Unlocking Digital Identities

The journey and path to a digital society

Joseph Carson
Chief Security Scientist & Advisory CISO

BLOCKCHAIN
TECHNOLOGY

Blockchain will not solve all your cybersecurity problems

Cryptocurrency

3 JAN 2009

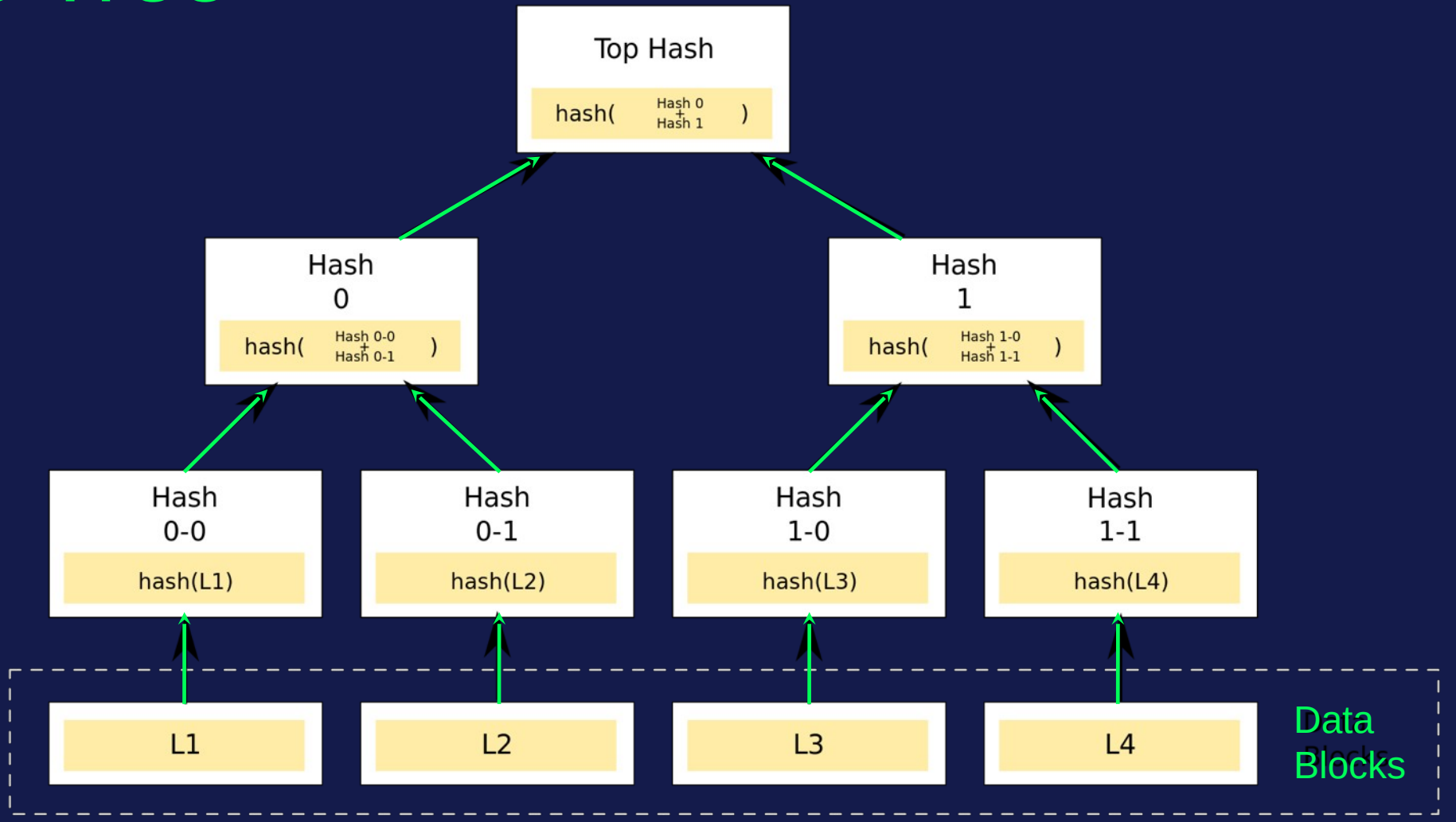
Satoshi Nakamoto

Blockchain

1979

©delinea

Merkle Tree



©delinea

HOLY
BIBLE

TALLINN, ESTONIA

E S T O N I A

Capital
Tallinn

Area Total
45,339 km2

2016 Population estimate
1,315,944 (151th)

Ethnic groups (2016)
68.8% Estonian
25.1% Russians
1.8% Ukrainians

Independence
- Independence declared - 24 February 1918
- Soviet and German occupations - 1940–1991
- Independence restored - 20 August 1991

