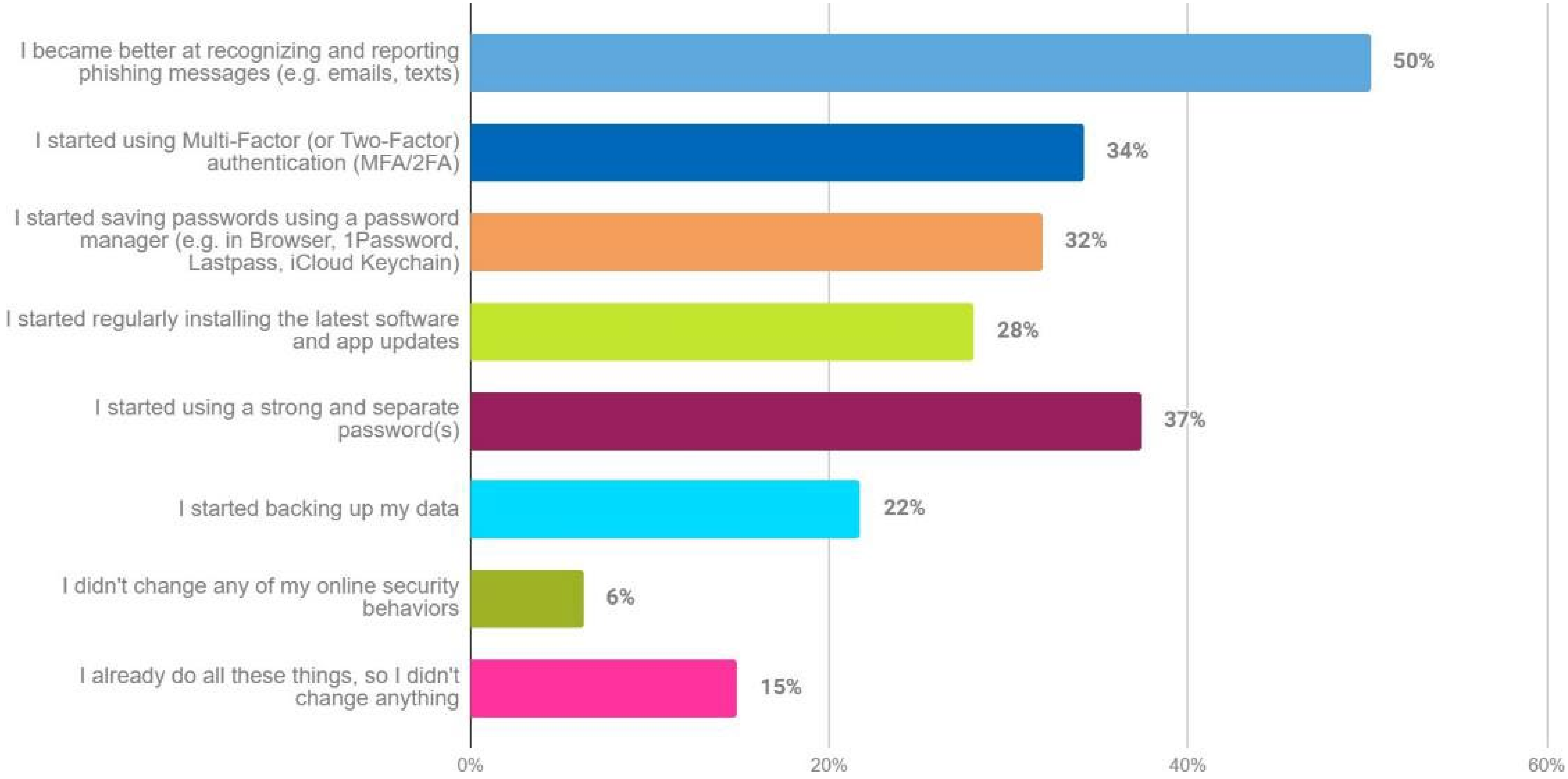
60% I know more about online safety and security than my parents do

Parents of Gen Z

36% My child(ren) know more about online safety and security than I do

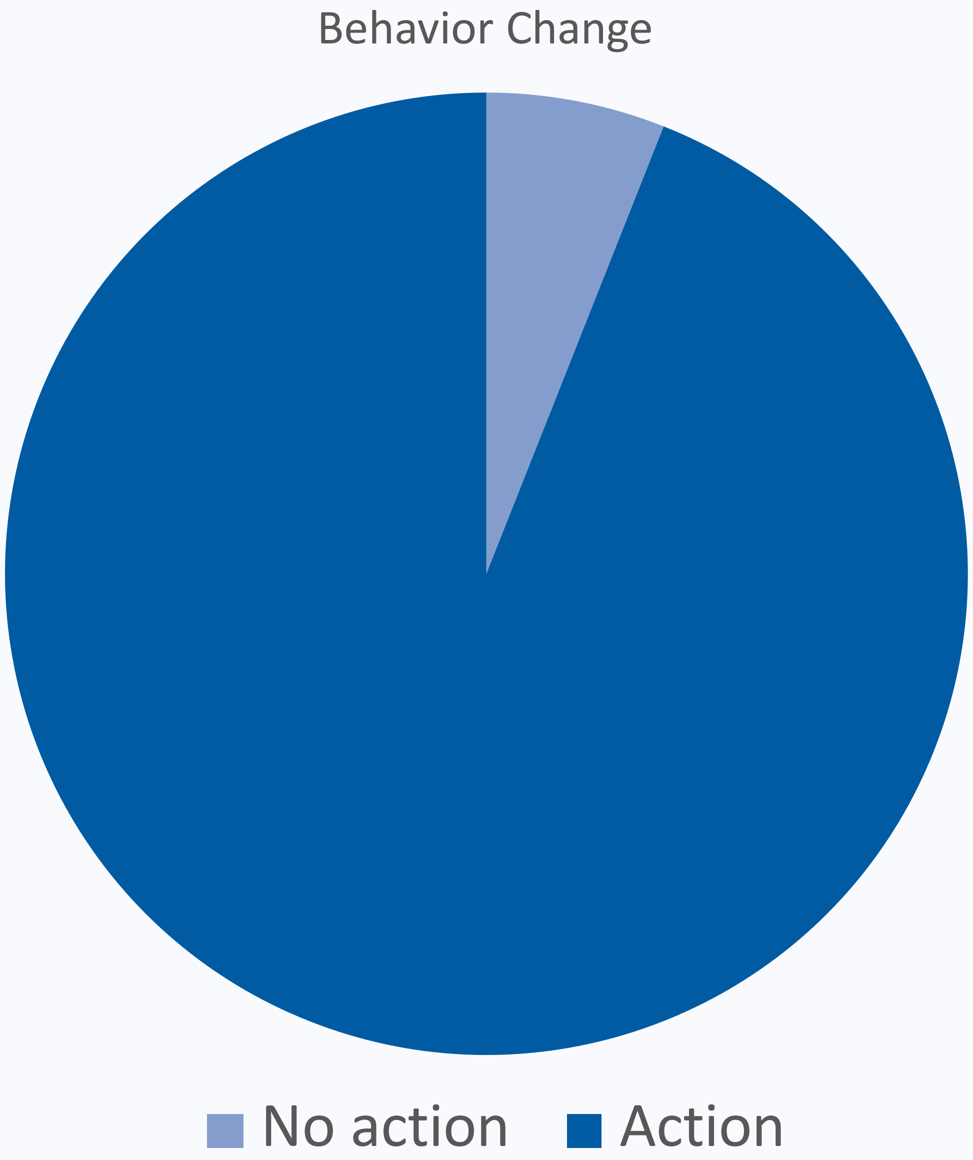
Three in four parents feel they need better tools and education to keep kids safe online

Security Behavior



ONLY 6%

TOOK NO ACTION



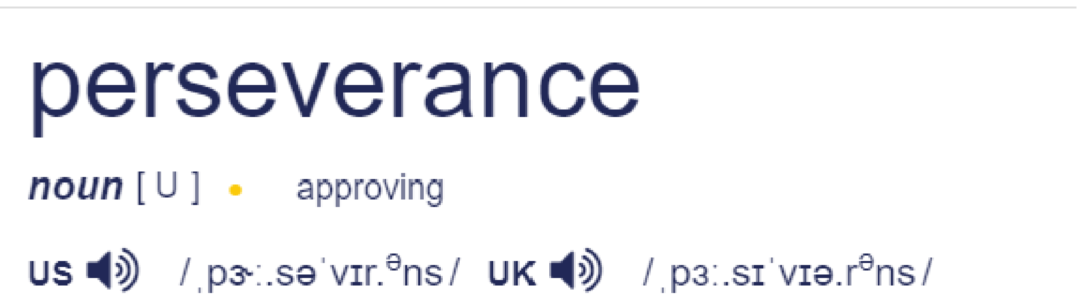
Improving Training Effectiveness

- Design awareness and training for everyone
- More than once a year
- Train where the risk is
- Get people's attention
- Don't insult, judge or belittle

“The internet needs more helpers—people who will listen to others in need, *answer simple tech questions without judgment*…teaching every user along the way.”

