# E-government ecosystem

**Hannes Astok**

Executive Director
Senior Expert
E-Governance Academy

eGA.ee

# e-Governance Academy

- Since 2002
- Independent
- Mission-based

- Non-profit
- Non-governmental
- Non-academic

- **46** employees in Estonia, Ukraine, Serbia
- **5,8 M** in annual turnover 2020

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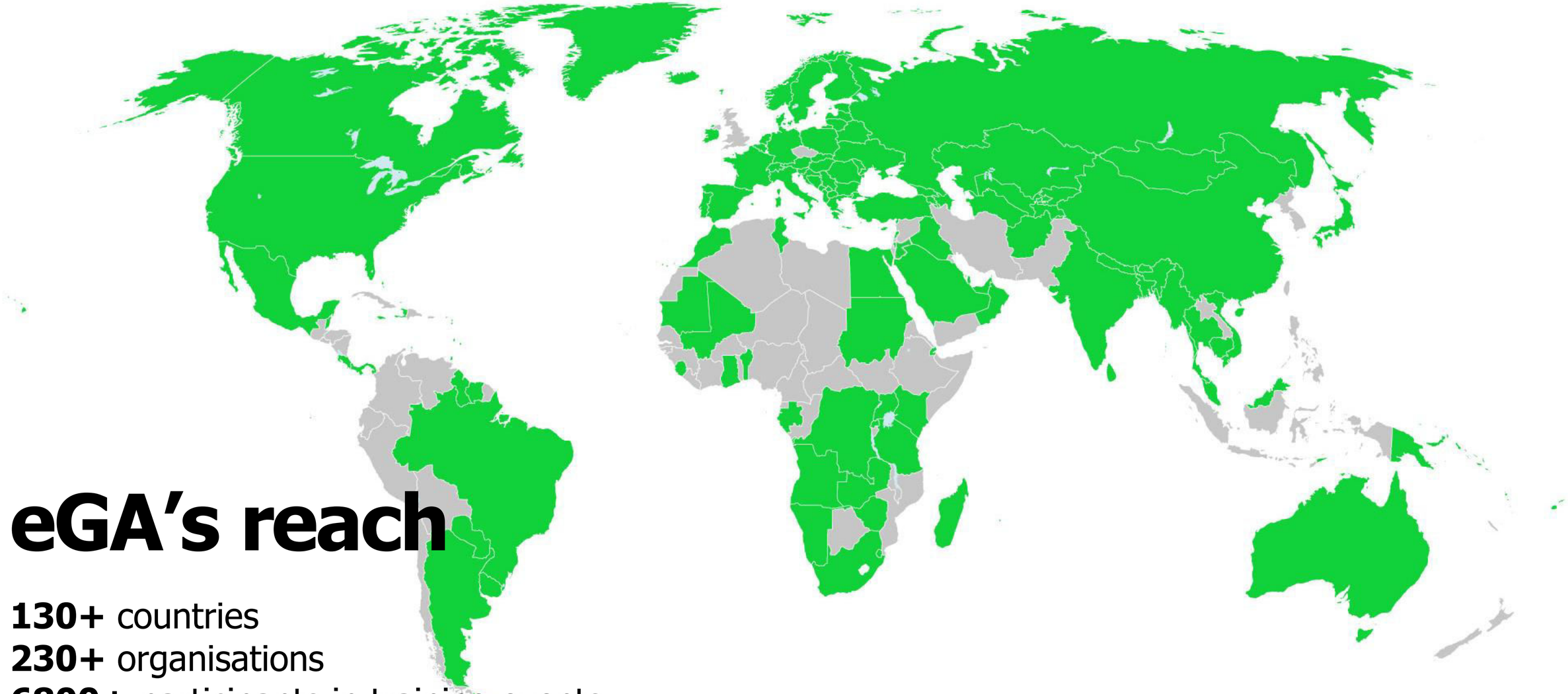