Source:
https://en.wikipedia.org/wiki/Estonia

AUGUST 20, 1991

PAPERLESS

1998

BLOCKCHAIN

TECHNOLOGY

MARCH 11, 1999

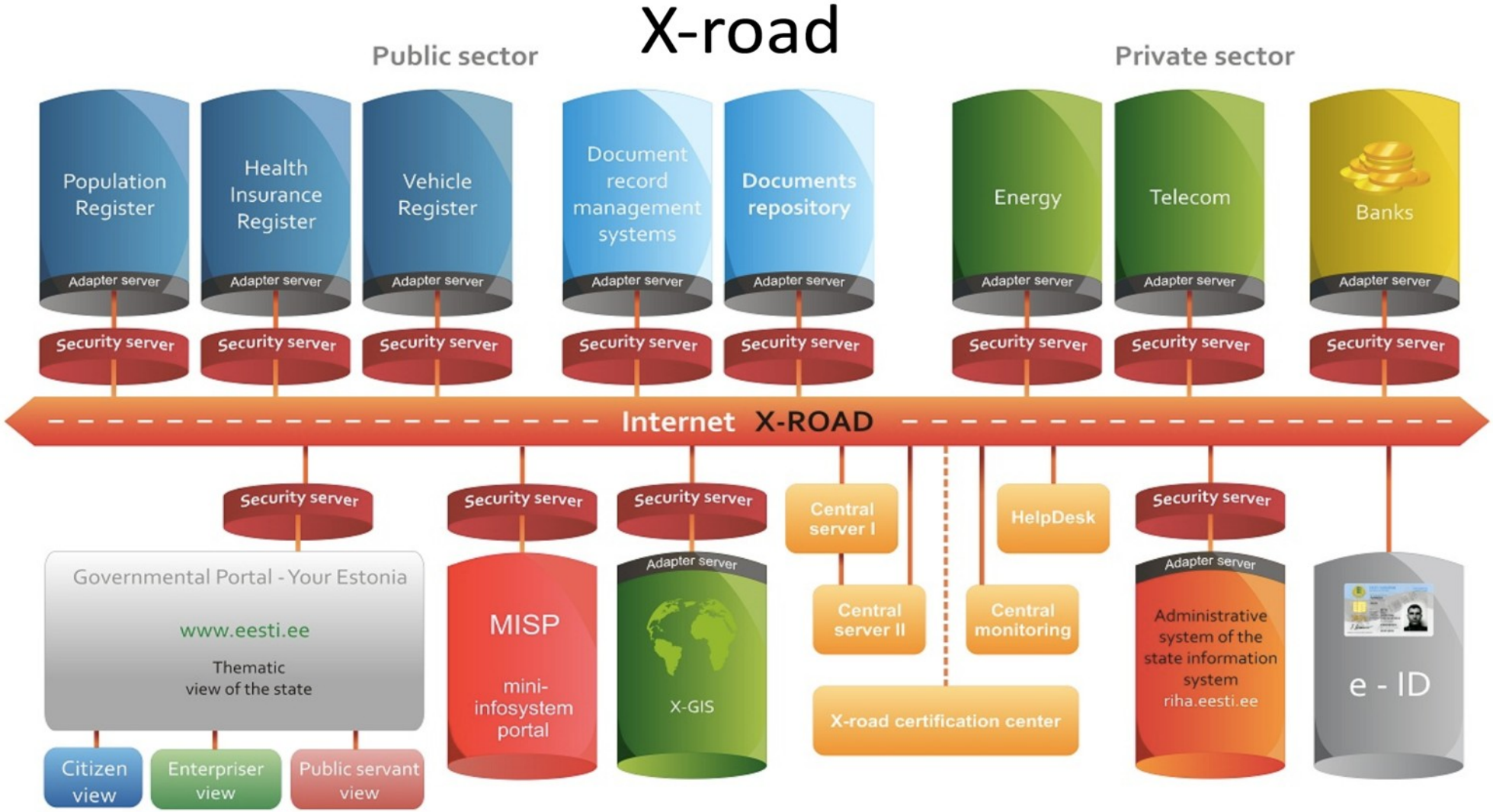
Estonian ID Card Introduced

MARCH 2000

DIGITAL
Signature

DIGITAL SOCIETY

X-road


Public sector
Private sector
Population Register
Health Insurance Register
Vehicle Register
Document record management systems
Documents repository
Energy
Telecom
Banks
Adapter server
Security server
Internet X-ROAD
Governmental Portal - Your Estonia
www.eesti.ee
Thematic view of the state
Citizen view
Enterpriser view
Public servant view
MISP
mini-infosystem portal
X-GIS
Central server I
Central server II
Central monitoring
HelpDesk
X-road certification center
Administrative system of the state information system
riha.eesti.ee
e - ID

MARCH 29 2004 - NATO

MAY 1 2004 - EU

2005

1st country to use Internet Voting

©delinea

APRIL 27 2007

Decision to move a
Bronze Statue
Photo: Piret Carson

VIOLENCE ERUPTED

CYBER WAR

The main websites targeted:

