

Building and Protecting a Digital Society

Lessons Learned Unlocking Digital Identities



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Delinea



BLOCKCHAIN TECHNOLOGY



Blockchain will not solve
all your identity and
security challenges

Cryptocurrency

3 JAN 2009

Satoshi Nakamoto

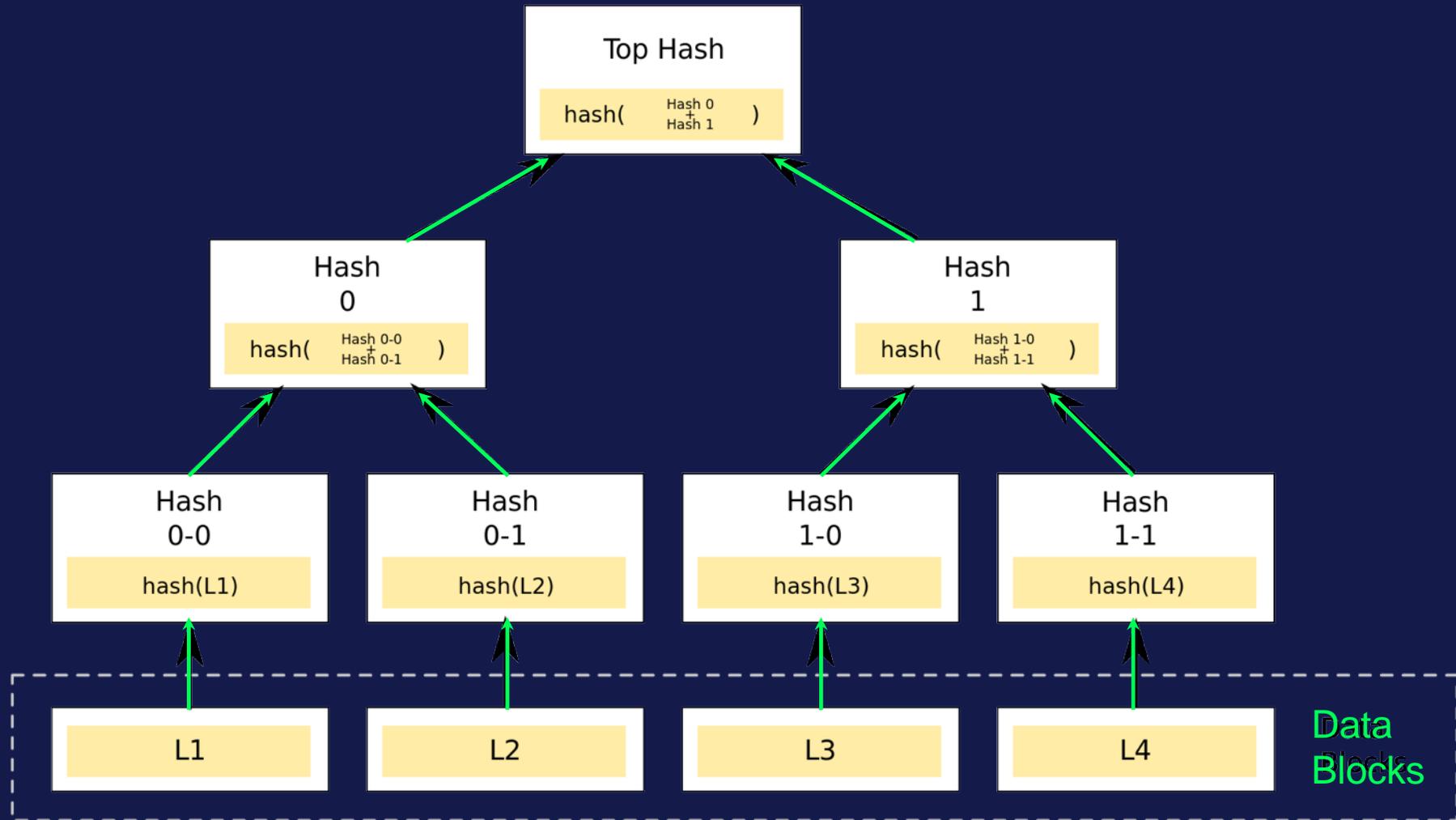




Blockchain

1979

Merkle Tree





HOLY
BIBLE

An aerial, grayscale photograph of Tallinn, Estonia, showing the city's medieval stone walls and towers. The most prominent feature is the tall, dark spire of St. Nicholas' Church in the background. The foreground shows various buildings, including a large stone tower with a conical roof. The text 'TALLINN, ESTONIA' is overlaid in the center.

TALLINN,
ESTONIA

ESTONIA

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

A grayscale photograph of a person holding a tablet computer. A hat is placed on top of the tablet. The word "PAPERLESS" is overlaid in large, bright green, bold, sans-serif capital letters across the center of the image.

