Engineering encryption for privacy in practice:

Experiences on the ground: opportunities and pitfalls

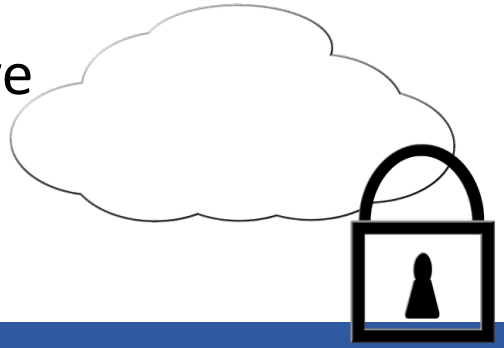
IPEN Webinar 2020

Is Encryption the solution to data protection?

“Teamwork” is the real solution!

What goes often wrong? 1/2

- Backups are forgotten
- Poor Access Control / SSO / MFA
- Unclear on/off boarding process
- Insufficient vendor assessment process
- Cloud encryption
- Lack of compliance perspective
- Insufficient awareness



What goes often wrong? 2/2

- Poor key management: back ups, restoring process
- Lack of monitoring: algorithms, key size, protocols
    - Legacy systems: may be incompatible with features surrounding access, or encryption methods. UPDATE!
    - Legacy protocols: when to stop supporting them (access logs in traffic can be important!: protocol version, cyphers, IP, user agent…)

But all these bad practices can actually also help you to achieve complete encryption of all your systems!

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Encryption deserves more attention!
(SSL/TLS is not enough!)

Ideal Situation:

Encryption program or policy part of the Enterprise Risk Management and Data Governance

Recommendations and opportunities 1/8

art.30 GDPR

Find what data you have!

Recommendations and opportunities 2/8

Data Classification

Risk-based approach

DLP*

Data discovery

*Data Loss Prevention

Recommendations and opportunities 3/8

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Where is my data?

- Asset management
- Infrastructure overview
- Third party/ SaaS

Recommendations and opportunities 4/8

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Data Lifecycle

Data must be protected throughout its lifecycle.
It is important to consider the state of the data you are trying to protect:

- **Data in motion:** being transmitted over a network
- **Data at rest:** in your storage or on devices
- **Data in use:** in the process of being generated, updated, erased, or viewed.

Recommendations and opportunities 5/8

Access Control

- How do you identify, authenticate and authorise your users / employees?
- Roles and responsibilities
- Awareness

Recommendations and opportunities 6/8

What do we need to encrypt and how?

Risk-based approach

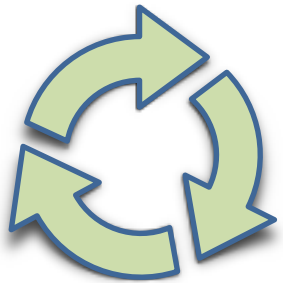
- How do we encrypt the data? check compliance!
- Select a method / tool - data life cycle
- User friendly approach / costs
- Implement key management process/tool

Recommendations and opportunities 7/8

Retention!

Data life cycle - retention

Establishing a retention period can help
when selecting the right encryption algorithm