- Oren Arar, VP of Consumer Privacy, Malwarebytes

NATIONAL CYBERSECURITY ALLIANCE



perseverance

noun [U] ● approving

US 🔊 /ˌpɝː.səˈvɪr.ᵊns/ **UK** 🔊 /ˌpɜː.sɪˈvɪə.rᵊns/

Continued effort to do or achieve something, even when this is difficult or takes a long time

Stay safe online.

NATIONAL
CYBERSECURITY
ALLIANCE

Website
StaySafeOnline.org

Twitter
@staysafeonline

Facebook
/staysafeonline

LinkedIn
/national-cyber-security-alliance

Email
info@staysafeonline.org

Q&A

Are There Any Questions?

An Ounce of Prevention Is Worth a Pound of Cure: How to Assess the Impact of Your Awareness Campaigns

Nadine Michaelides

Founder

Anima People

Nac des

Cyber Psychologist
Founder of Anima People

ANIMA

AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE- HOW TO ASSESS THE IMPACT OF YOUR AWARENESS CAMPAIGNS

> An awareness campaign is crucial in that it is the vehicle for disseminating information that all users need
>
> (Bada, Sasse & Nurse, 2019)

SECURITY AWARENESS CAMPAIGNS

Effective user security awareness campaigns can greatly enhance the information assurance posture of an organization

User awareness represents a significant challenge in the security domain, with the human factor ultimately being the element that is exploited in a variety of attack scenarios.

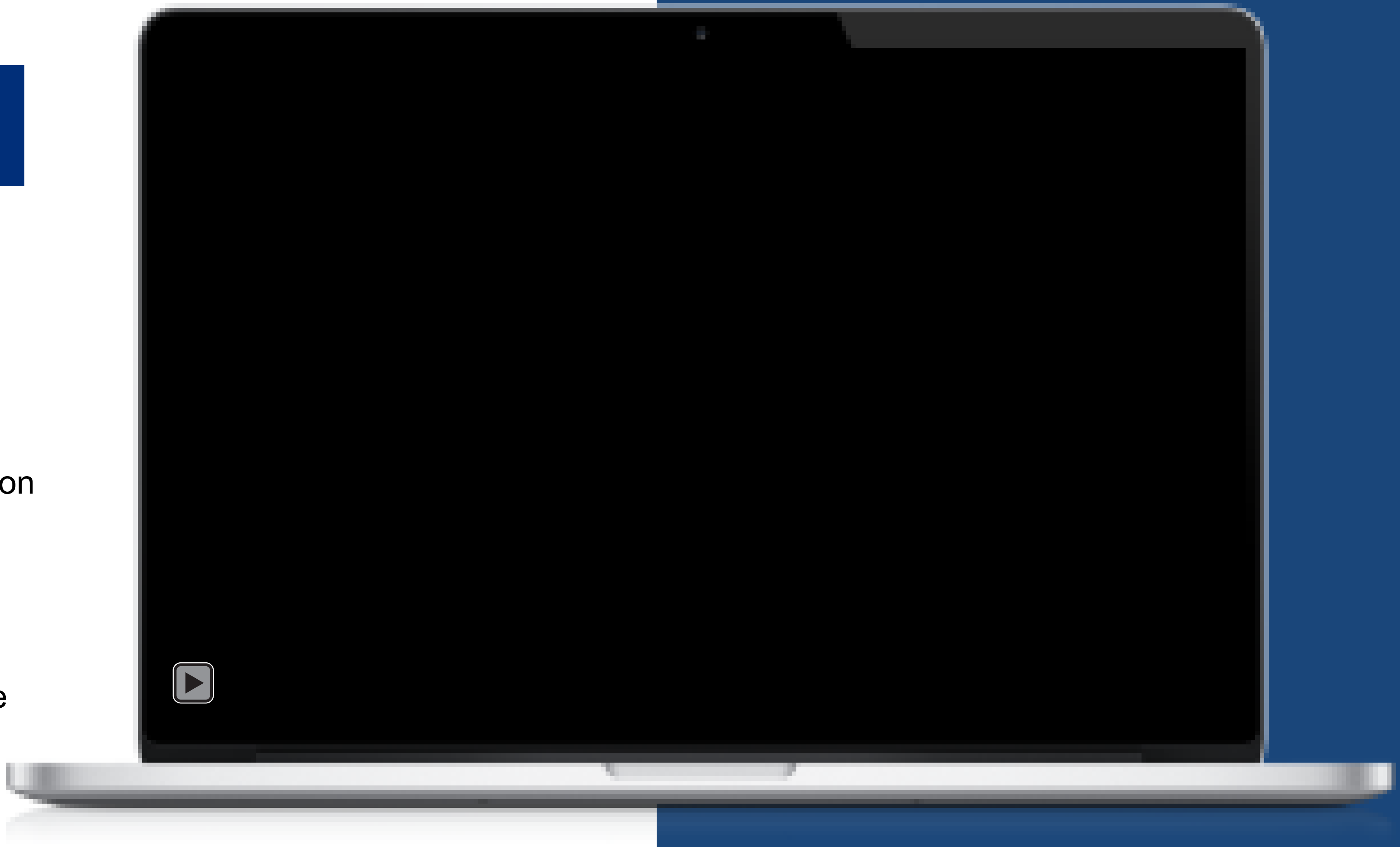
Psychological theories of education, learning, environmental and healthcare behavioural change can be used to make information security awareness methods more effective (Khan et al. 2011).

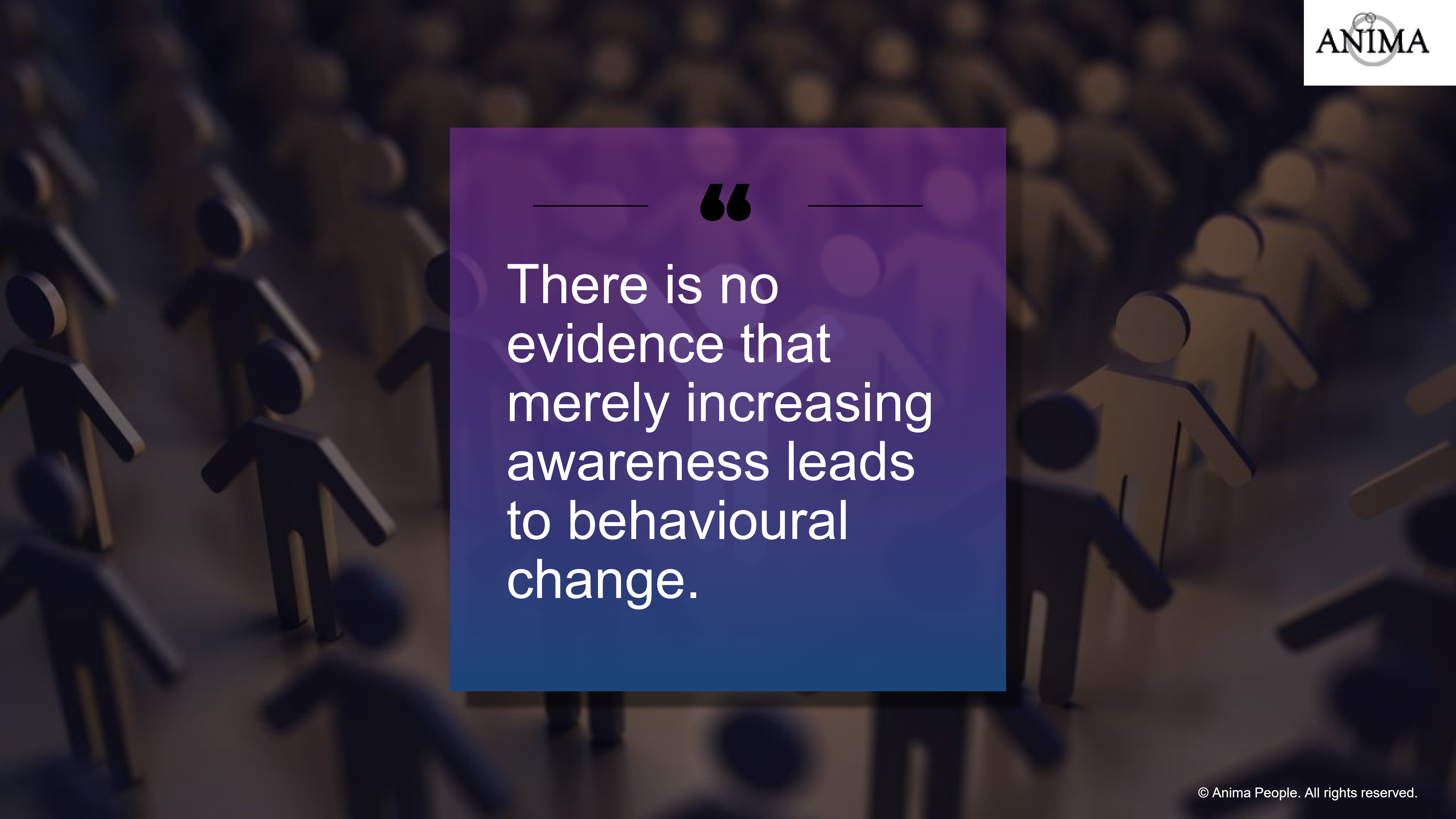
HOW SUCCESSFUL ARE CAMPAIGNS?