PAPERLESS



1998



BLOCKCHAIN TECHNOLOGY



MARCH 11, 1999

Estonian ID Card Introduced





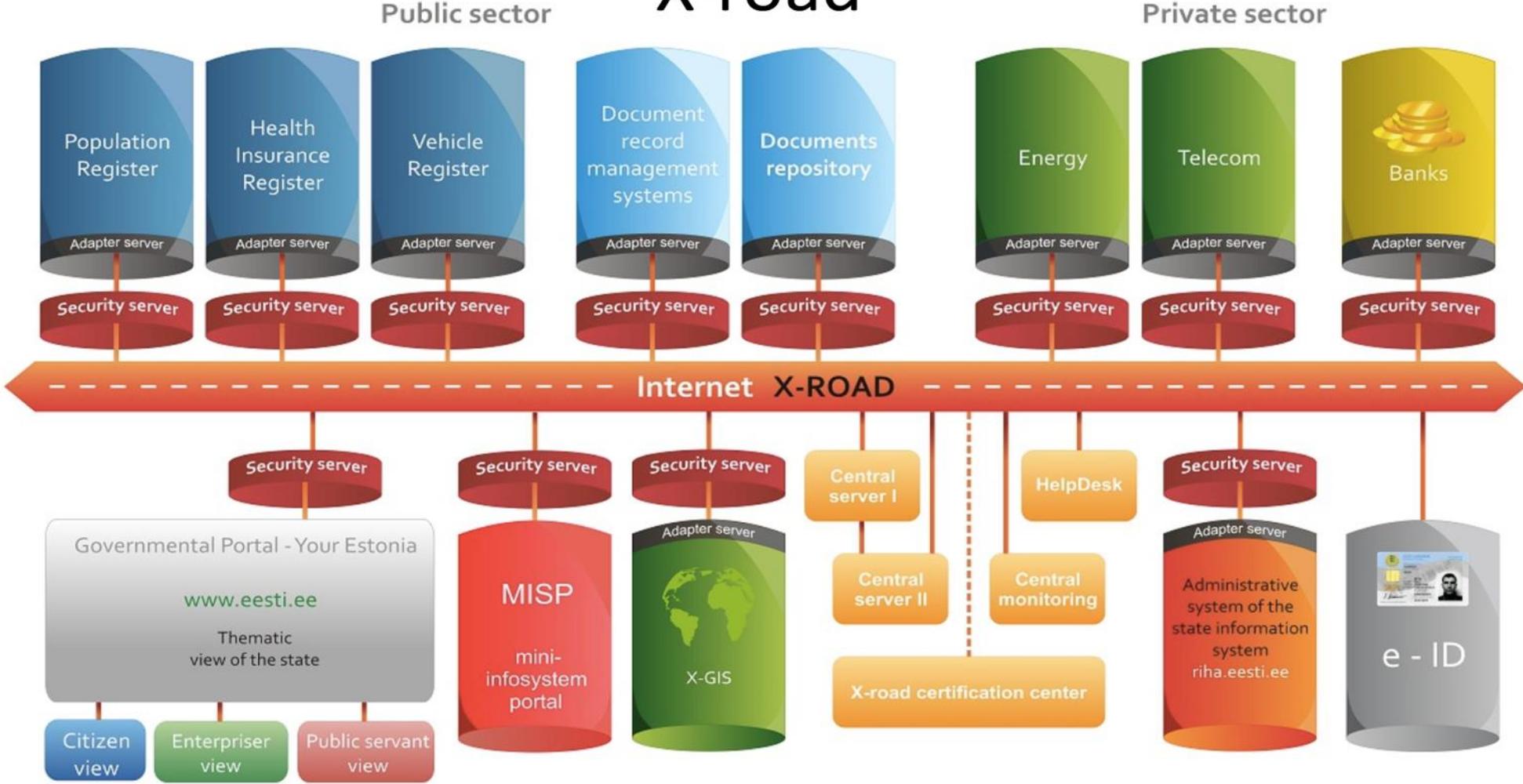
MARCH 2000

DIGITAL *Signature*



DIGITAL SOCIETY

X-road



MARCH 29 2004 - NATO

