

# How to develop secure human behaviour?

## Closing the gap between knowing and doing

11:30 uur - Amsterdam '72



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# About BeOne Development



Founded in  
1999 as  
InfoSecure



Information Security  
&  
Privacy



Creating a  
positive security  
culture

# An introduction



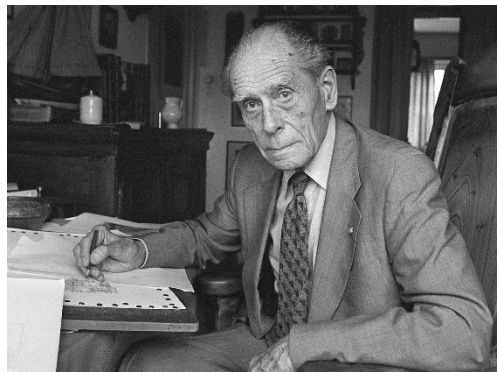
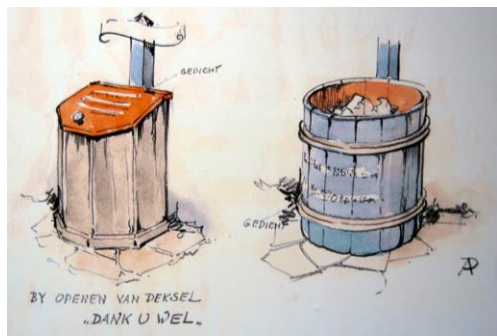
















Holle Bolle Gijs eats 460.000 kilos of paper a year.  
Holle Bolle Gijs has eaten a total of more than 25 million kilos of paper.



# Technology, organisation and ..... humans

## Almost 90% of Cyber Attacks are Caused by Human Error or Behavior

By Ross Kelly - March 3, 2017



Few store managers would respond to revelations that a junior assistant had been stealing from the cash register by investing thousands of dollars in new security cameras. It could be far cheaper for them to instill hiring practices that vet employees and keep the bad ones out.

But all too often CEOs confronted with

cyber attacks tend to do the opposite: they fret about possible weaknesses in their technology defenses, rather than taking a hard look at the people in their organization.



The human factor is hot ...



A photograph of a park bench in autumn. The bench is made of dark metal frames and light-colored wooden slats. It is covered with fallen yellow and orange leaves. The ground around the bench is also covered in a thick layer of fallen leaves. In the background, there are trees with autumn foliage and a path leading into the distance. The overall scene is warm and serene.

# .... but often ineffective

Research from **Information Security Forum (ISF)**, International top 500 companies  
[www.securityforum.org/research/from-promoting-awareness-to-embedding-behaviours/](http://www.securityforum.org/research/from-promoting-awareness-to-embedding-behaviours/)



- ☐ Insufficient management commitment
- ☐ Not the right skills
- ☐ Approach not risk driven
- ☐ Ad hoc approach
- ☐ Only a tick in a box
- ☐ Approach based on FUD
- ☐ Effectivity is not measured
- ☐ Change is not secured



# Security Awareness in the past



# Why we know, but don't do



Source: Tali Sharot, 'The optimism bias'