Steen, Norris, Atha & Joinson (2020)

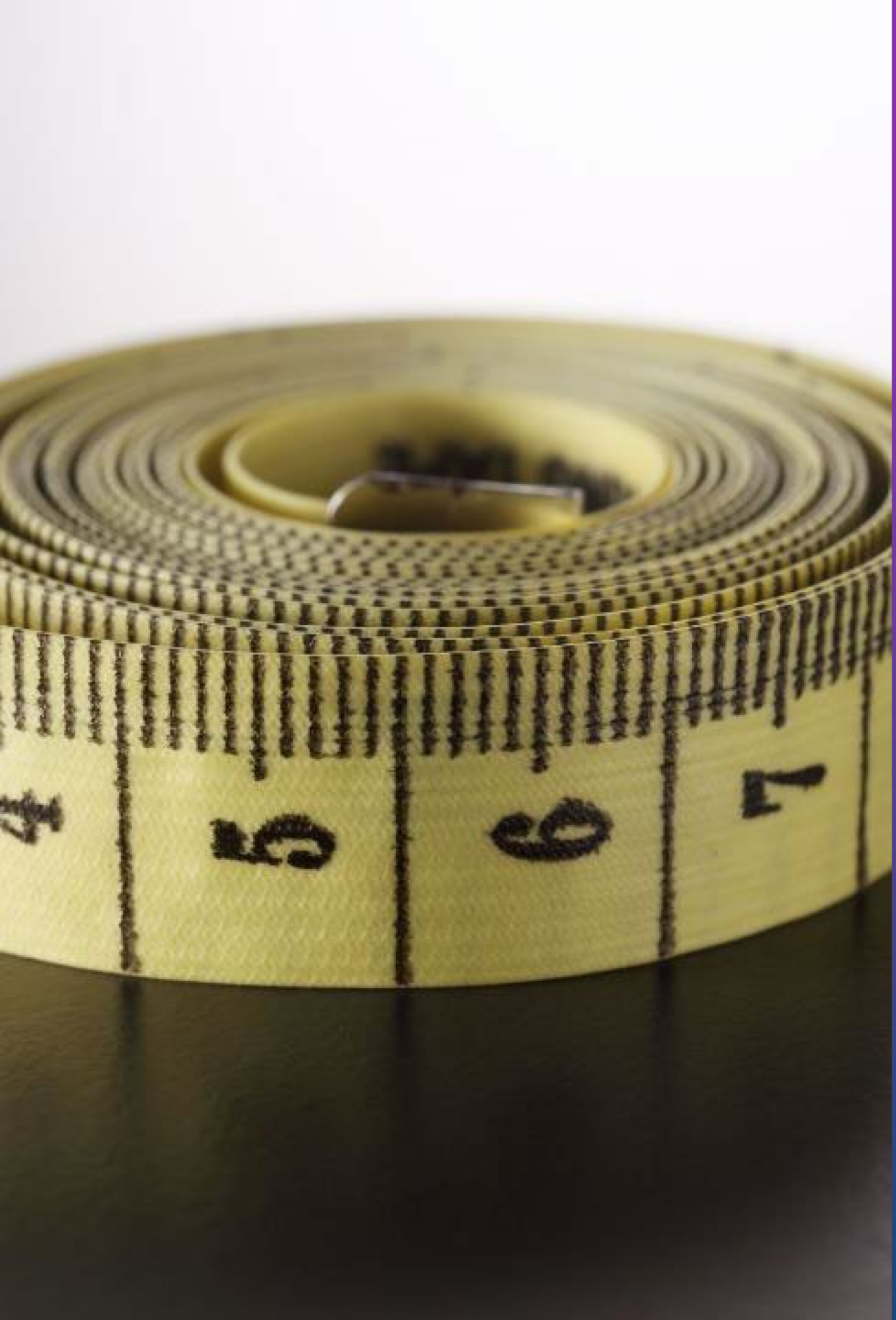
- Analysed 17 government-sponsored cybersecurity campaign materials

- Results were that security campaigns are often focused on education and increasing awareness, under the assumption that as long as citizens are aware of the risk, and are provided with information on how to improve their security behaviour, behaviour will change





> There is no evidence that merely increasing awareness leads to behavioural change.



ONE SIZE FITS ALL?!...

ANIMA

- Upgrade the awareness campaigns so they focus on specific behaviours and threats
- Wherever possible try to avoid targeting the general public and target specific groups of users e.g. cyberbullying
- Avoid a ‘one size fits all’ approach
- Provide ‘coping skills’ in how to manage in certain situations

ANIMA

Match an individual's self-guide or self-monitoring style

PERSUASION…

Use ‘persuasion’ techniques as well as educational

Use techniques such as coercion and modelling, incentivization and enablement

Include cultural factors to encourage intrinsic motivation to security tapping into cognitive, affective or motivational characteristics

Make it personal and collective and relevant to the individual as well as the group.

PERCEPTIONS OF RISK…

Be aware and counter-in the varying perceptions of risk culturally between nations and states, or other groups of people

There are four distinctive categories that distinguish country cultures; power distance, collectivism vs. individualism, femininity vs. masculinity and uncertainty avoidance

FEAR…

- Refrain from using messages that are fear-provoking

- Not conducive to behaviour change

- Interventions based on theoretical knowledge such as social learning theory or the theory of self-efficacy, which takes into account cultural beliefs and attitudes, are more likely to succeed…

- especially when we take into account varying cultures.

ANIMA

REGULATORY FOCUS THEORY

Guided by a need for nurturance

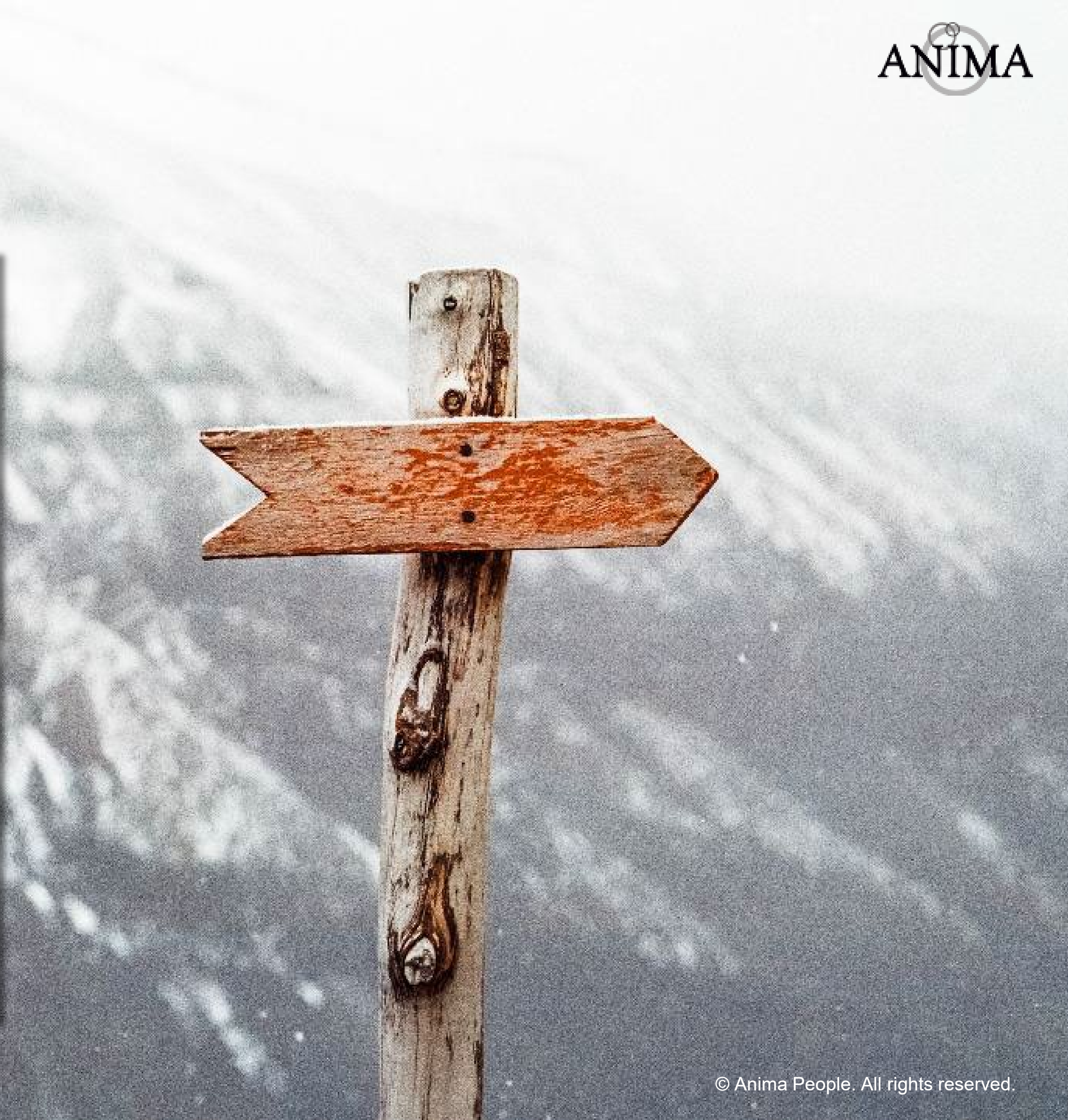
And a need to align with the ideal self

Messages should be ‘promotion and prevention’ focused

And NOT instill fear…

SIMPLICITY...