MAY 1 2004 - EU

2005

1st country to use Internet Voting



APRIL 27 2007



Decision to move a Bronze Statue

Photo: Piret Carson

VIOLENCE ERUPTED

CYBER WAR



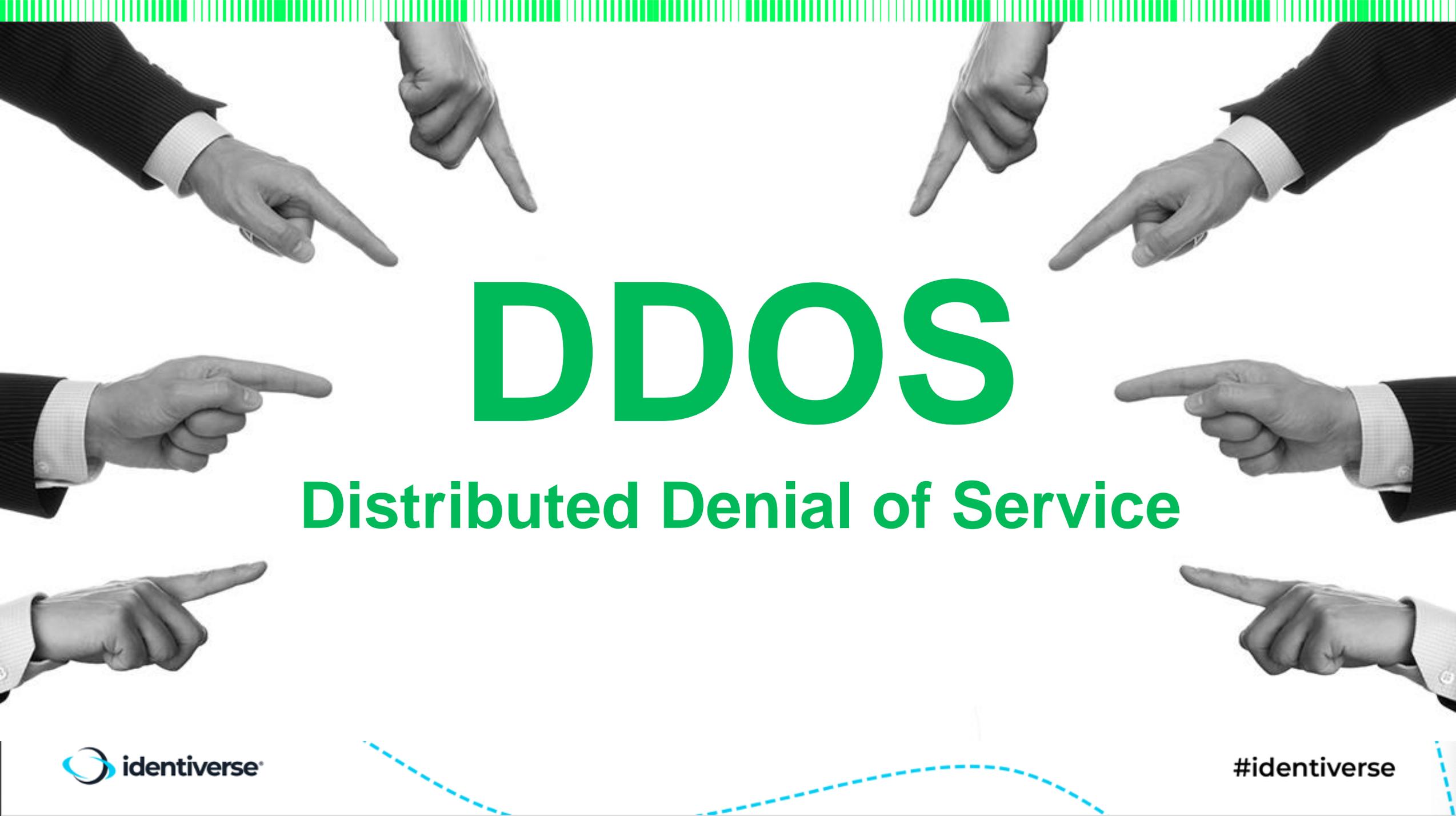
The main websites targeted:

- 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



Websites DEFACED





DDOS

Distributed Denial of Service

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

Estonia sets up “data embassy” in Luxembourg

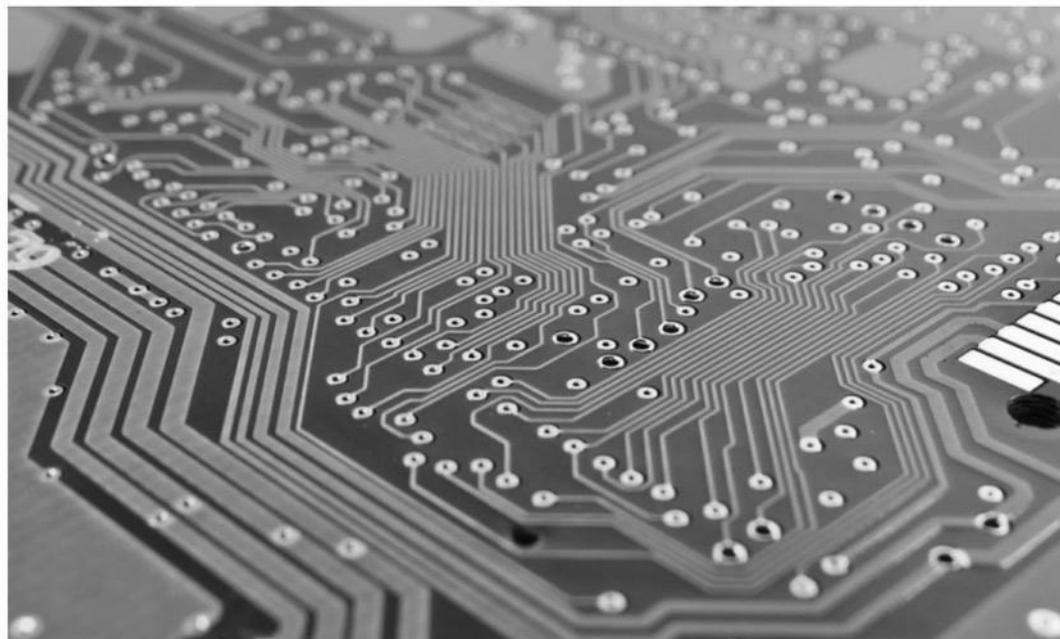
The data centre will store critical data and make it harder to attack Estonia’s systems.



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

THANK YOU!