# Security awareness is a process



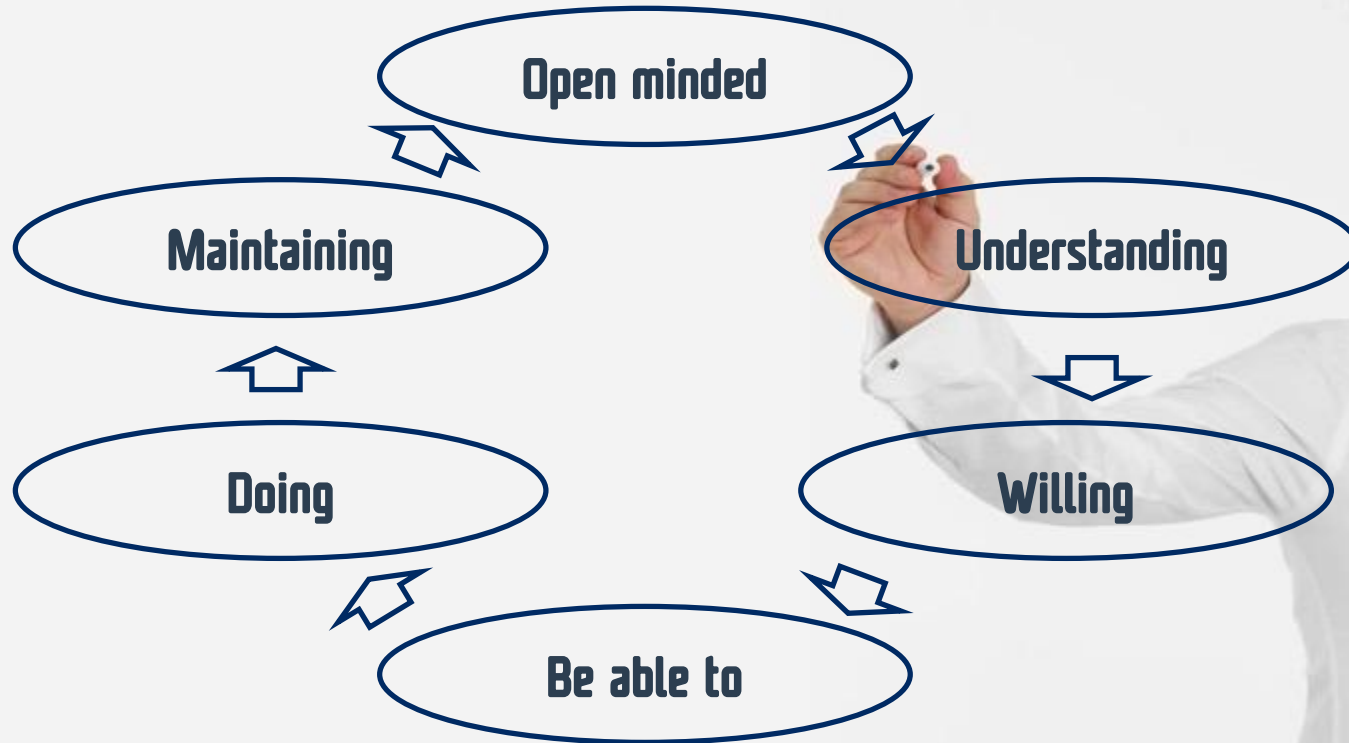
- ✓ **Involve management**
- ✓ **Organise the right project team**
- ✓ **On-boarding for new employees**
- ✓ **Information security fundamentals**