Recommendations and opportunities 8/8

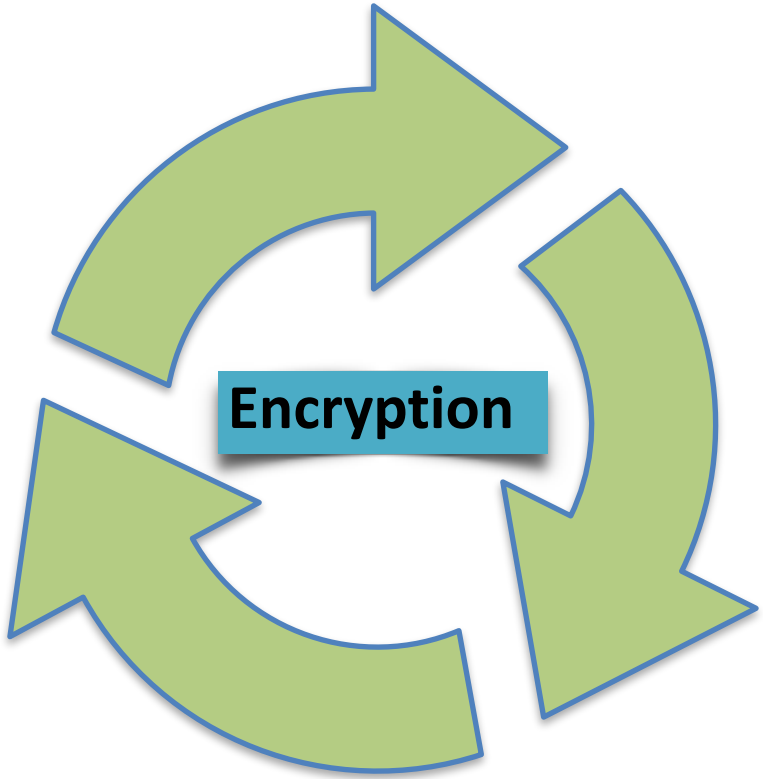
Awareness

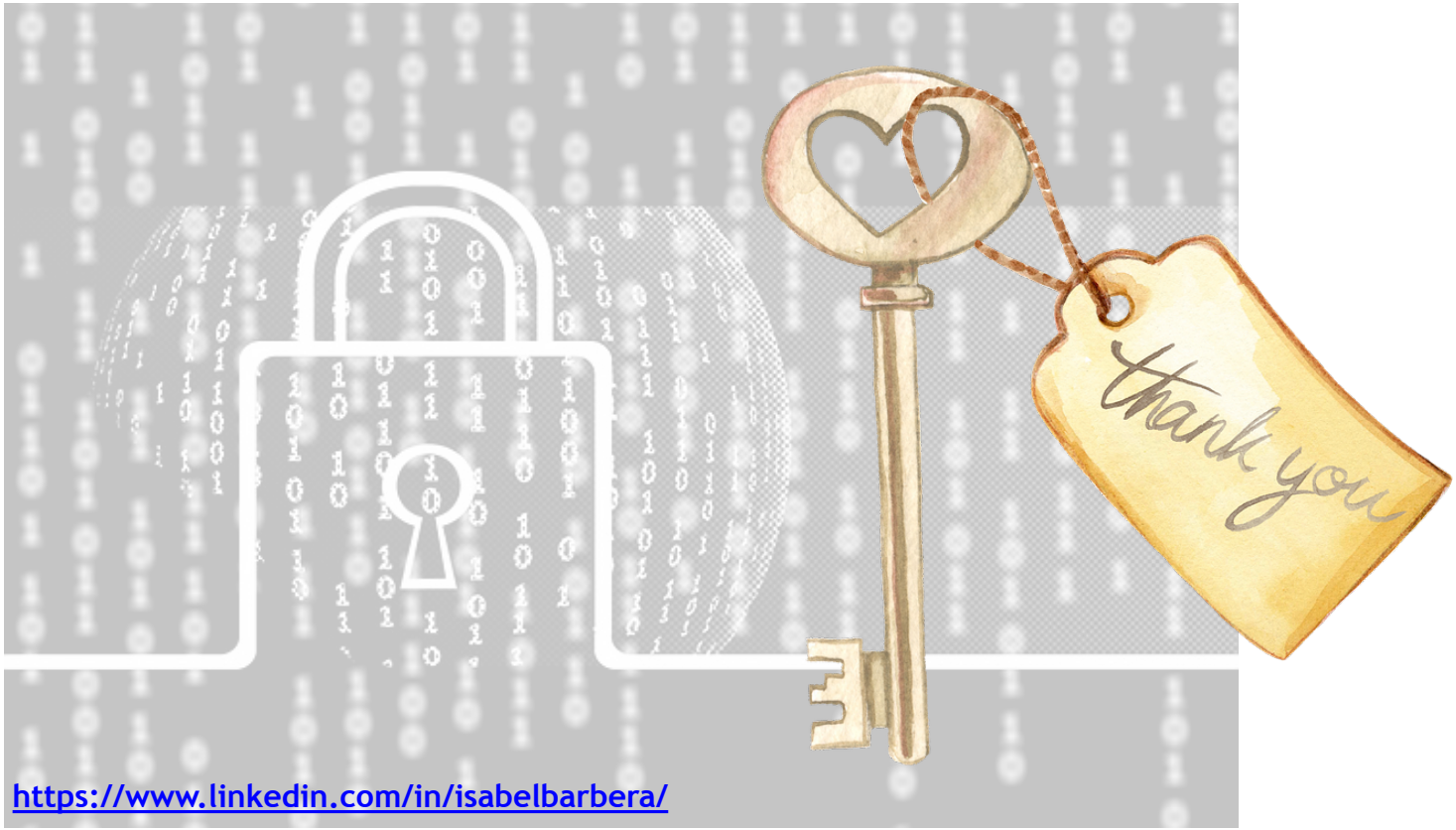
Awareness Policy

Establish clear rules/processes and
train your employees in data protection!

- How to protect and share data and keys
- Acces Control rules & responsibilities

Conclusion





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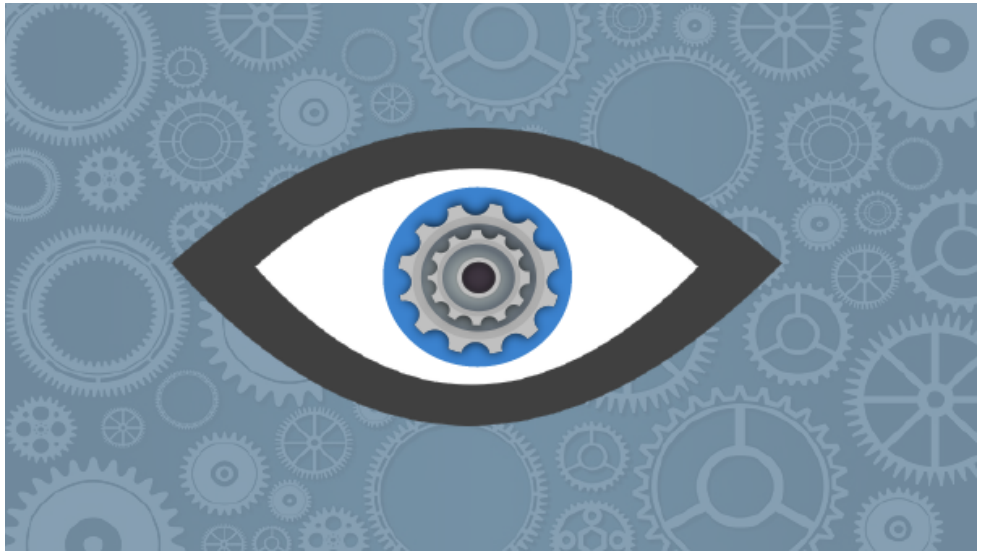

Privacy Engineering Netherlands

Meetup Group