# eGA’s reach

**130+** countries
**230+** organisations
**6800+** participants in training events

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# Recent Projects

Austria

Ukraine

Aruba

NCSI national cyber security index

Turkey

Armenia

Cayman Islands

SUSTAINABLE DEVELOPMENT GOALS UNDP

Albania

Azerbaijan

Sri Lanka

EU

Macedonia

Belarus

Kingdom of Tonga

Benin

Montenegro

Georgia

Kiribati

Tunisia

Serbia

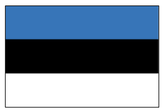
Moldova

Jordan

Kosovo

Mongolia

Iraq


Estonia

Uganda

Djibouti

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# Main donors

ESTONIA
DEVELOPMENT COOPERATION

European Commission

Sweden
Sverige

THE WORLD BANK

USAID
FROM THE AMERICAN PEOPLE

IDB Inter-American Development Bank

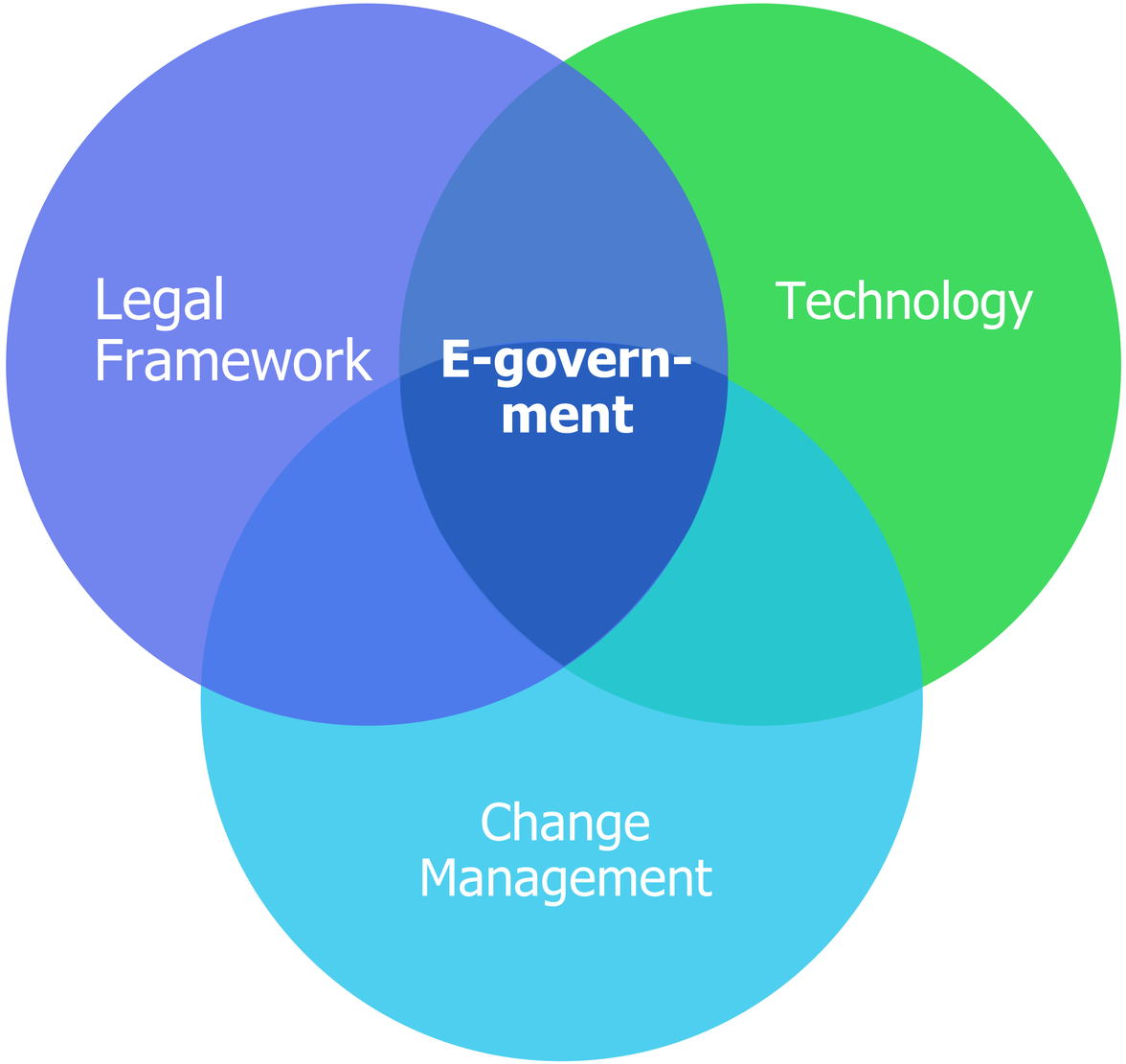
UNDP

European Bank
for Reconstruction and Development

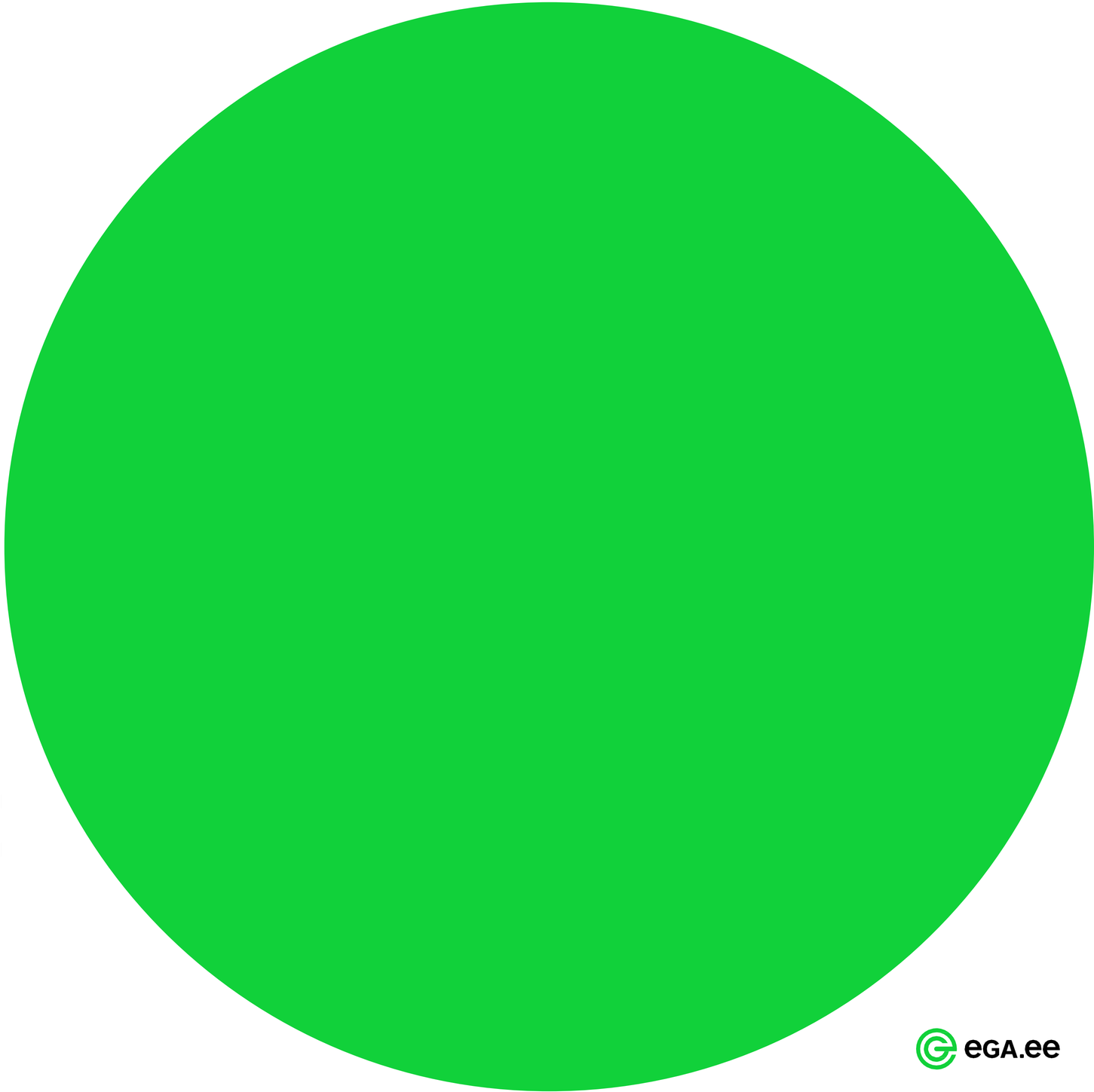
german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

# Pillars of e-government



# E-government enablers



# Analog and digital enablers

## Digital elements

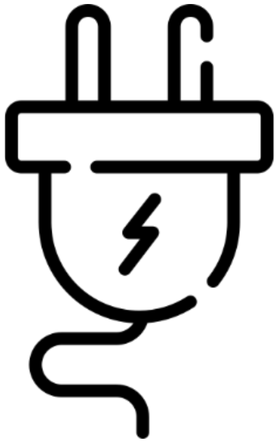
- Digital databases
- Interoperability
- Digital Identity
- Services portal and applications
- Cyber security
- Sectoral solutions

## Analog elements

- Legislation & regulations
- Sustainable organization
- Fiscal framework
- Change management
- Political will

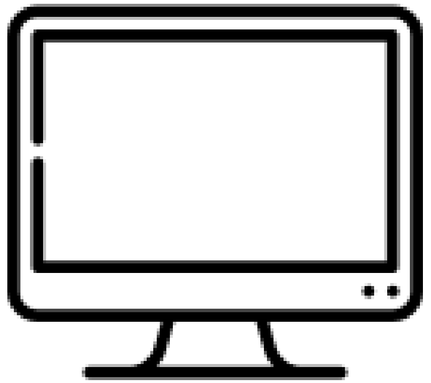
*Source: Digital Dividends. World Bank report 2016*