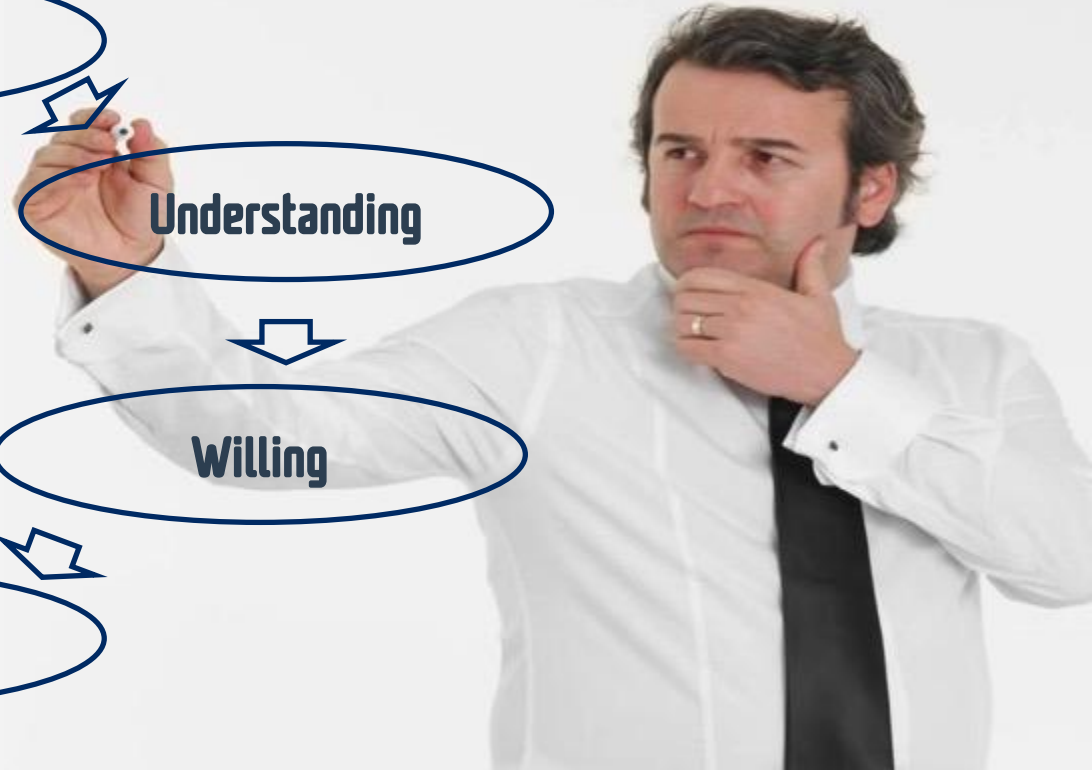


Is broadcasting knowledge sufficient?

# Behavioural change



Source: M.F.K. Balm, 'Behavioural change model'



A close-up photograph of a white ceramic cup filled with dark coffee. The cup is surrounded by a thick, grey, knitted blanket. The lighting is soft and warm, creating a cozy atmosphere. The text "Confrontation by testing" is overlaid at the bottom in a white, sans-serif font.

Confrontation by testing



**Moving with pleasure  
and  
freezing with fear**

A woman with dark, curly hair is wearing a VR headset and smiling broadly, looking upwards. She is wearing a light pink blazer over a teal top. The background is a clear blue sky.

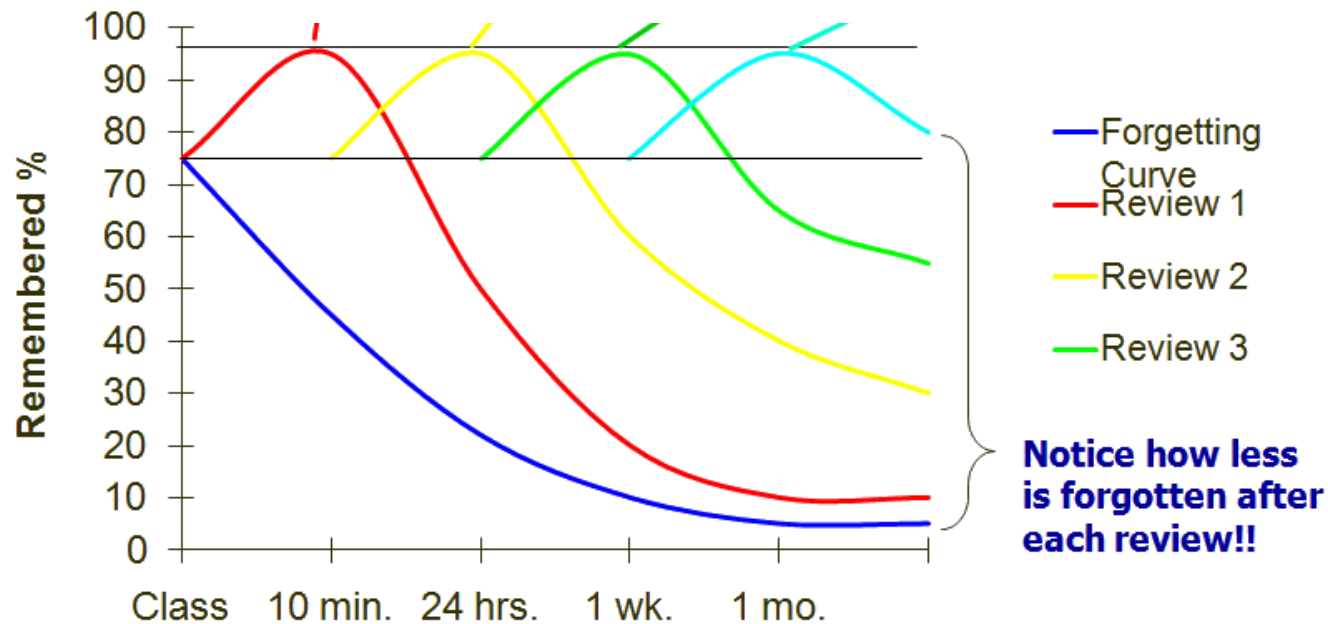
Start with making an  
emotional connection