> Campaigns should use simple consistent rules of behaviour that people can follow, facilitating perceived control and better acceptance of the suggested behaviour.



CONTEXT…

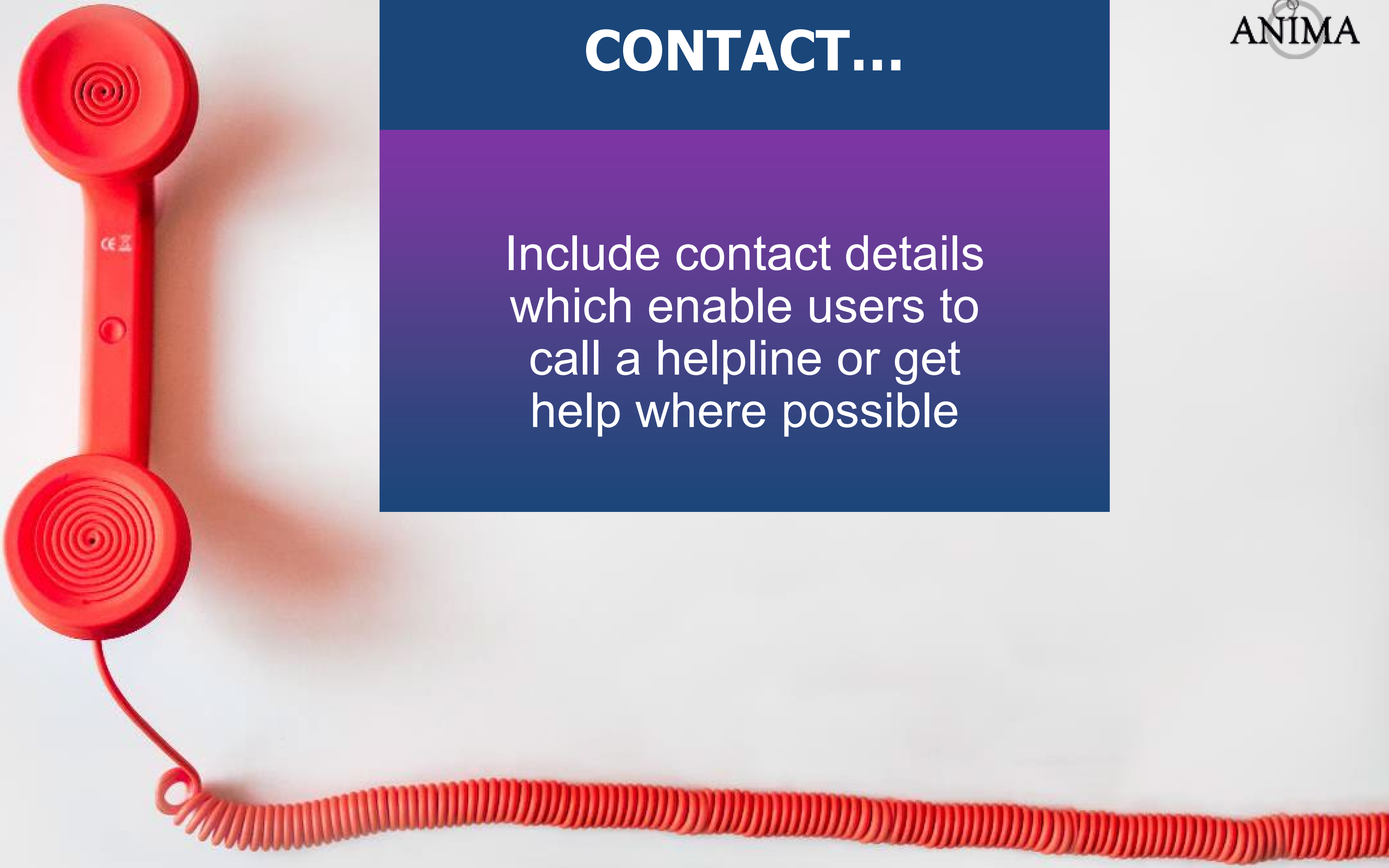
ANIMA

> “
>
> Avoid monotonous advice from ‘security experts’ such as ‘change passwords’ which doesn’t take into account the responsibility and workload issues that may be present, acting as barriers to good cyber hygiene.

ANIMA

CONTACT…

Include contact details which enable users to call a helpline or get help where possible



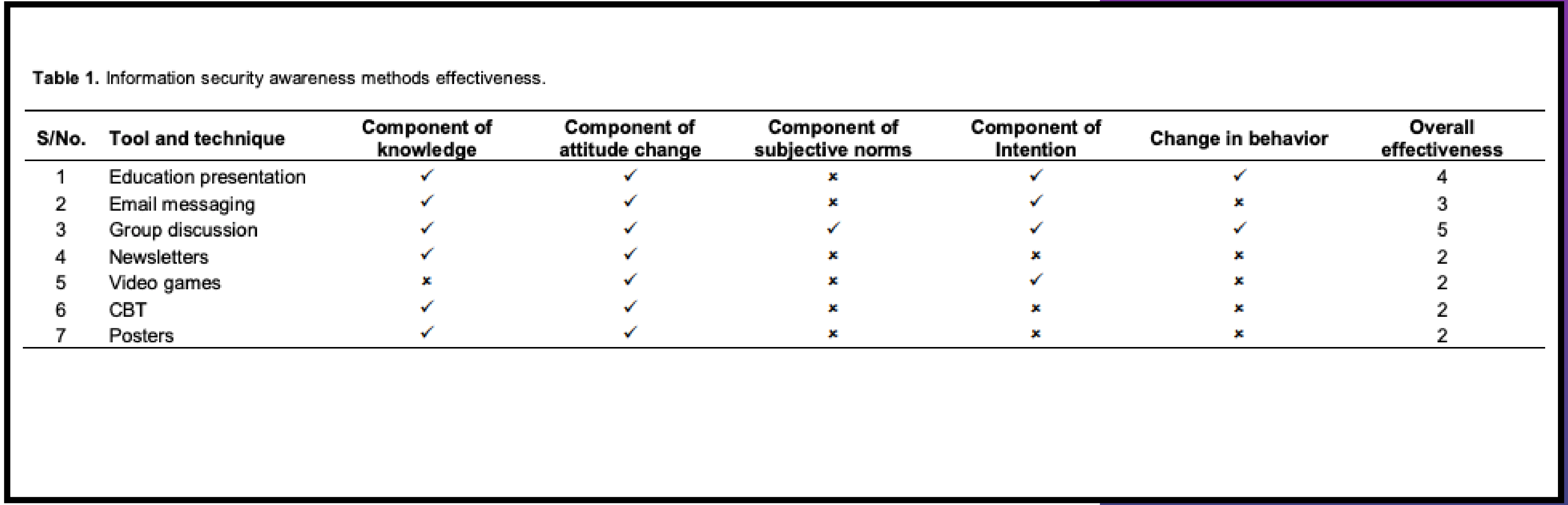


Table 1. Information security awareness methods effectiveness.

S/No.	Tool and technique	Component of knowledge	Component of attitude change	Component of subjective norms	Component of Intention	Change in behavior	Overall effectiveness
1	Education presentation	✓	✓	×	✓	✓	4
2	Email messaging	✓	✓	×	✓	×	3
3	Group discussion	✓	✓	✓	✓	✓	5
4	Newsletters	✓	✓	×	×	×	2
5	Video games	×	✓	×	✓	×	2
6	CBT	✓	✓	×	×	×	2
7	Posters	✓	✓	×	×	×	2

FEEDBACK

WHAT DO WE NEED TO KNOW?

ANIMA

1

Whether the information has been received and by what means e.g. newsletter, social media, and this is where social media engagement metrics can be very useful, and…

1

Whether that information changes the perceptions, opinions and attitudes of those individuals, and

1

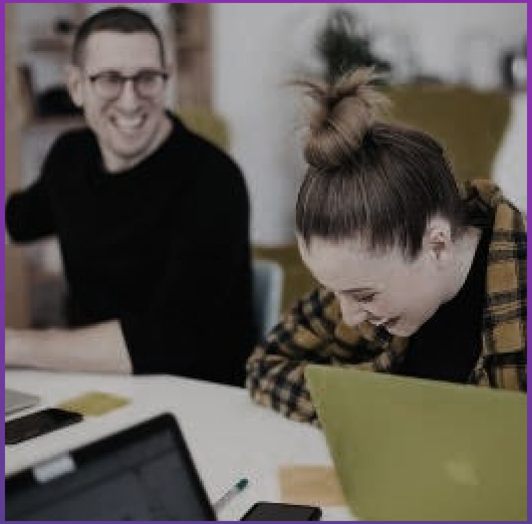
Whether those psychological processes translate to behaviour change, both for individuals and for communities.