The Estonian presidency and its parliament

Almost all of the country's government ministries

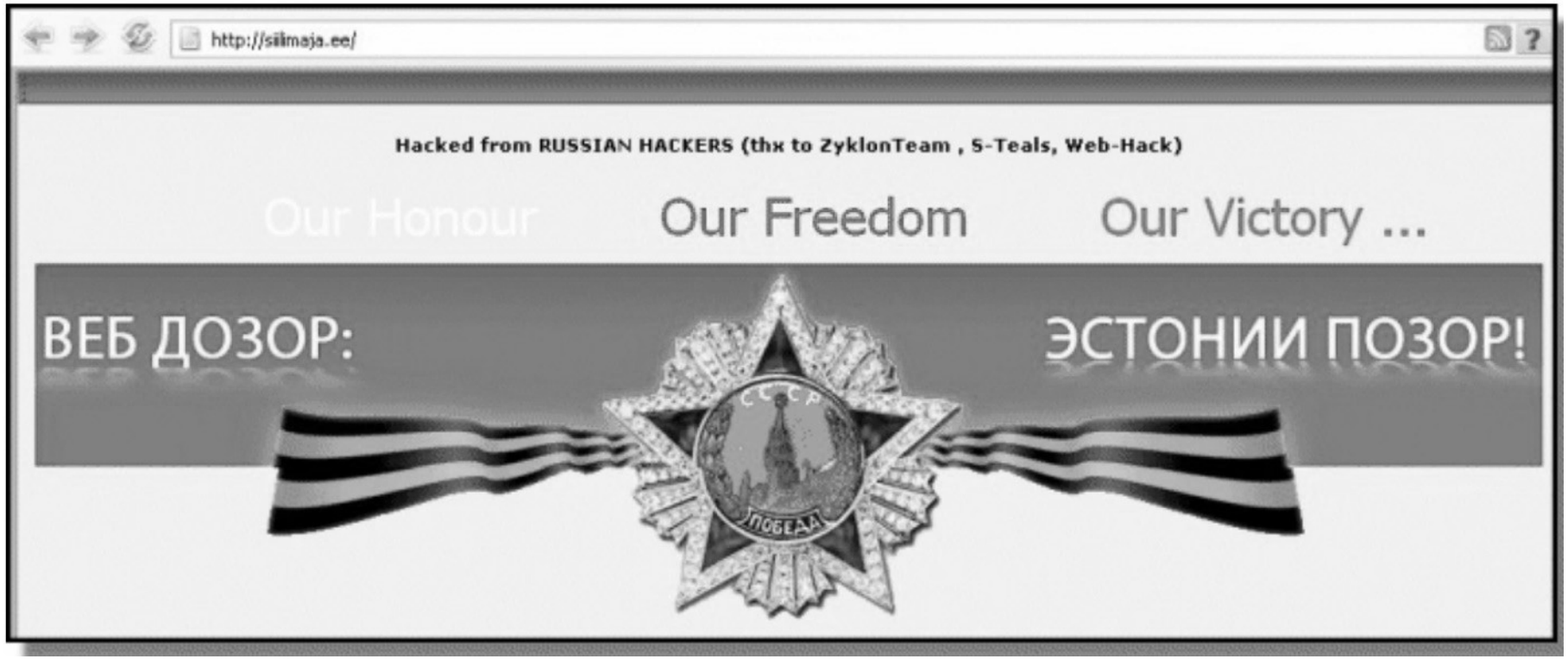