Port of  
Amsterdam





# Ebbinghaus forgetting curve



# Learning pyramid & retentie



Using a blend of approaches results in a substantial increase in knowledge retention



# Is warning sufficient?



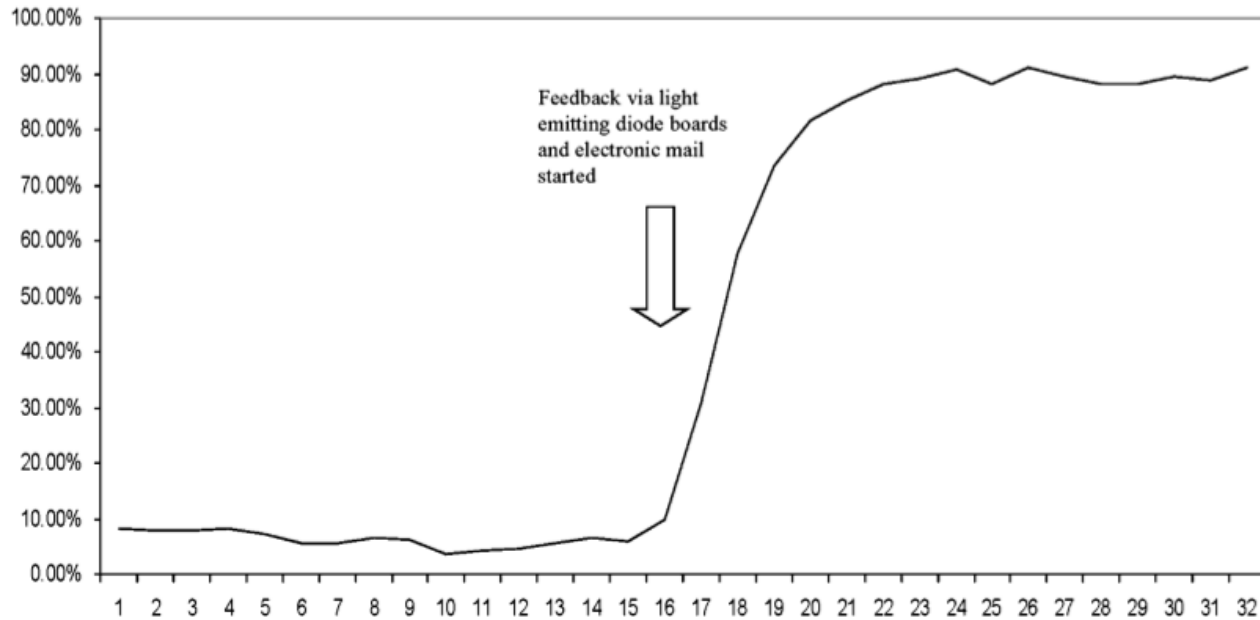




Add confrontation and immediate feedback



# From knowing to doing



**Figure 3.** Hand hygiene compliance by week during impact period following feedback.

Source: Donna Armellino, "Using High-Technology to Enforce Low-Technology Safety Measures"



# Normative beliefs

Please reuse your towels to save money 15%

Help save the environment.

You can show your respect for nature and help save the environment 30%  
by reusing your towels during your stay

75% of the hotel guests reused the towels 45%

75% of the guests who also stayed in this room reused the towels 50%





# Normative beliefs

9 out of 10 people in Britain paid their tax on time +5%

9 out of 10 people in your town paid their tax on time +12%

9 out of 10 people in your town paid their tax on time +16%  
and you are one of the few people who have not paid yet