> “
>
> Understanding how people perceive risks is critical to creating effective awareness campaigns

EXAMPLES OF USEFUL METRICS…

85%

Employees hate their job



52%

Employees feel they get a positive experience

48%

Say the biggest roadblock is ‘not enough time’

??%

Time needed to adopt good hygiene

ANIMA

UNDERSTANDING PEOPLE'S MOTIVATION TOWARDS SECURITY.

Some people may not intentionally be malicious but still offer a threat to security. Despite the best training in the world, people must understand security's importance.

People can be your best asset and your biggest threat to security.

UNDERSTANDING PEOPLE'S MOTIVATION TOWARDS SECURITY.

Staff motivation towards security can change due to reasons that often go unrecognized or not considered important. Examples include:

A promised pay review missed or ignored.

A change of manager.

Personal circumstances changing (divorce, bereavement, unexpected bill).

HOW…?

1

Investigate what's happenning behind the scenes

2

Get feedback direct from users

3

Implement the appropriate strategy

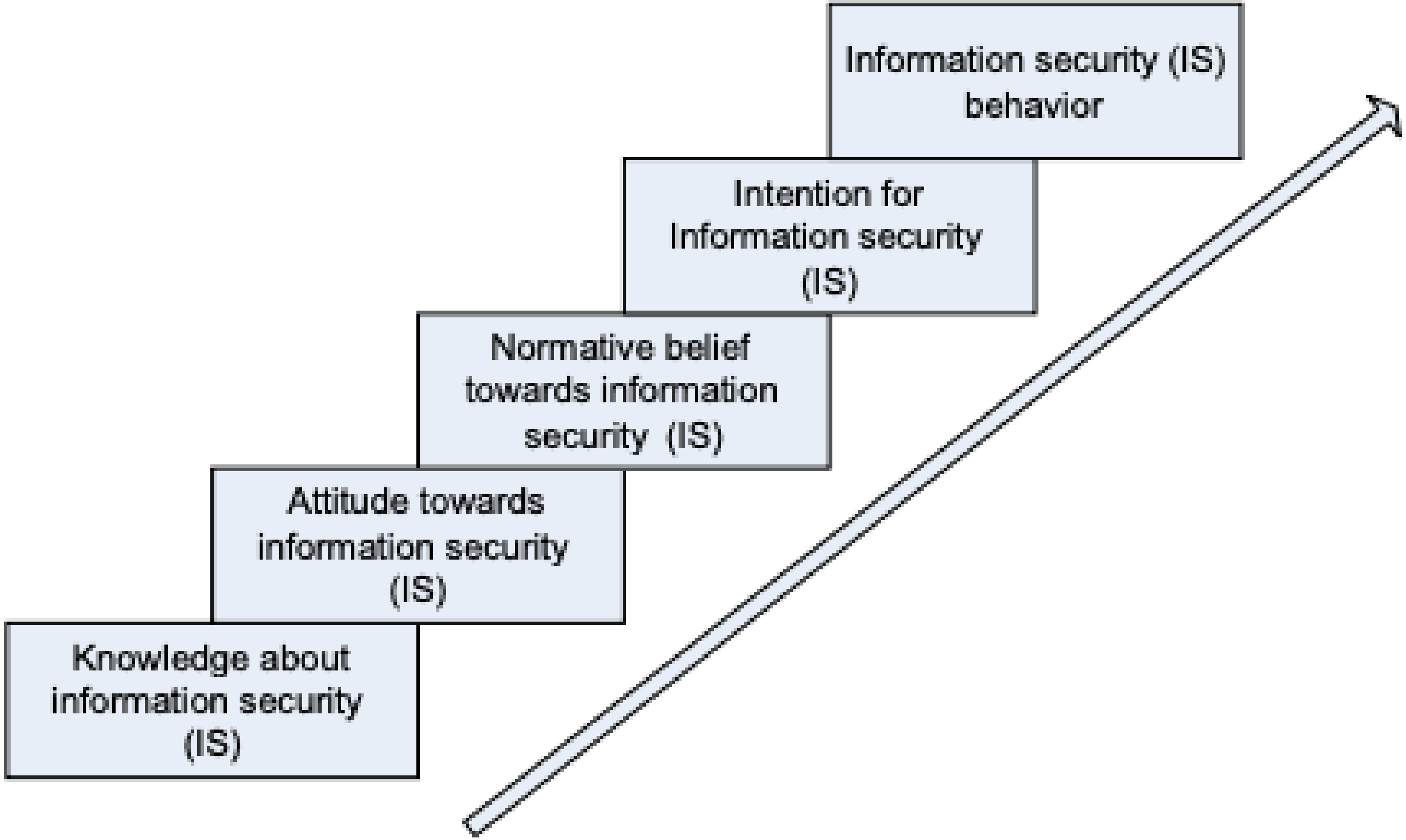
4

Create cyber-engaged communities

HOW TO MEASURE BEHAVIOR CHANGE?

Where possible campaigns could be distributed in small samples, controlling exposure to, and interaction with the materials to measure the direct effects of these campaigns on security behavior

- a combination of direct behavioral measures (e.g. number of people signing up for a training, or the percentage of people reporting a potential phishing email),
- intentions (e.g. questions on how an individual would act, if they find themselves in a potentially harmful situation),
- attitudes (e.g. attitudes towards the likelihood and severity of cyber threats such as ransomware) and
- awareness (e.g. reach of the campaign, whether people remember the message of the campaign materials) is needed.



Knowledge about information security (IS)

Attitude towards information security (IS)

Normative belief towards information security (IS)

Intention for Information security (IS)

Information security (IS) behavior

Figure 1. Five step ladder model for measuring information security awareness.