Political parties

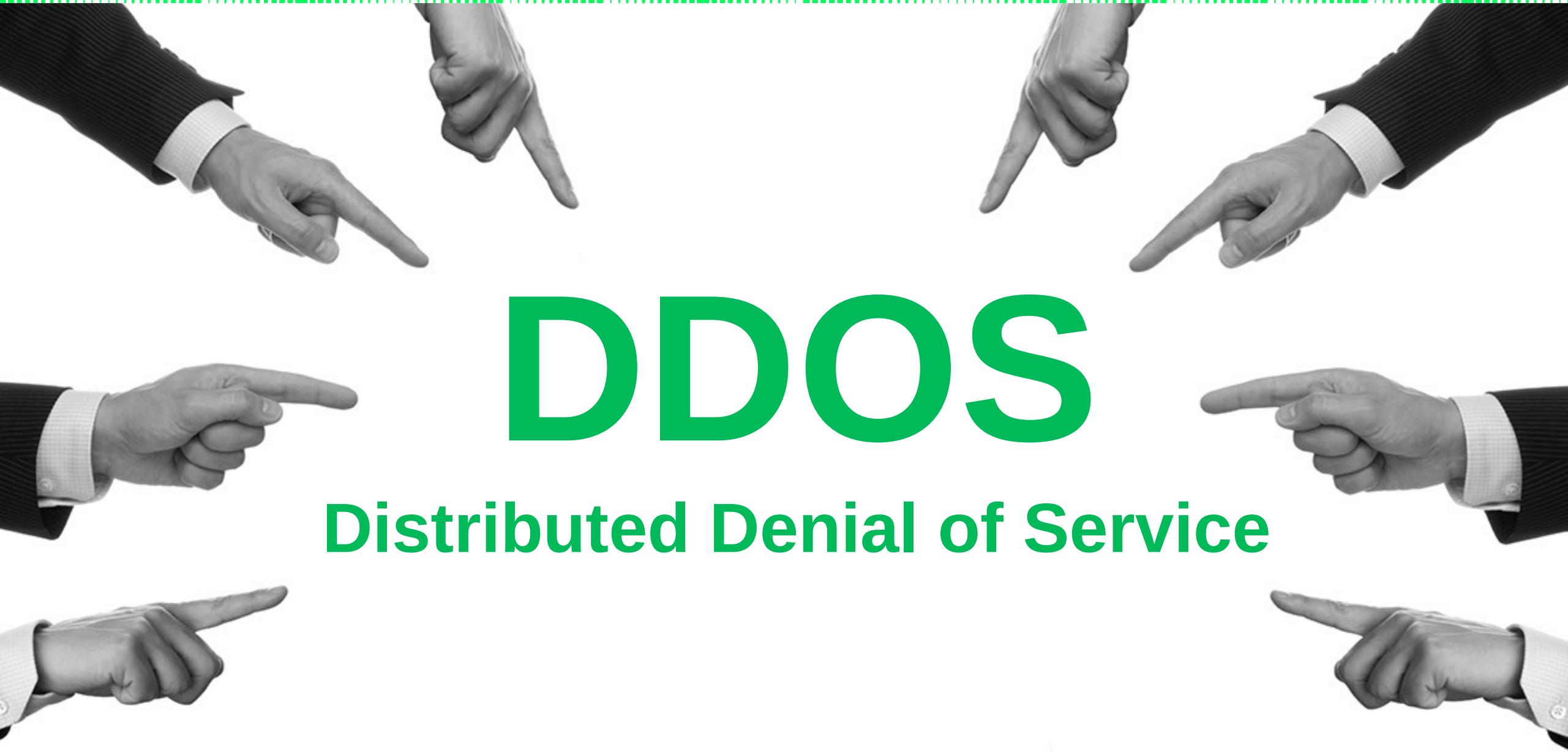
Three of the country's six big news organizations