# Preconditions for e-government solutions



Availability of electricity

Internet access

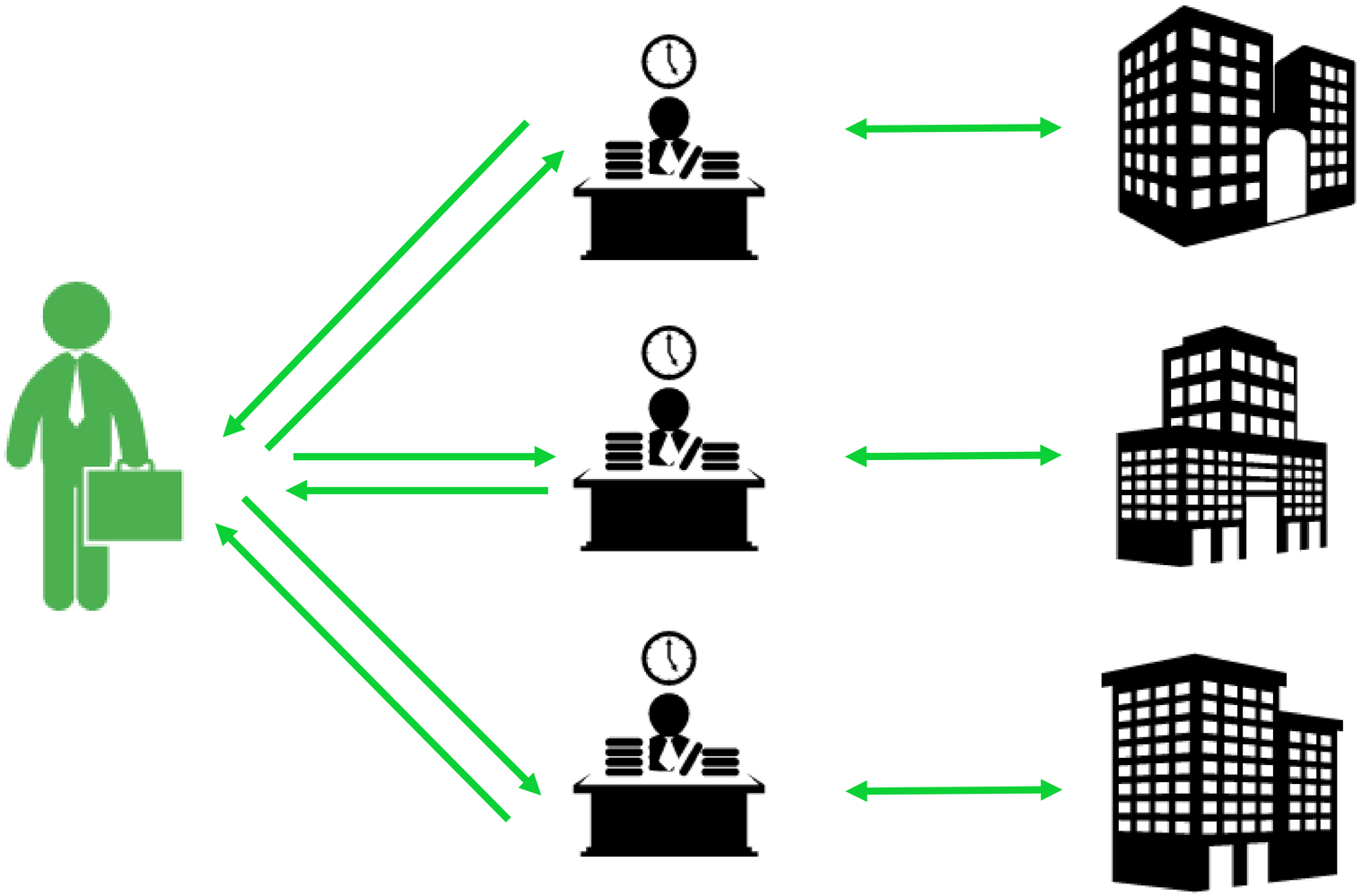


Devices

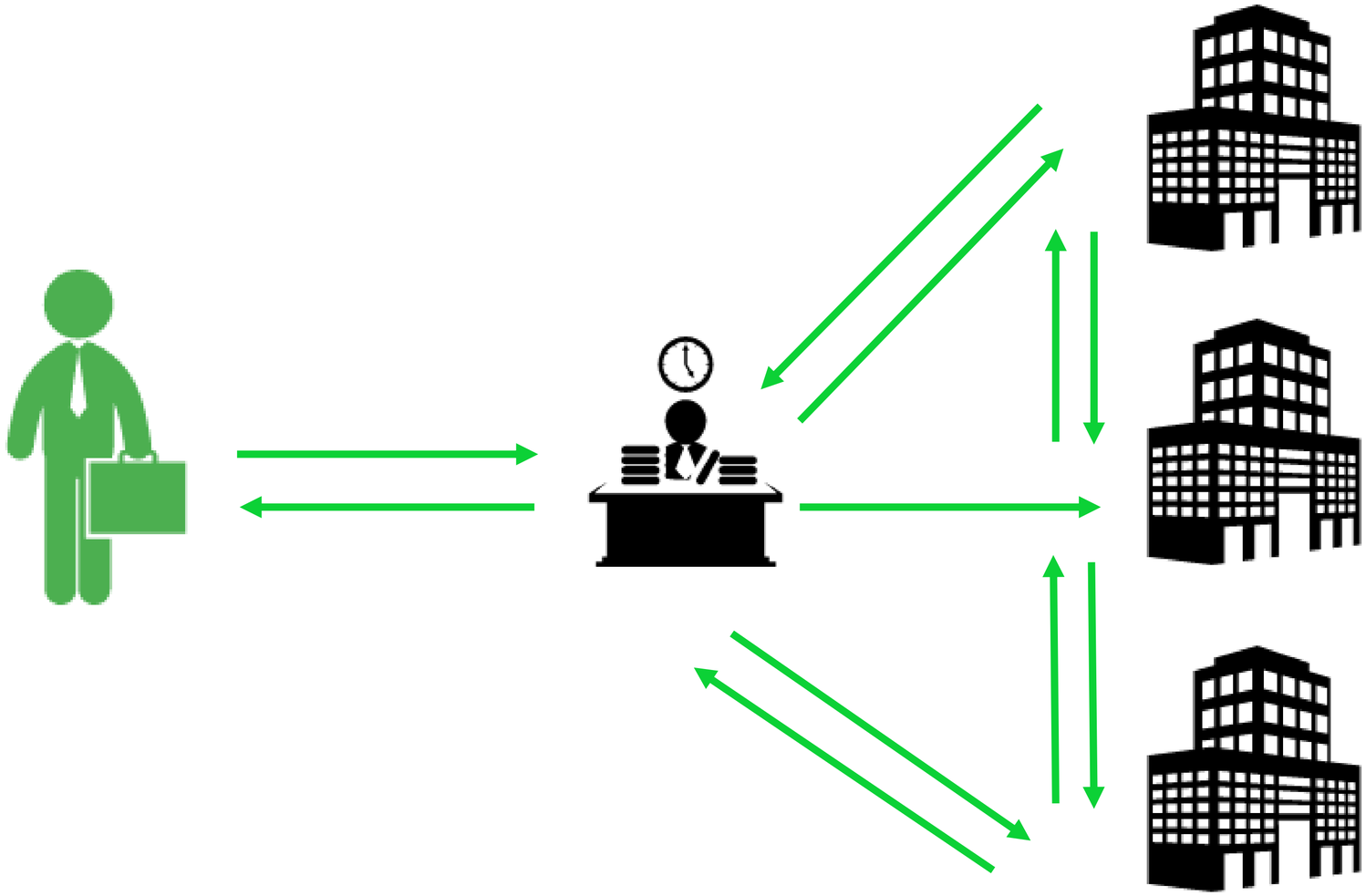
Icons made by Freepik from flaticon.com

# Where is the bottleneck?

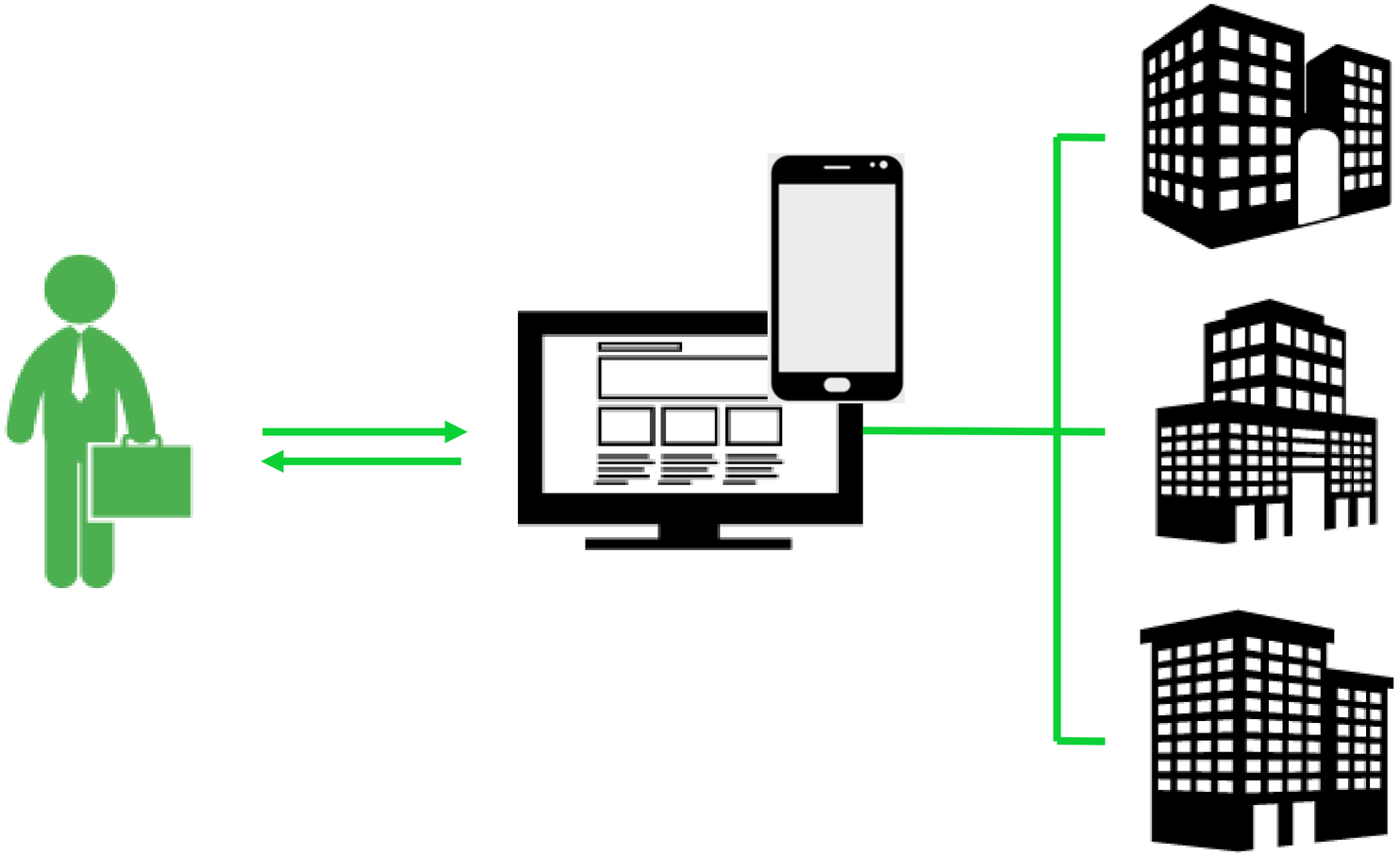
# Traditional public service delivery



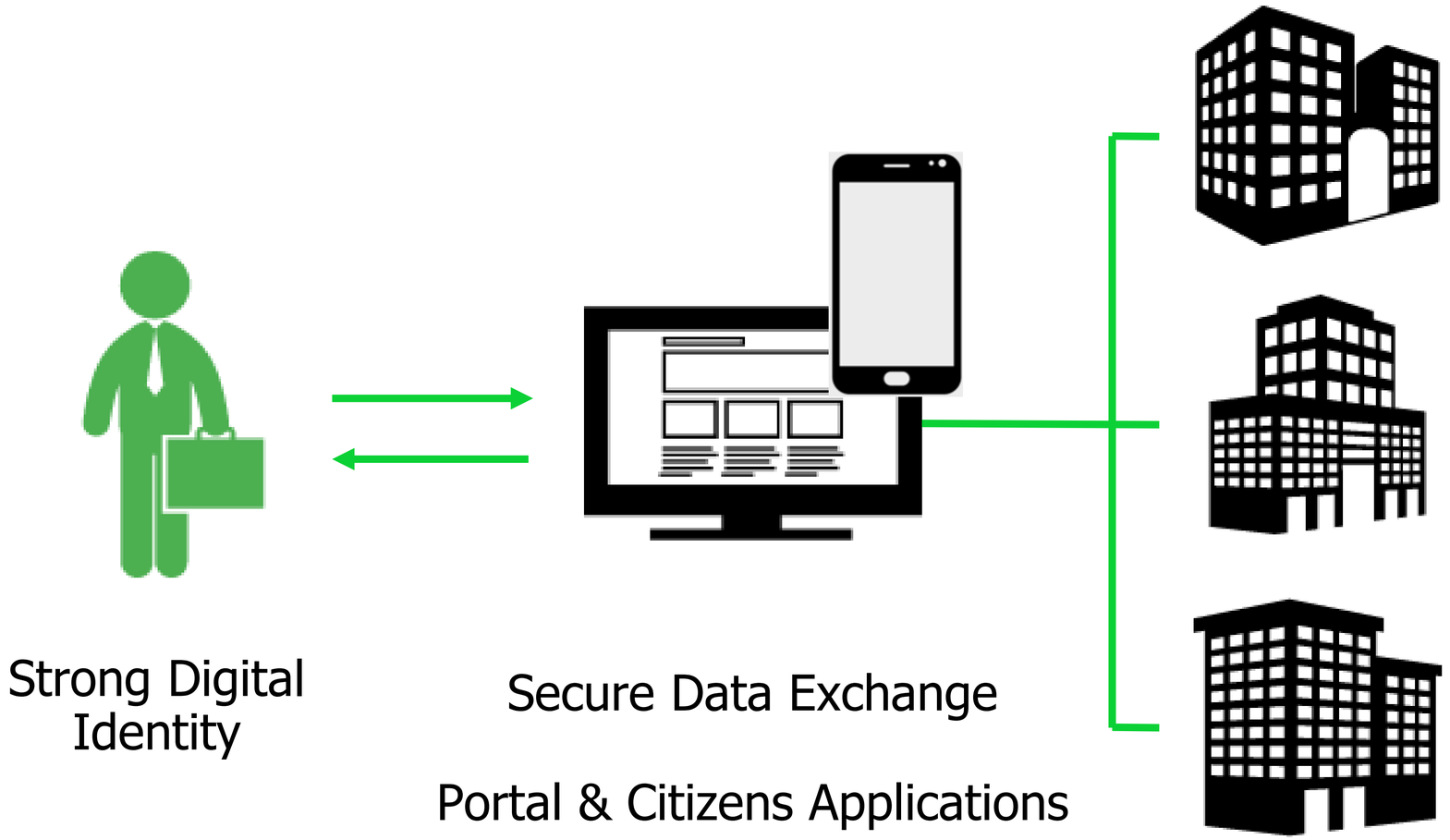
# One-stop-shop



# Self service



# Self service enablers



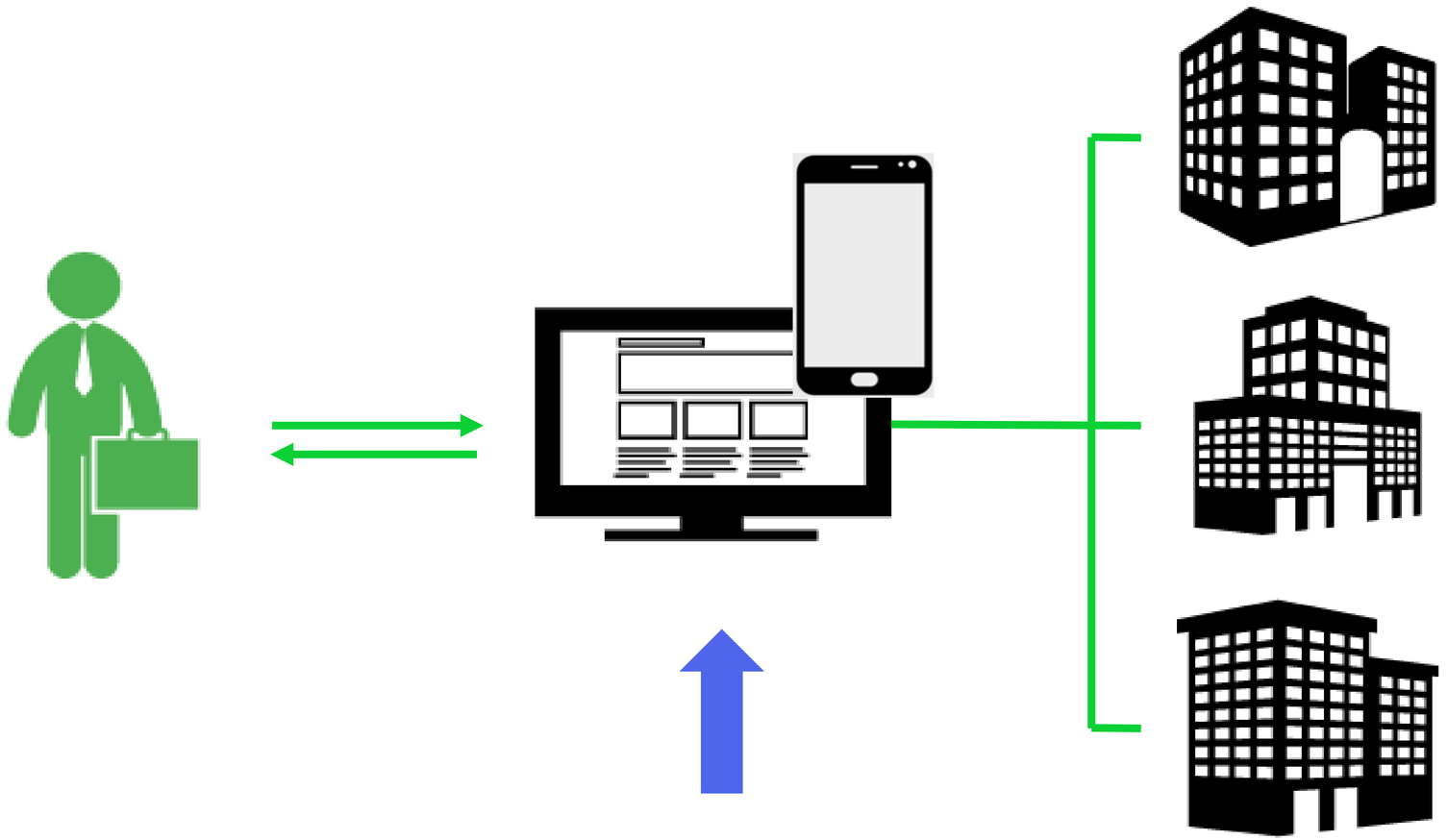
Strong Digital Identity

Secure Data Exchange

Portal & Citizens Applications

Digital Data Accessible

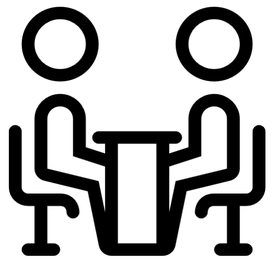
# Digital services by service owners



Digital Services by
Ministries & Agencies & Municipalities

# Offline vs Online: Applying for certificate

| Offline (h) | Activity | Online (h) |
|---|---|---|
| 4 | Travel to the government office | |
| 0,5 | Filling the application | 0,5 |
| 3 | Waiting in line to submit the application | |
| 1 | Submitting the application | |
| 4 | Travel back home | |
| 4 | Travel to the government office | |
| 3 | Waiting in line to pick-up the certificate | |
| 0,5 | Pick-up of the certificate | |
| 4 | Travel back home | |