# PDCA approach: immediate feedback with awareness dashboard



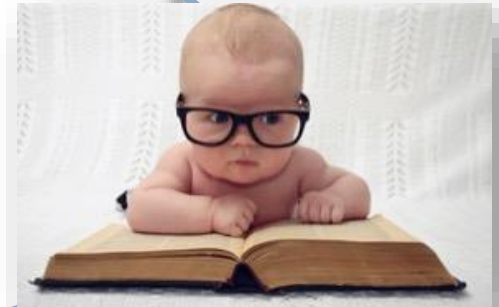
**Monitor**



**Simulate & test**



**Report compliance and offer feedback**



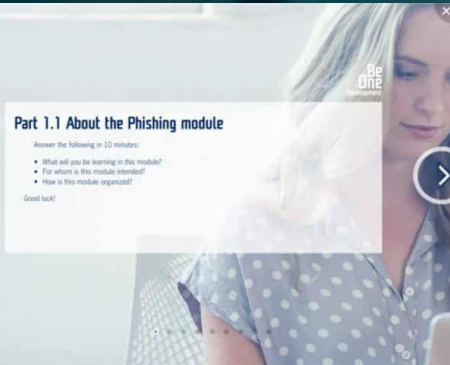
**Knowledge & skills**



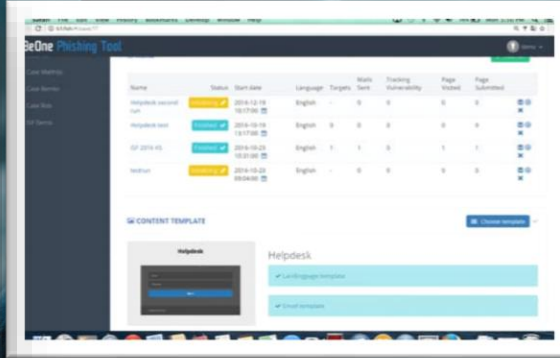
# Use a risk based approach



# Theme: phishing



Knowledge



Test



Skills



Feedback



Repeat



# Theme: strong passwords

Microlearning

## Use of passwords

In a few minutes, you will have the answer to the following questions:



- How do you make a strong password?
- What is a simple way to remember your passwords?
- What are the risks of having a weak password?

## Crack the Password

e \_ \_ \_ a \_ \_ e \_ \_ m \_ \_ e \_ \_

Enter a letter.

Enter a letter

Guess a letter

## One Minute Security Flash Strong Passwords





# Theme: social engineering



# Theme: USB sticks





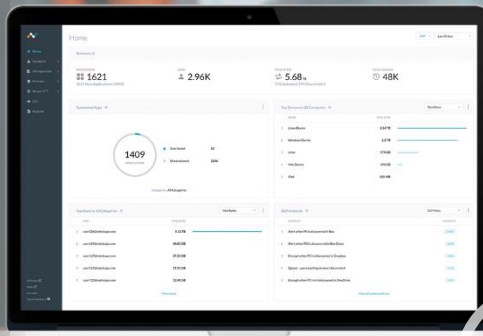
# Theme: cloud services

## Working in the cloud

Welcome to the training Working in the cloud!

In this training you will learn about the pros and cons of different cloud services.

At the end of this training, you will know how to work safely in the cloud.



## Social media & Working in the cloud

In this security flash you will learn:

- what types of information are safe to share via social media;
- what risks are involved in the sharing of information via a cloud service;
- how you can prevent these risks.

This security flash consists of a video and 3 questions. You will need to answer 2 of the 3 questions correctly in order to pass.

Good luck!

### Engagement Score



### Response Rate



### Engagement Score - Teams



### Engagement Score - Month



### Engagement Dimensions - All Teams



### Engagement Score - Levels



### Net Promoter Score



## Social media & working in the cloud

Who can see this information via social media?  
How do you prevent your 'data' from being leaked?



Who can see this information via social media?  
How do you prevent your 'data' from being leaked?



# Develop a continuous multi channel communication program



Strong Passwords



The New Way of Working



Use of Passwords



Work Securely Outside the Office



Working in Public Places



Working in the Cloud



Test & confrontation

Inform, knowledge & skills

Report compliance

# Take aways to create a positive security culture



1. Develop a long term communication program
2. Measure behaviour & confrontation
3. Train knowledge & skills continuously
4. Give direct feedback & show behavioural compliance





Questions?



# Contact Information



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