Two of the biggest banks; and firms specializing in communications

©delinea

Websites DEFACED





DDOS

Distributed Denial of Service

©delinea

ESTONIA

1. Land Border with Russia

2. All Data/Services in Central Location

Source:
https://en.wikipedia.org/wiki/Estonia

AUGUST 2008

CCDCOE

Cooperative Cyber Defense Centre of Excellence

VIRTUAL DATA EMBASSY

E-ESTONIA

©delinea

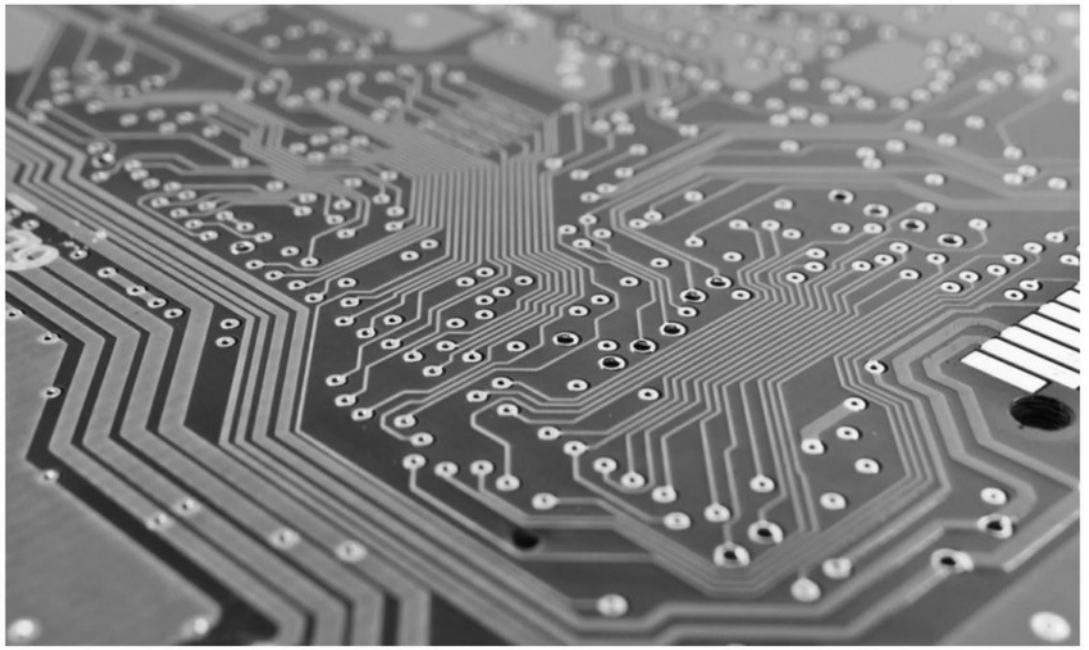
Estonia sets up “data embassy” in Luxembourg

The data centre will store critical data and make it harder to attack Estonia’s systems.

By Nurfilzah Rohaidi

4 MAY 2017

SECURITY



Estonia is on track to start storing government data in a “data embassy” in Luxembourg, it was reported.

EUROPE NEWS

UNITED KINGDOM | RUSSIA | GERMANY | FRANCE | EUROPEAN UNION

Estonia is unconcerned about a possible Russian cyberattack, president says

- Estonia became the first country to use blockchain on a national level
- It invests 20 million euros ($22.85 million) into e-health programs each year.

Silvia Amaro | @Silvia_Amaro
Published 4:24 AM ET Tue, 14 Aug 2018

Source: CNBC

WHAT CAN WE LEARN FROM THIS?

1. **CYBER WAR IS HERE** and WILL happen
2. **TRANSPARENCY & COORPERATION**
3. **DECENTRALISED** is key to mitigate DDOS
4. **DATA EMBASSIES** is a key SOLUTION
5. **DIGITAL IDENTITY** & **PRIVILEGES** is the FOUNDATION

Blockchain will not solve all your cybersecurity problems

©delinea

Thank You.

Delinea

Defining the boundaries of access