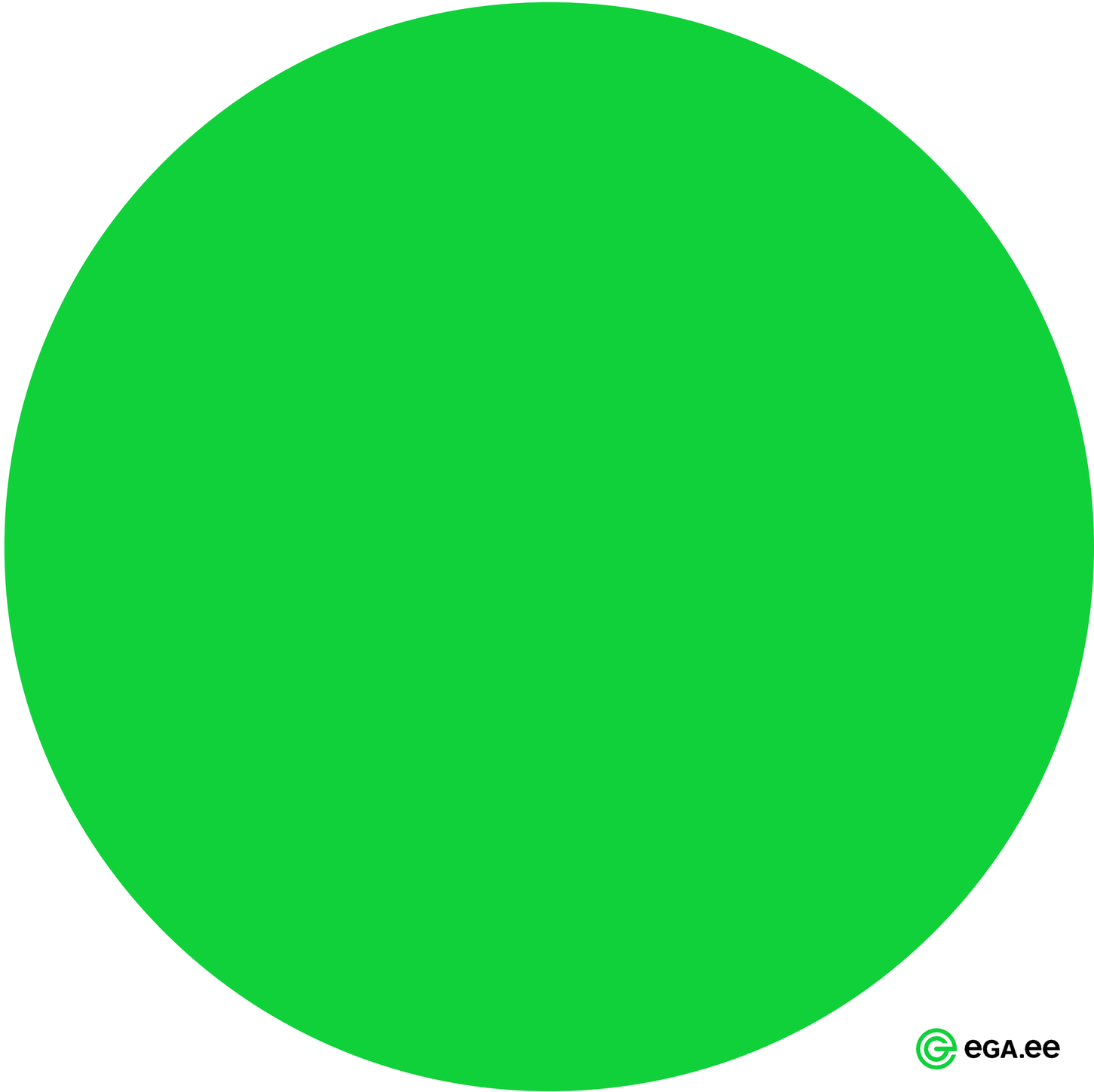
**24 hours**

**VS**

**0,5 hours**

**Total time difference**
**23,5 h**

# Closer look to digital elements



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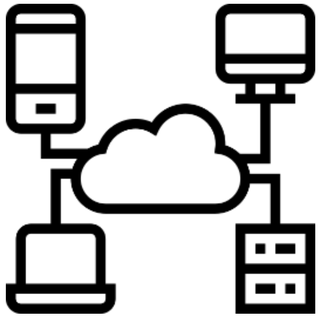
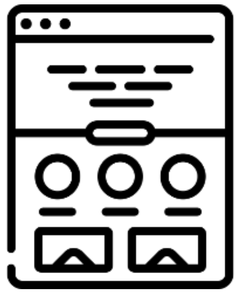
# Key digital elements

Digital databases



Interoperability solution – secure data exchange

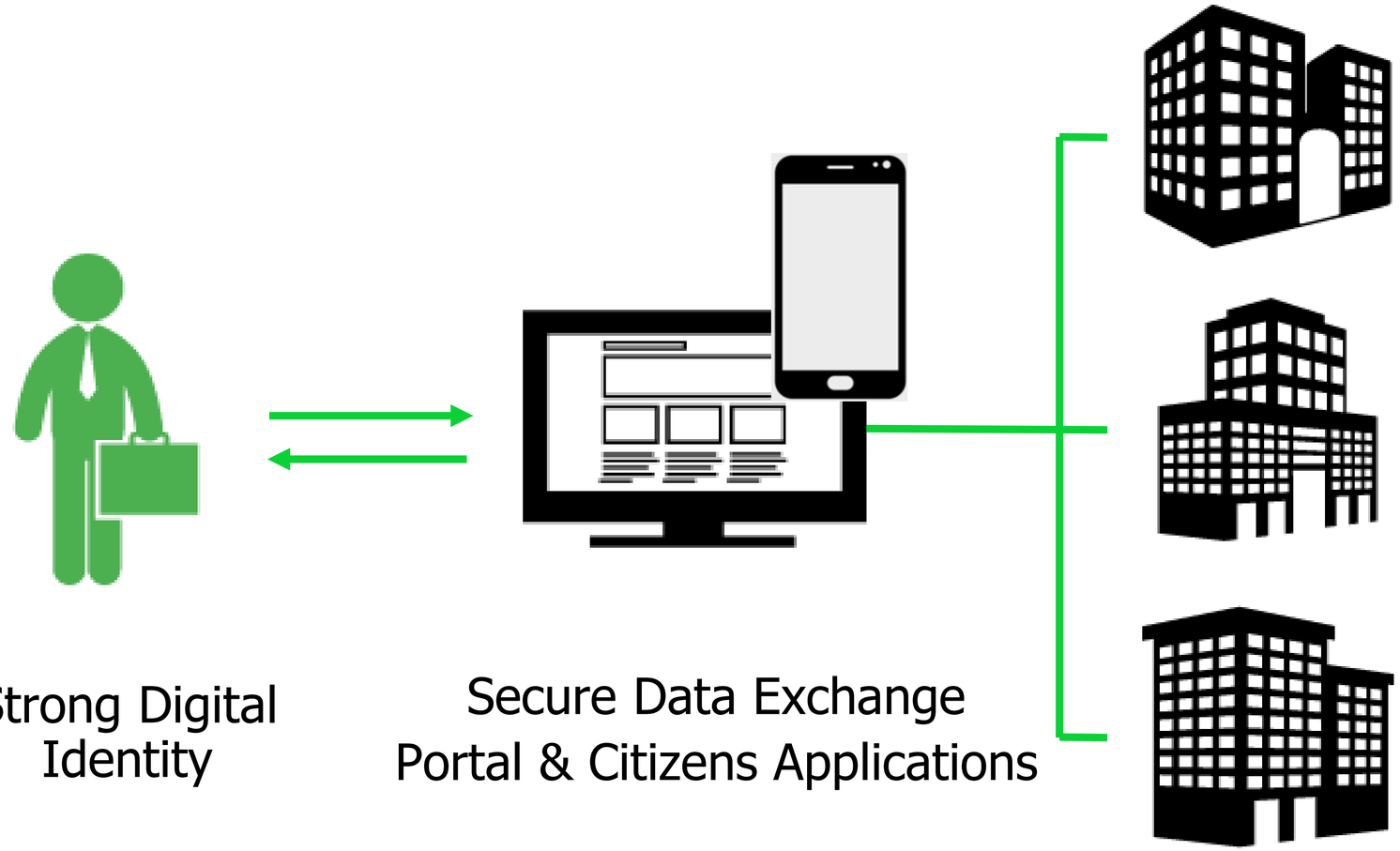


Services portal

Digital identity

**Those elements are shared (or platform) services, to be shared across the government**

# Digital enablers

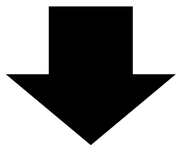


Strong Digital Identity

Secure Data Exchange Portal & Citizens Applications

**Digital Data Accessible**

# Digital Databases



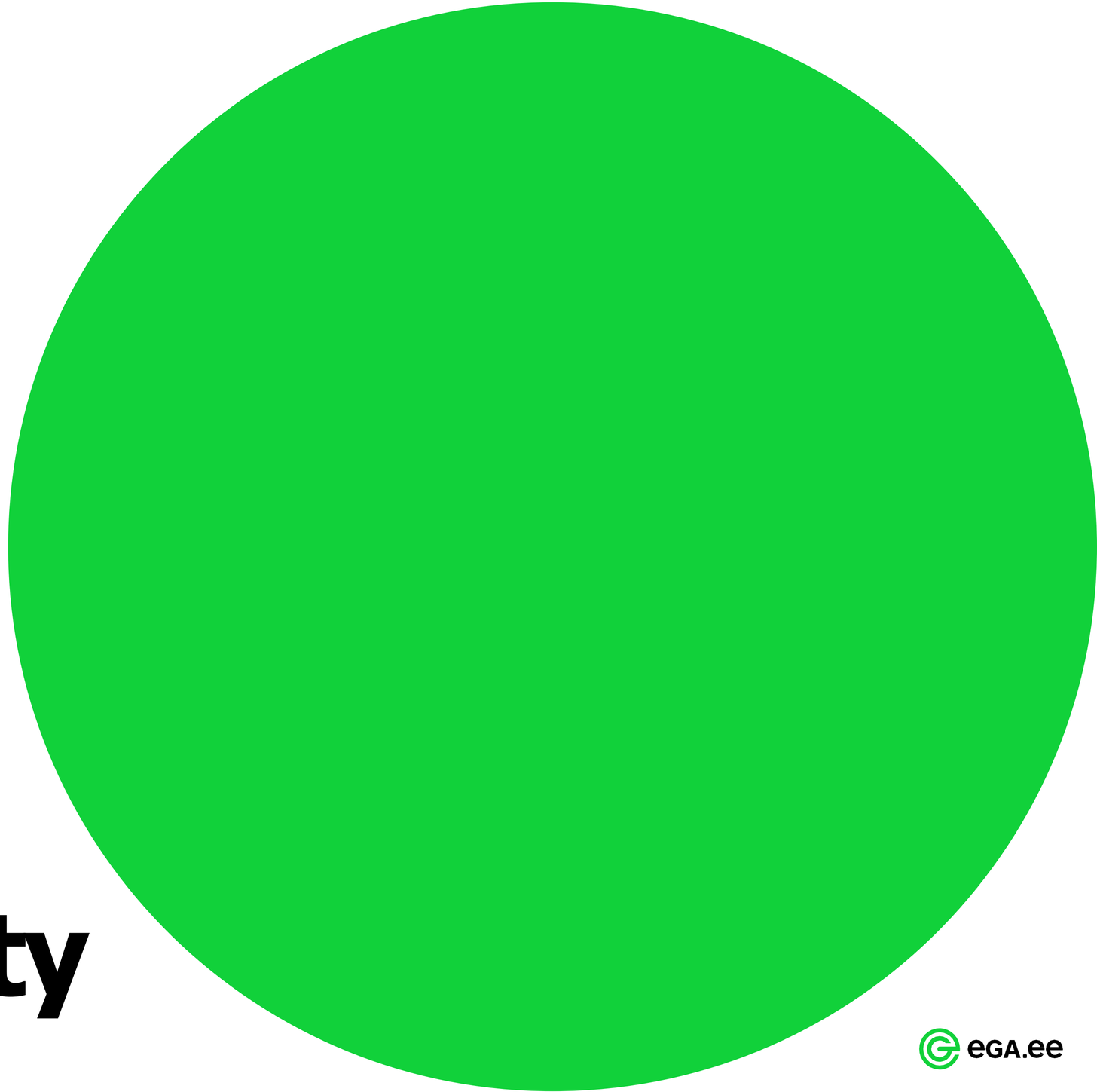
# Digital Data Accessible

11497/58
MfS Allg. P.
11497/68 Zentral-Archiv

# Principles of digital databases development

- **Unique numeric identifiers** for citizens, businesses, real estate, land parcels, etc.
- Unique numeric identifiers are used **across the government for all transactions**
- **Once only**. Citizens never have to provide the same information twice
- **No duplicated data** in the databases
- Databases become the **single source of truth**