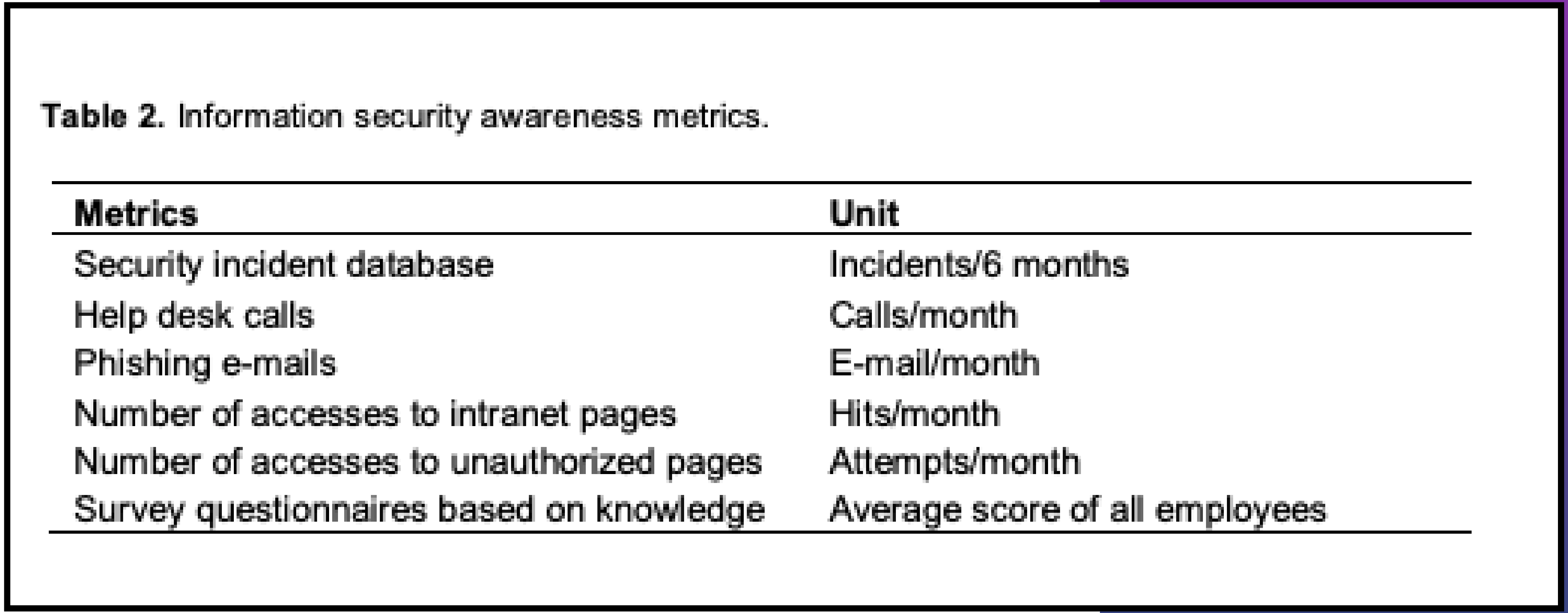
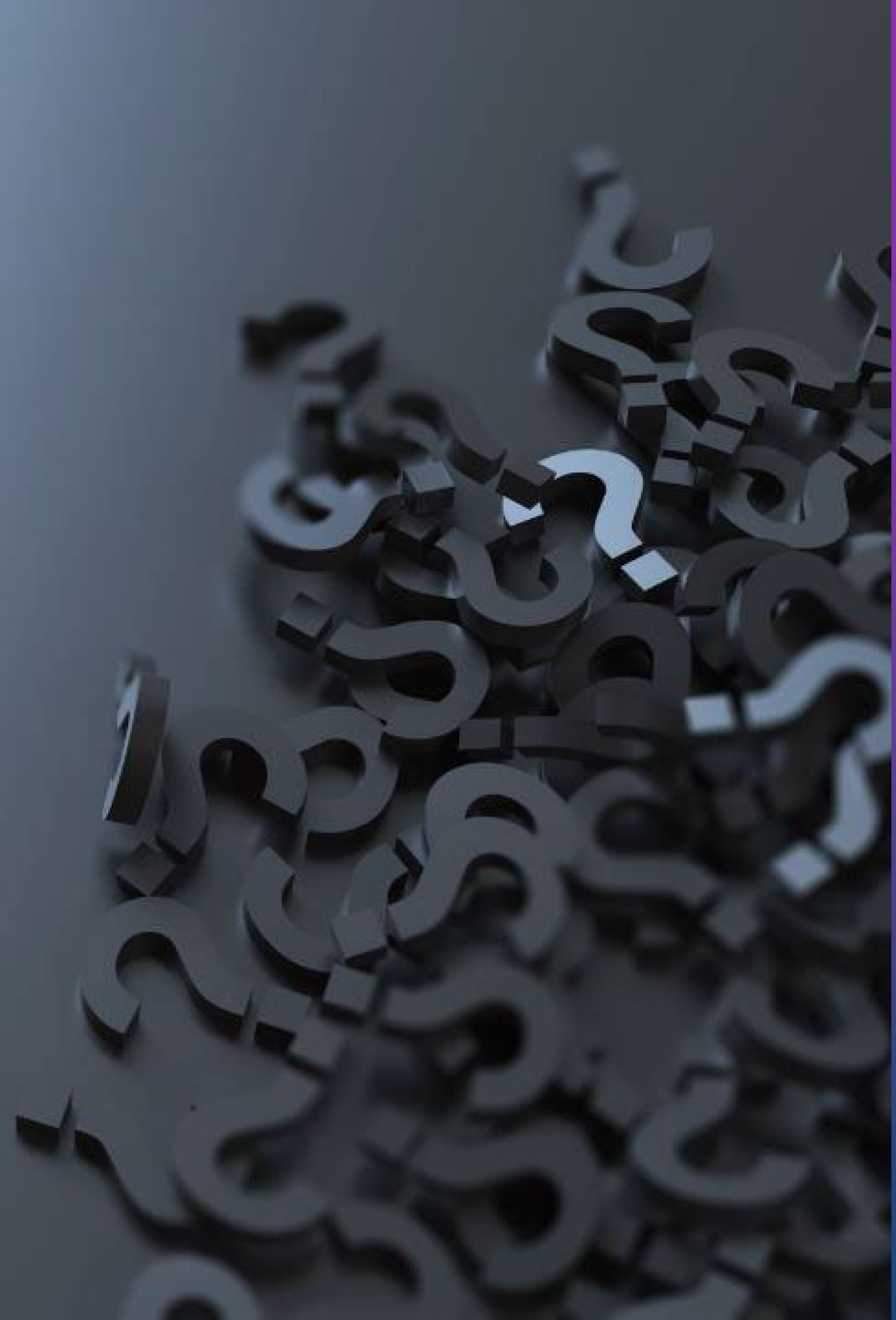


Table 2. Information security awareness metrics.

Metrics	Unit
Security incident database	Incidents/6 months
Help desk calls	Calls/month
Phishing e-mails	E-mail/month
Number of accesses to intranet pages	Hits/month
Number of accesses to unauthorized pages	Attempts/month
Survey questionnaires based on knowledge	Average score of all employees



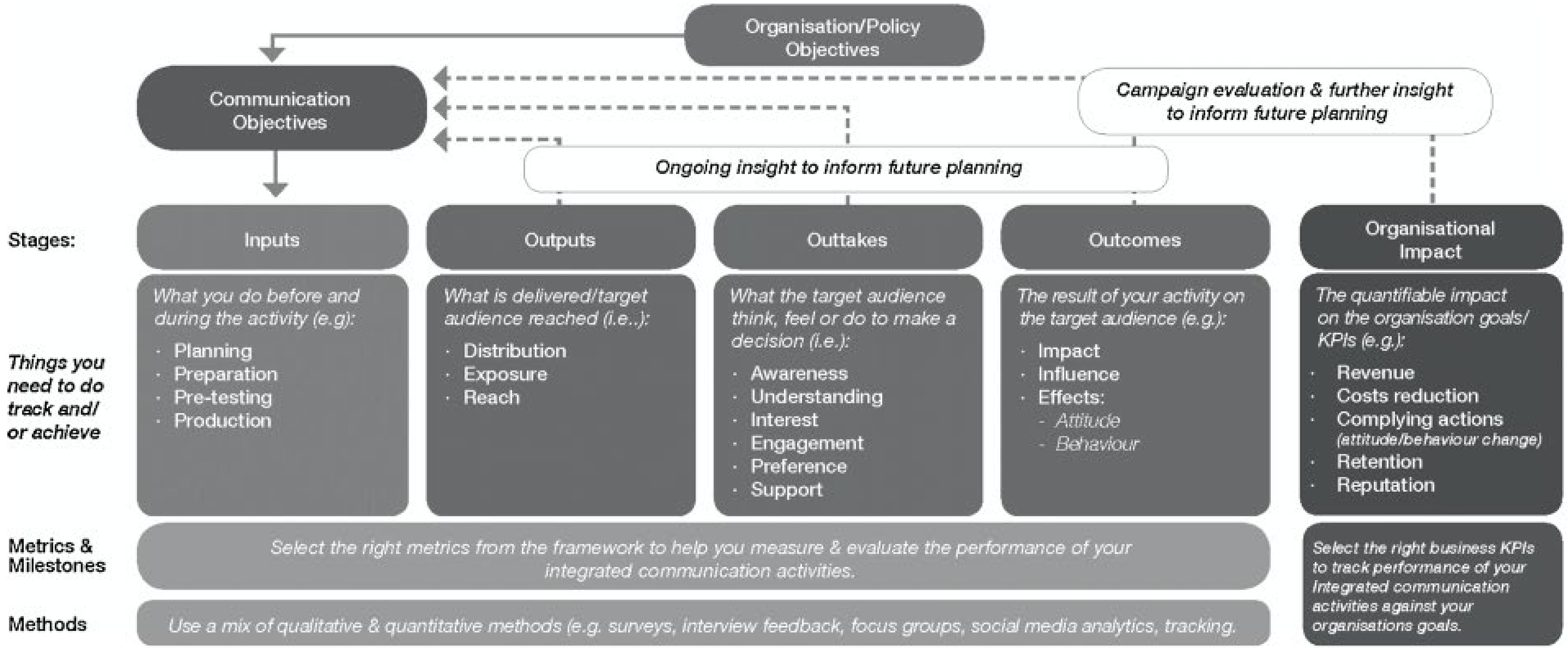
EXAMPLE QUESTIONS

The following are statements are designed to determine attitudes towards negative cyber security behaviors (measured on a scale of perceived seriousness)

1. unacceptable use of email
2. inappropriate use of computer resources
3. unauthorized access to information systems
4. unacceptable use of information system passwords
5. unacceptable use of information systems

The study will also measure employee attitudes towards cyber security expectations from employers using the following statements to be answered according to level of agreement:

My employer's expectations for cyber security are reasonable.
My employer expects me to spend a reasonable amount of time on cyber security.
My employer's expectation of my knowledge of cyber security is reasonable.
My employer's expectation for my level of responsibility for cyber security is reasonable. My employer expects a reasonable level of my attention for cyber security.