# Secure Data Exchange & Governmental Interoperability



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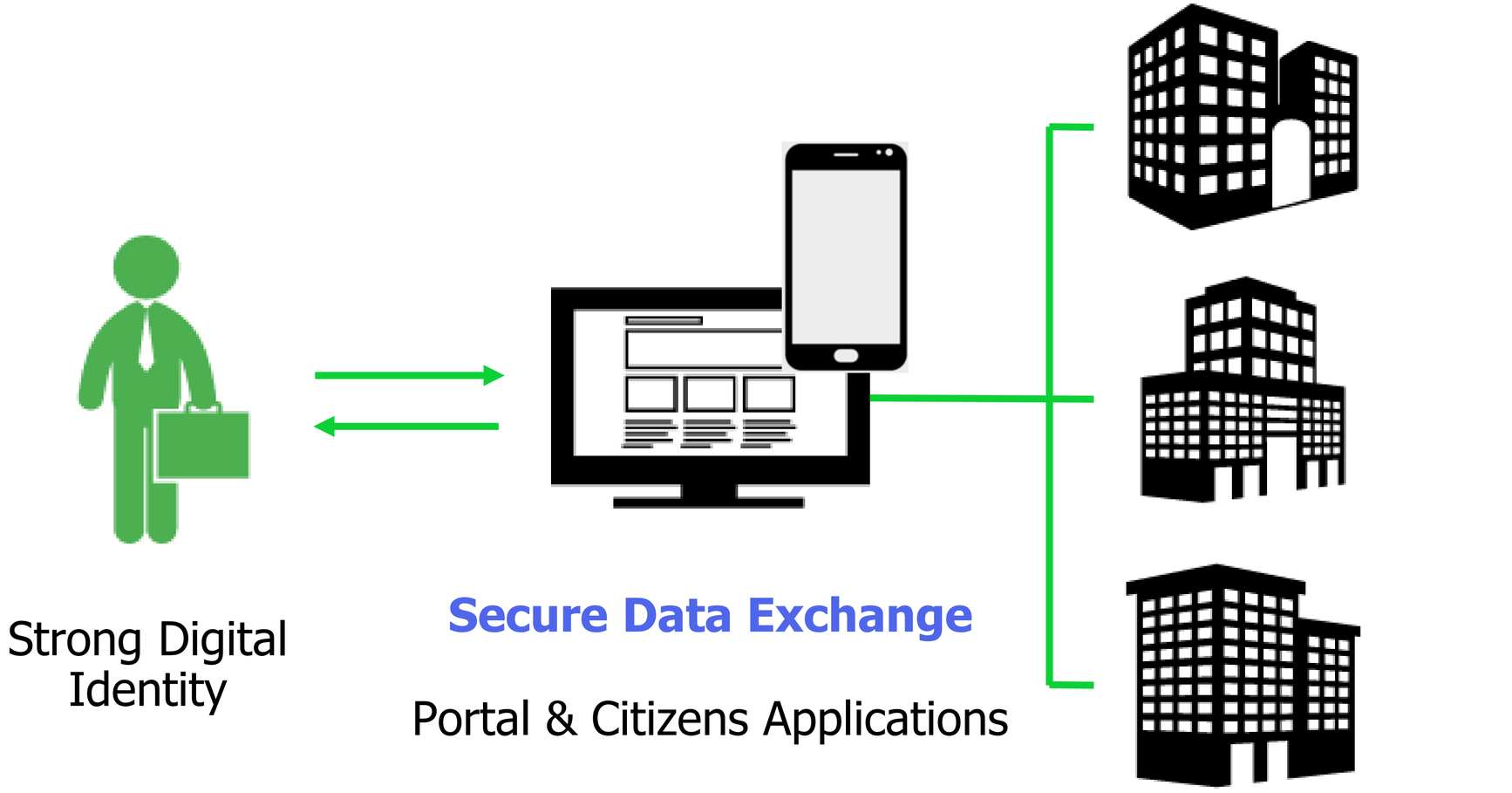
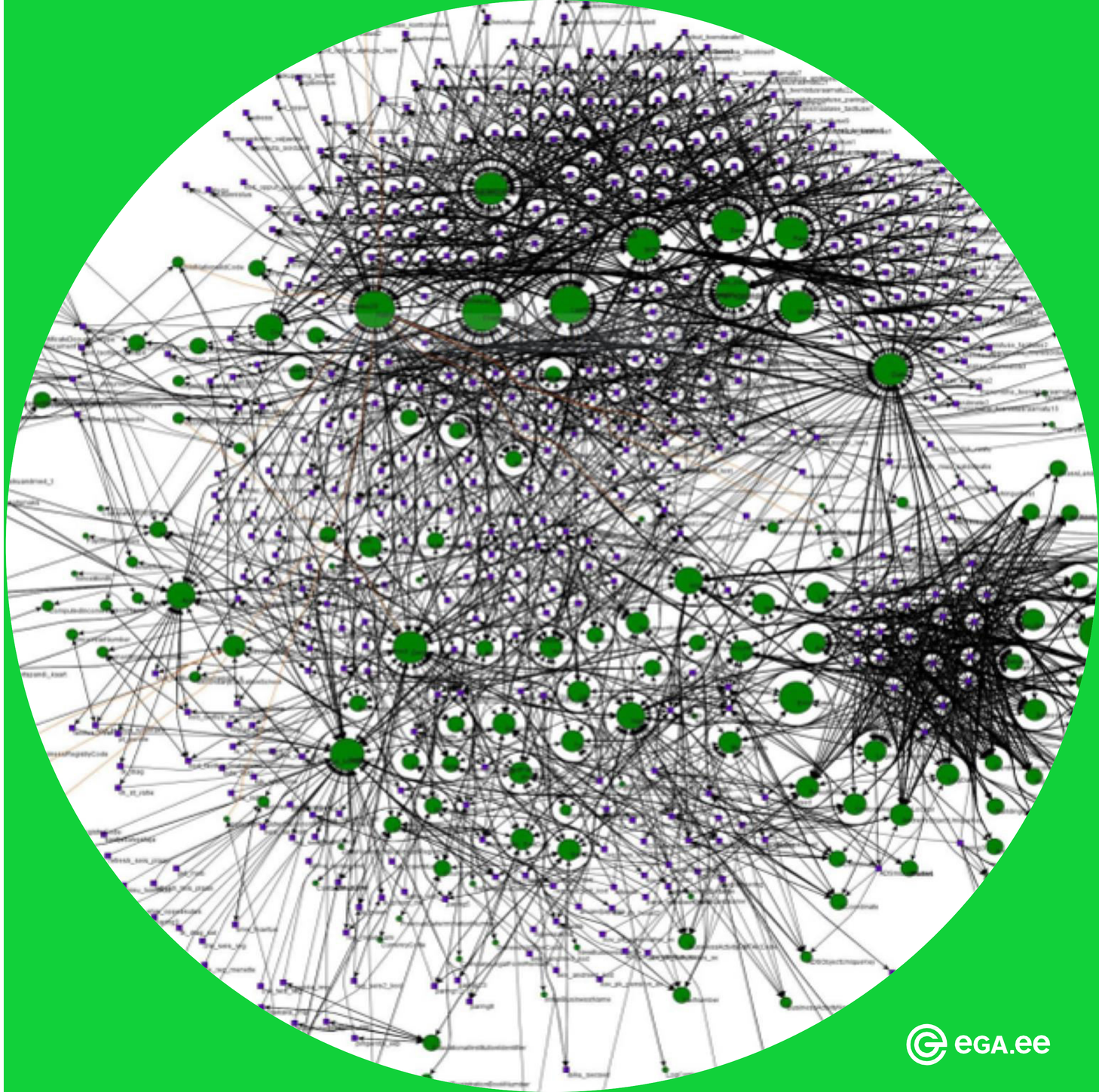
# Digital enablers

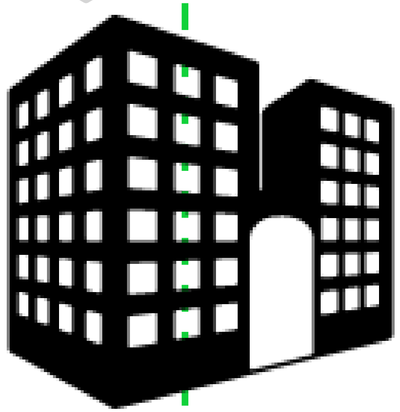


# Non-organized model



# Example: Pensions' payments

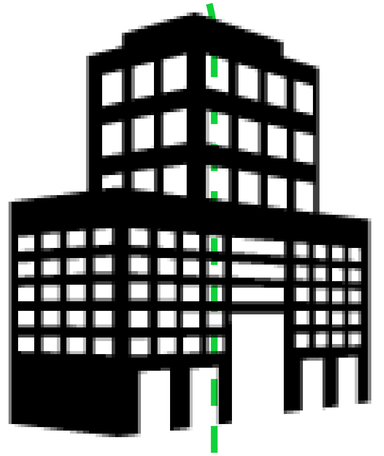
500,000 pension and subsidy payments/month