Organisation/Policy Objectives

Communication Objectives

Campaign evaluation & further insight to inform future planning

Ongoing insight to inform future planning

Stages:

Inputs

What you do before and during the activity (e.g):

- Planning
- Preparation
- Pre-testing
- Production

Outputs

What is delivered/target audience reached (i.e..):

- Distribution
- Exposure
- Reach

Outtakes

What the target audience think, feel or do to make a decision (i.e.):

- Awareness
- Understanding
- Interest
- Engagement
- Preference
- Support

Outcomes

The result of your activity on the target audience (e.g.):

- Impact
- Influence
- Effects:
  - *Attitude*
  - *Behaviour*

Organisational Impact

The quantifiable impact on the organisation goals/ KPIs (e.g.):

- Revenue
- Costs reduction
- Complying actions *(attitude/behaviour change)*
- Retention
- Reputation

Things you need to do track and/ or achieve

Metrics & Milestones

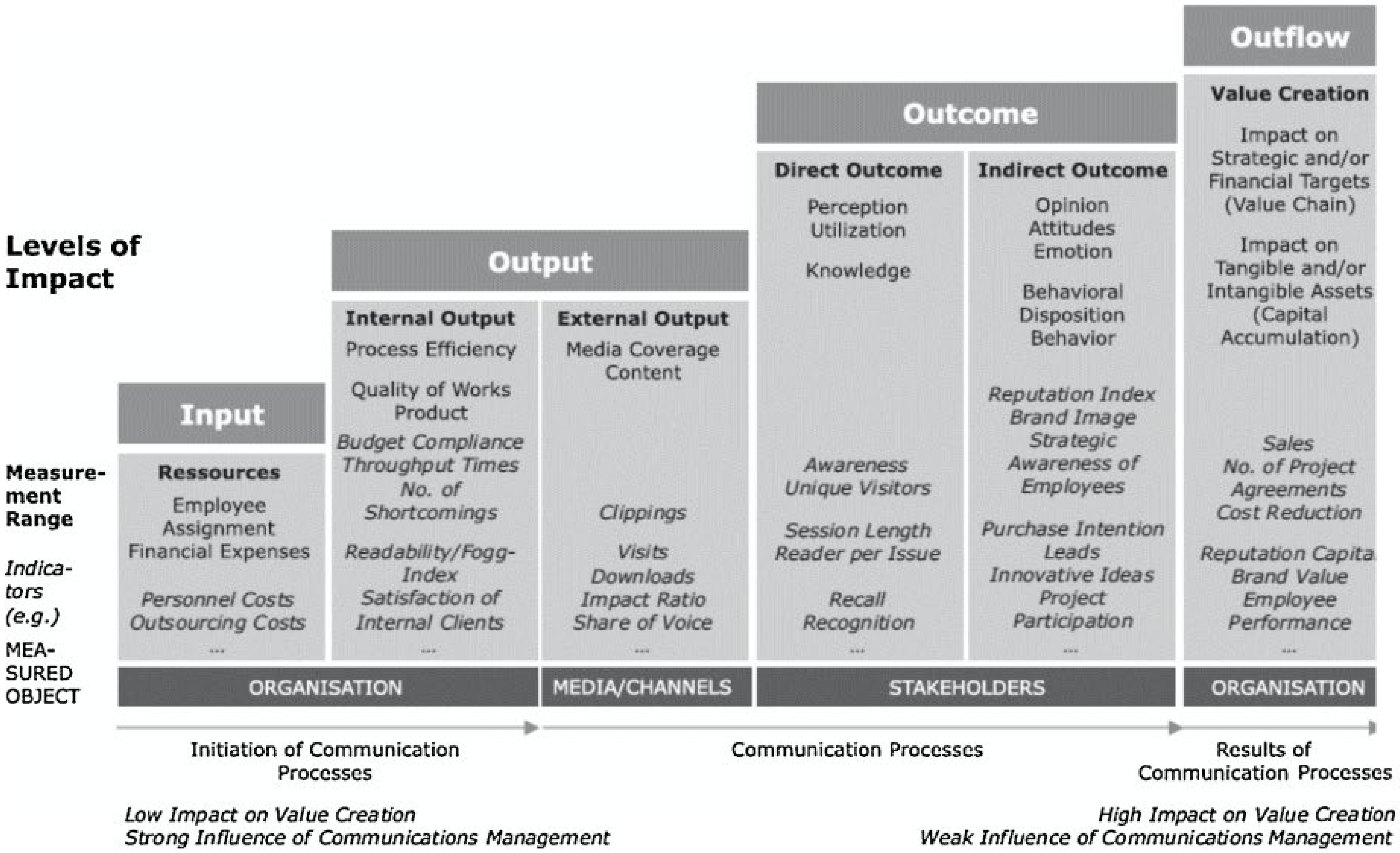
Select the right metrics from the framework to help you measure & evaluate the performance of your integrated communication activities.

Methods

Use a mix of qualitative & quantitative methods (e.g. surveys, interview feedback, focus groups, social media analytics, tracking.

Select the right business KPIs to track performance of your Integrated communication activities against your organisations goals.

Fig. 6. GCS Evaluation Framework (GCS, 2015, p. 4).



Levels of Impact

Measurement Range

Indicators (e.g.)

MEASURED OBJECT

Input

Ressources
Employee Assignment
Financial Expenses

Personnel Costs
Outsourcing Costs
...

Output

Internal Output
Process Efficiency

Quality of Works Product

Budget Compliance
Throughput Times
No. of Shortcomings

Readability/Fogg-Index
Satisfaction of Internal Clients
...

External Output
Media Coverage
Content

Clippings

Visits
Downloads
Impact Ratio
Share of Voice
...

Outcome

Direct Outcome
Perception
Utilization

Knowledge

Awareness
Unique Visitors

Session Length
Reader per Issue

Recall
Recognition
...

Indirect Outcome
Opinion
Attitudes
Emotion

Behavioral
Disposition
Behavior

Reputation Index
Brand Image
Strategic Awareness of Employees

Purchase Intention
Leads
Innovative Ideas
Project Participation
...

Outflow

Value Creation
Impact on Strategic and/or Financial Targets (Value Chain)

Impact on Tangible and/or Intangible Assets (Capital Accumulation)

Sales
No. of Project Agreements
Cost Reduction

Reputation Capital
Brand Value
Employee Performance
...

ORGANISATION | MEDIA/CHANNELS | STAKEHOLDERS | ORGANISATION

Initiation of Communication Processes

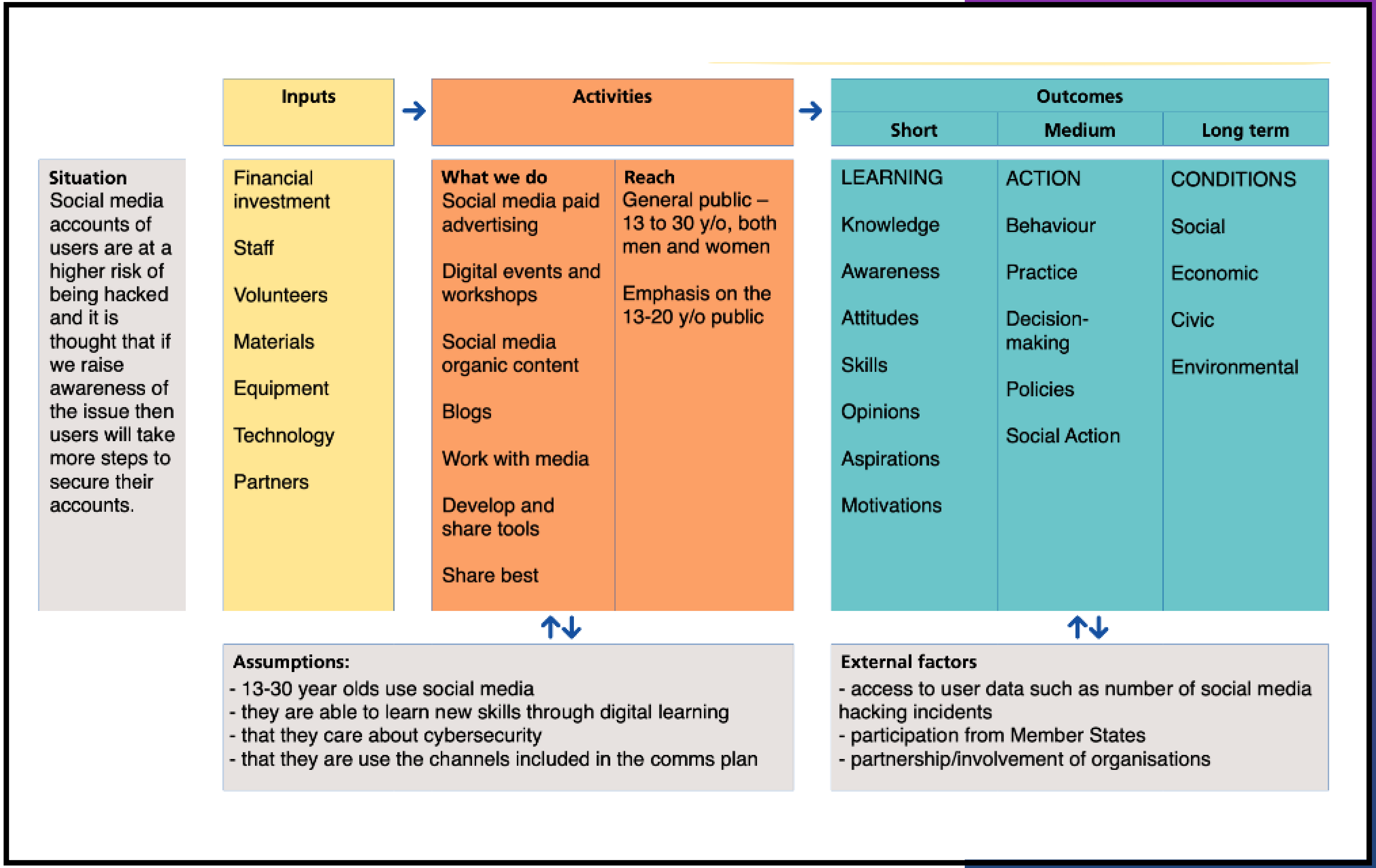
Communication Processes

Results of Communication Processes

Low Impact on Value Creation
Strong Influence of Communications Management

High Impact on Value Creation
Weak Influence of Communications Management

Fig. 5. The DPRG/ICV Framework (DPRG & ICV, 2011b, p.13).