Pension Authority

Request: Are they alive?
(sending ID-numbers)

Automated response: Those 980 passed away
(response as ID numbers)
Time-stamped+digitally signed



Civic Registry

Interoperability Solution X-Road

# Organized data exchange

Finland

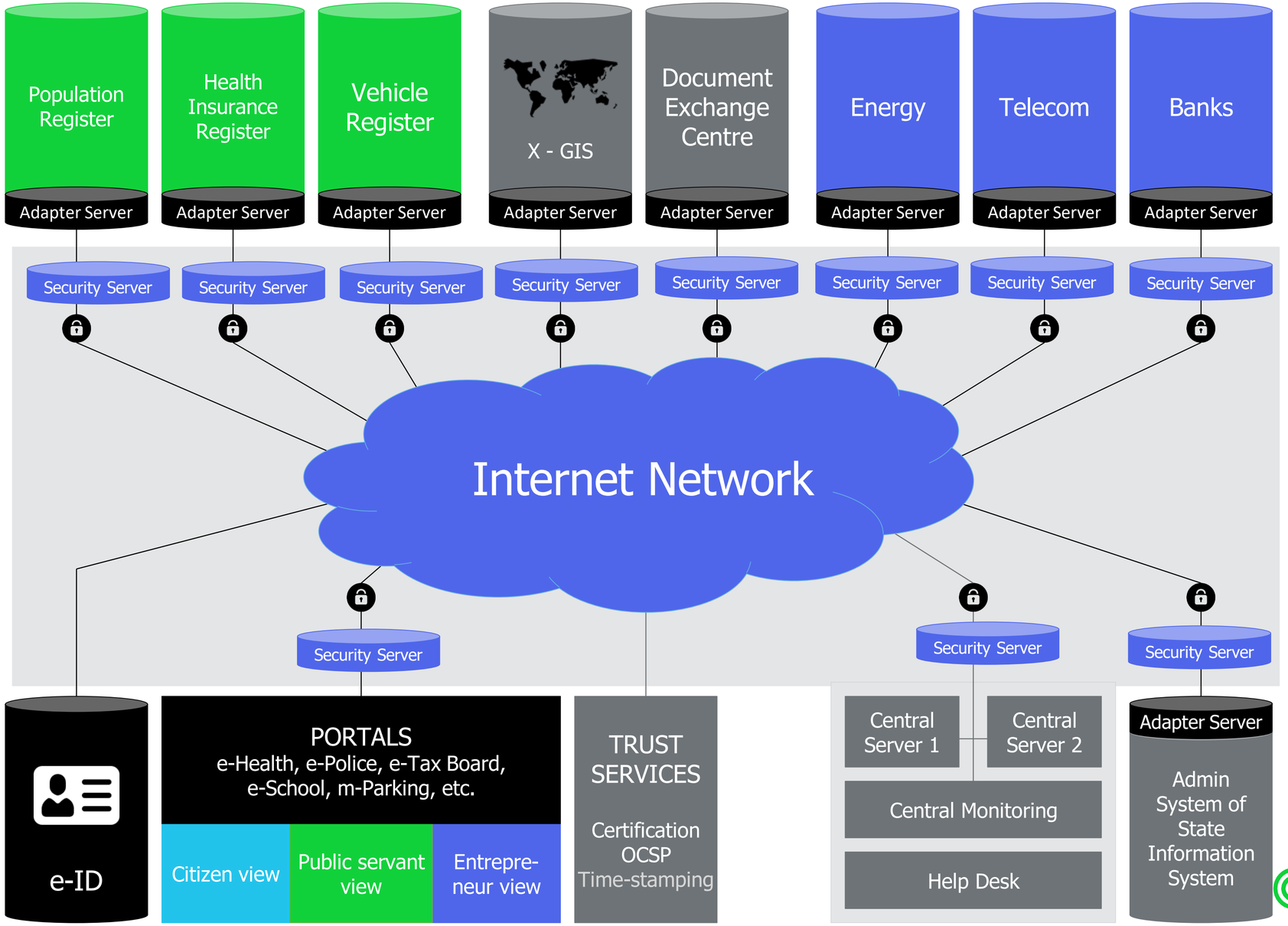
Estonia

Benin

Kyrgyzstan

Namibia

Ukraine

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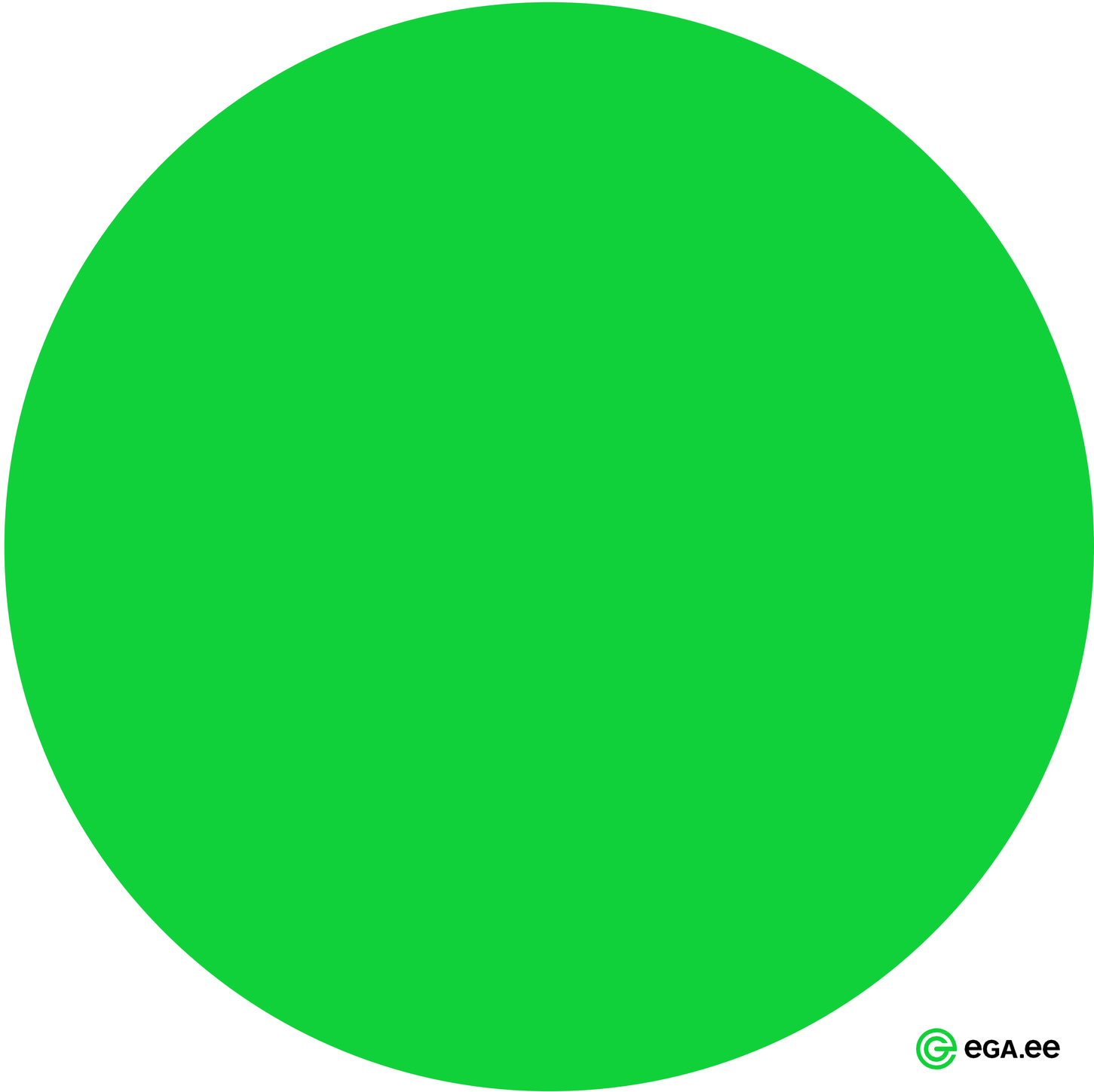
# Benefits

- No need to collect and verify similar datasets by every institution
- Single sources of truth are easily accessible
- Easy to develop services
- Every transaction is verified and timestamped
- Transactions with legal value