Situation	Inputs	Activities		Outcomes		
		What we do	Reach	Short	Medium	Long term
Social media accounts of users are at a higher risk of being hacked and it is thought that if we raise awareness of the issue then users will take more steps to secure their accounts.	Financial investment Staff Volunteers Materials Equipment Technology Partners	Social media paid advertising Digital events and workshops Social media organic content Blogs Work with media Develop and share tools Share best	General public – 13 to 30 y/o, both men and women Emphasis on the 13-20 y/o public	LEARNING Knowledge Awareness Attitudes Skills Opinions Aspirations Motivations	ACTION Behaviour Practice Decision-making Policies Social Action	CONDITIONS Social Economic Civic Environmental

Assumptions:

- 13-30 year olds use social media
- they are able to learn new skills through digital learning
- that they care about cybersecurity
- that they are use the channels included in the comms plan

External factors

- access to user data such as number of social media hacking incidents
- participation from Member States
- partnership/involvement of organisations

CYBERSECURITY AWARENESS CAMPAIGN:

A Psychological Perspective

Involving and inspiring people beyond awareness

An effective cybersecurity awareness campaign can awaken fresh new habits that are conducive to protecting people and organizations. However, most campaigns focus solely on providing information rather than encouraging people to get involved or inspiring them to embrace change.

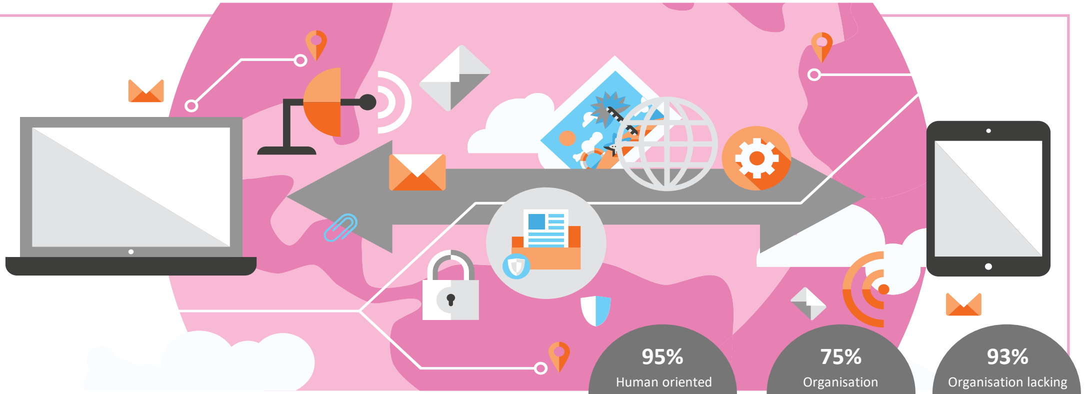
Behavior change stems from people's perceptions and attitudes, so individuals must be motivated to take action. Rather than assume people are interested in cybersecurity and motivated to improve security practices, campaigns should spawn from genuine reality, promoting long-term change.

Enter the Cybersecurity Awareness Campaign Process Model - developed to help organizations produce more effective campaigns by following step-by-step guidelines.

ANIMA

Key attributes of effective cybersecurity awareness campaigns

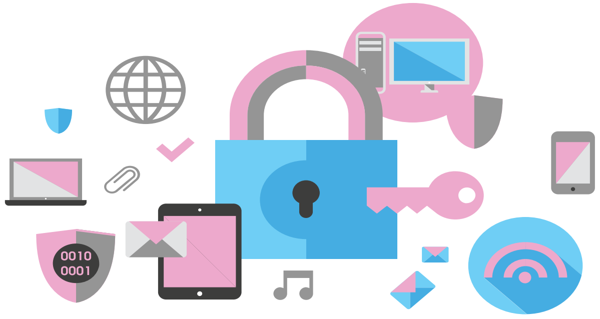
- **Disseminating knowledge** – Campaigns should help people become aware of cybersecurity by providing information and guidance.
- **Understanding motivation** – Campaigns need to be underpinned by psychological factors that motivate people to act in a more security-conscious way.
- **Engaging people in behaviour** – Campaigns should encourage people to engage in behaviour change.
- **Evaluating behaviour change** – Behaviour change resulting from the campaign should be evaluated for further development of policies and procedures.
- **Planning for the future** – By discovering exactly what motivates people to change their behaviour, future campaigns can be developed based on these factors.



95% Human oriented cybersecurity breaches

75% Organisation experienced phishing attacks

93% Organisation lacking a good security culture



Cybersecurity Awareness Campaign Process Model

Impact Evaluation Awareness • • • Proximal Impact I: Engagement • • • Proximal Impact II: Priming Steps • • • Distal Impact: Trialing Behaviour • • • Outcome Evaluation

Process for introducing a cybersecurity culture

Unaware	Informed	Motivated	Active	Cyber Hygienic	Cyber Ambassadors
Poorly trained or no guidance received for proper cybersecurity behaviours. This leads to a lack of awareness of cybersecurity. Organisations should design and develop effective cybersecurity awareness training and guidance for providing information and knowledge.	Trained but there is an obstacle to motivation (e.g. lack of commitment and trust in organisation) To progress, organisations should identify obstacles to motivation (e.g. commitment and trust in the organisation) and engage in discourse and collaboratively find a solution.	Good intention and motivation exists but there is an obstacle to action (e.g. cybersecurity expectations are too unreasonable and take too much time) At this stage, organisations need to identify obstacles to action (e.g. unreasonable cybersecurity expectations) and apply the appropriate intervention.	Short-term behaviours in action – initially cyber-hygienic but over time they regress to their previous state (e.g. training is forgotten and security is not a priority) To progress, there should be regular reviews of individual training, rather than simply increasing training in general across the organisation.	While they have developed good cyber hygiene and long-term cybersecurity habits, they fail to educate and influence peers to adopt cyber hygiene (e.g. a tendency to work in silos, a lack of team spirit) To move on to the final stage, organisations should identify any issues among colleagues and encourage team working through project-based work and social engagement.	Initiators of culture change to create societal norms of cybersecurity. Once organisations reach this final stage, people will become initiators of culture change and create societal norms, resulting in a conducive cyber culture.

CYBERSECURITY AWARENESS CAMPAIGN MATRIX

This matrix details the sequence of steps from obtaining campaign information to changing behaviour, and explains the objectives of each step and how to evaluate its success.

Steps	Impact Evaluation Awareness	Proximal Impact I: Engagement	Proximal Impact II: Priming Steps	Distal Impact: Trialing Behaviour	Outcome Evaluation
Description	***Seen the campaign and perception of the campaign***	***Showing interest in the campaign or message by taking an action***	***Priming steps of behavioural change***	***Initial trialing behaviour and antecedents of behaviours***	***Desired behavioural change***
Objectives	• Disseminating information and knowledge • Increasing psychological factors motivating participants to perform security behaviour • Self-efficacy • Perceived severity/ vulnerability • Response costs/efficacy	• Turning motivation into cybersecurity engagement • Encouraging people to pay attention to cybersecurity threats and issues	• Enhancing knowledge of cybersecurity • Increasing attitudes and intentions for cybersecurity behaviour • Building a cybersecurity culture	• Encouraging people to actively seek out more cybersecurity information	• Assessing actual cybersecurity behaviour • Evaluating behavioural change for future planning
Evaluation Indicators	• Emotional reaction to the campaign • Pre- and post-campaign questionnaires on cybersecurity awareness and practices • Campaign effectiveness > Hits to the campaign > Calls to the information line > Campaign feedback • Measurement of increase in psychological factors	• Digital engagement • Content analysis - cybersecurity related words • Information seeking behaviour > Campaign website visits > Corporate security police visits > Security blog visits on the intranet • Email views - Cybersecurity news and announcements	• Knowledge (Assessment/ Quiz) • Measurement of increase in psychological factors of priming steps • Attitudes/ Intentions towards cybersecurity behaviours • Normative beliefs - Security culture	• Awareness/ Security days (attendees' reactions to attend noncompulsory security events) • Additional inquiries for cybersecurity related questions • Symptom recall/ recognition (reporting symptoms that may have been infected by malicious activity)	• Simulation of phishing attempts • Audit/ Risk department reports • Security incidents • Personal activities when using corporate network • Social discourse (Conversation with colleagues about cybersecurity)

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THANK YOU

Q&A

Are There Any Questions?

Closing Remarks

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We look forward to receiving your feedback via the post-event survey!

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