# Strong digital identity



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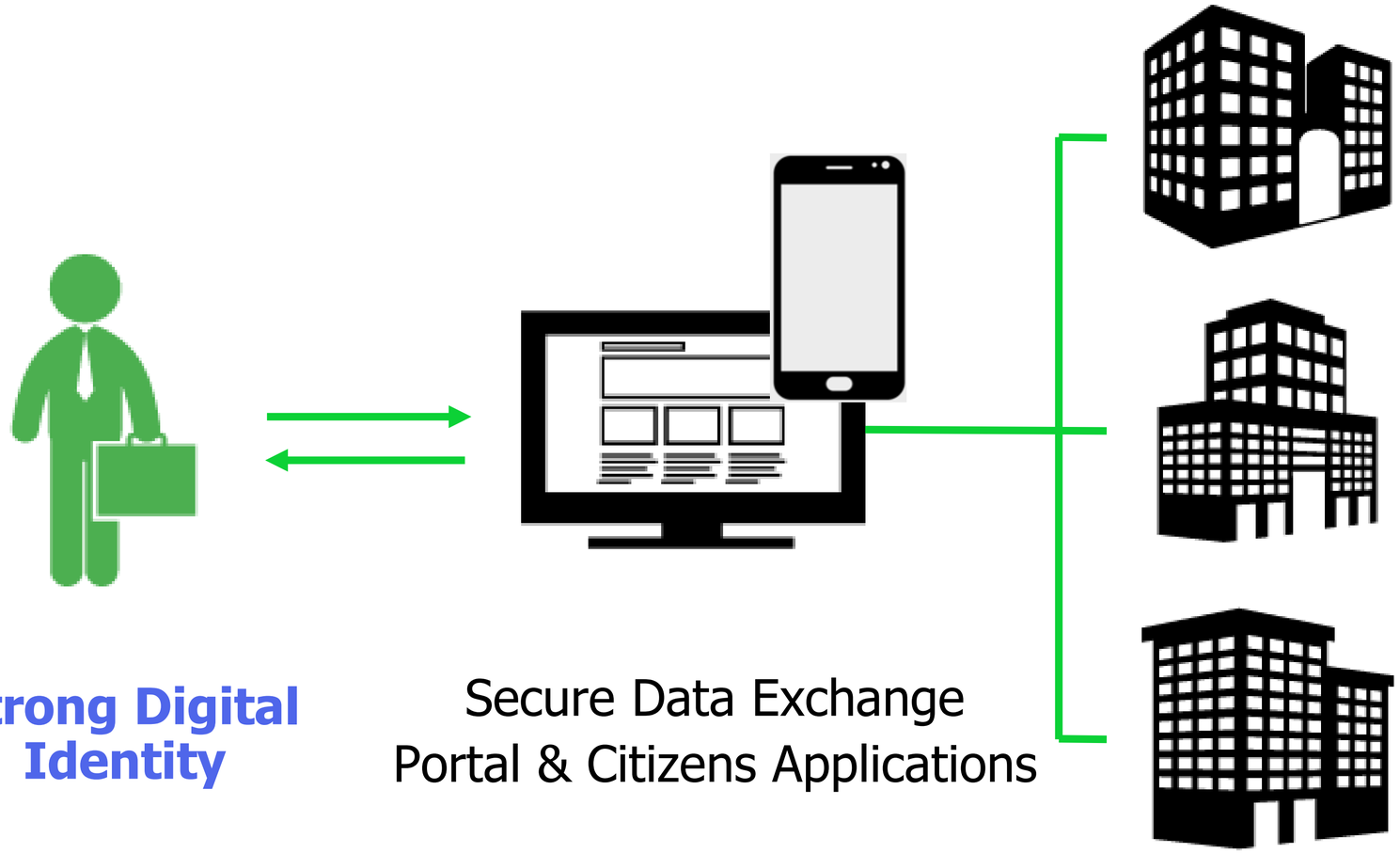
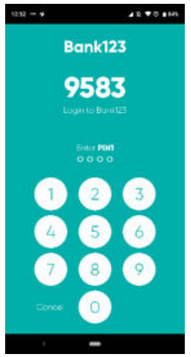
# Digital enablers



# Digital identity carriers

Typical carriers of the certificates are:

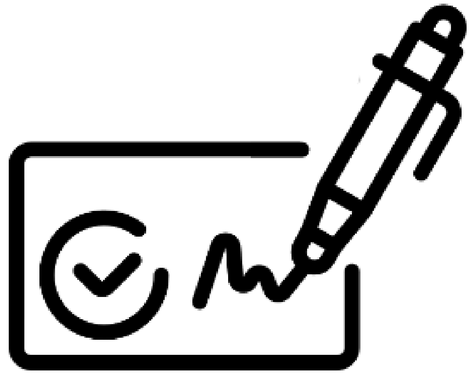
- eID cards
- Flash drives
- Mobile phone SIM cards
- Smart phone applications



# Certificates in devices

**In the device are usually stored two certificates:**

**1st certificate**
for identification



**2nd certificate**
for digital signature

# Where to use digital identity?

- Usually, there is a need **to sign the applications** for public services
- The same need is the need **to sign contracts** and other documents

Typical scenario:

- You need to **sign in to the application** using 1st certificate for identification
- You need **to sign the application or document** using 2nd certificate for digital signature

# Where to use?

- Public e-services (e-Tax, e-Prescriptions etc.)
- Signing documents and contracts
- Applying for driver license, social benefits
- Register a new business
- Accessing grades and curriculum in schools and universities
- Bank transactions

# Efficiency

Digital signatures save

20 minutes per transaction

World Bank World Development Report 2016

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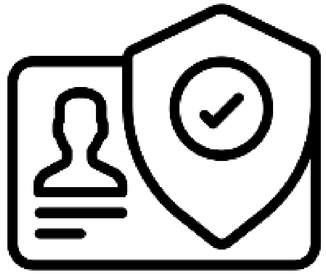
# Cost-profit calculators



**Up to today Estonian citizens have provided**

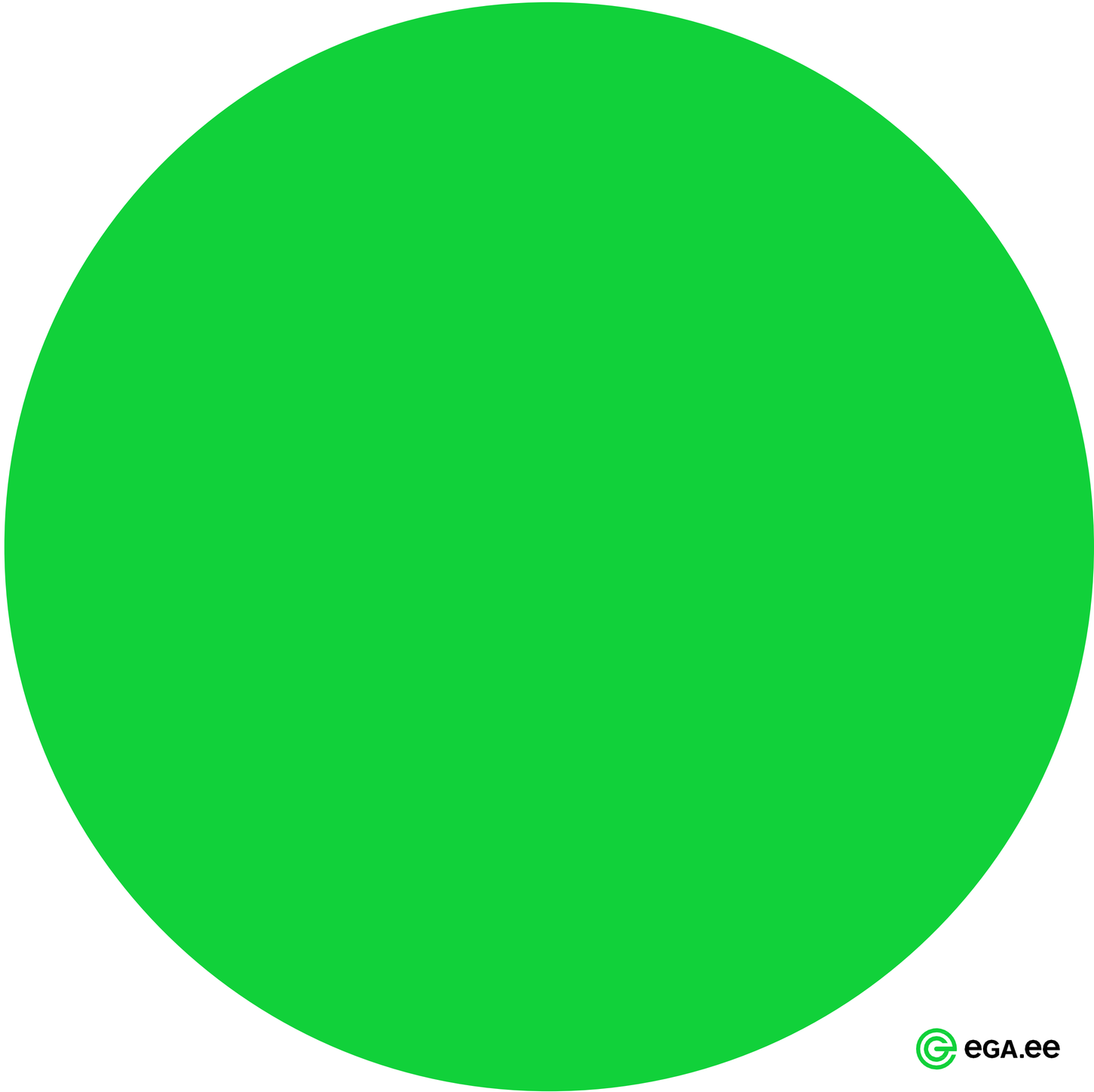
**1,288 million digital signatures**

**People and companies have saved more than 2,576 million euros (2€ per signature)**

**Actual savings may be greater:**
http://eturundus.eu/digital-signature/ , http://eturundus.eu/digital-document/

*Source: https://www.id.ee*

# Portal & Citizens Applications



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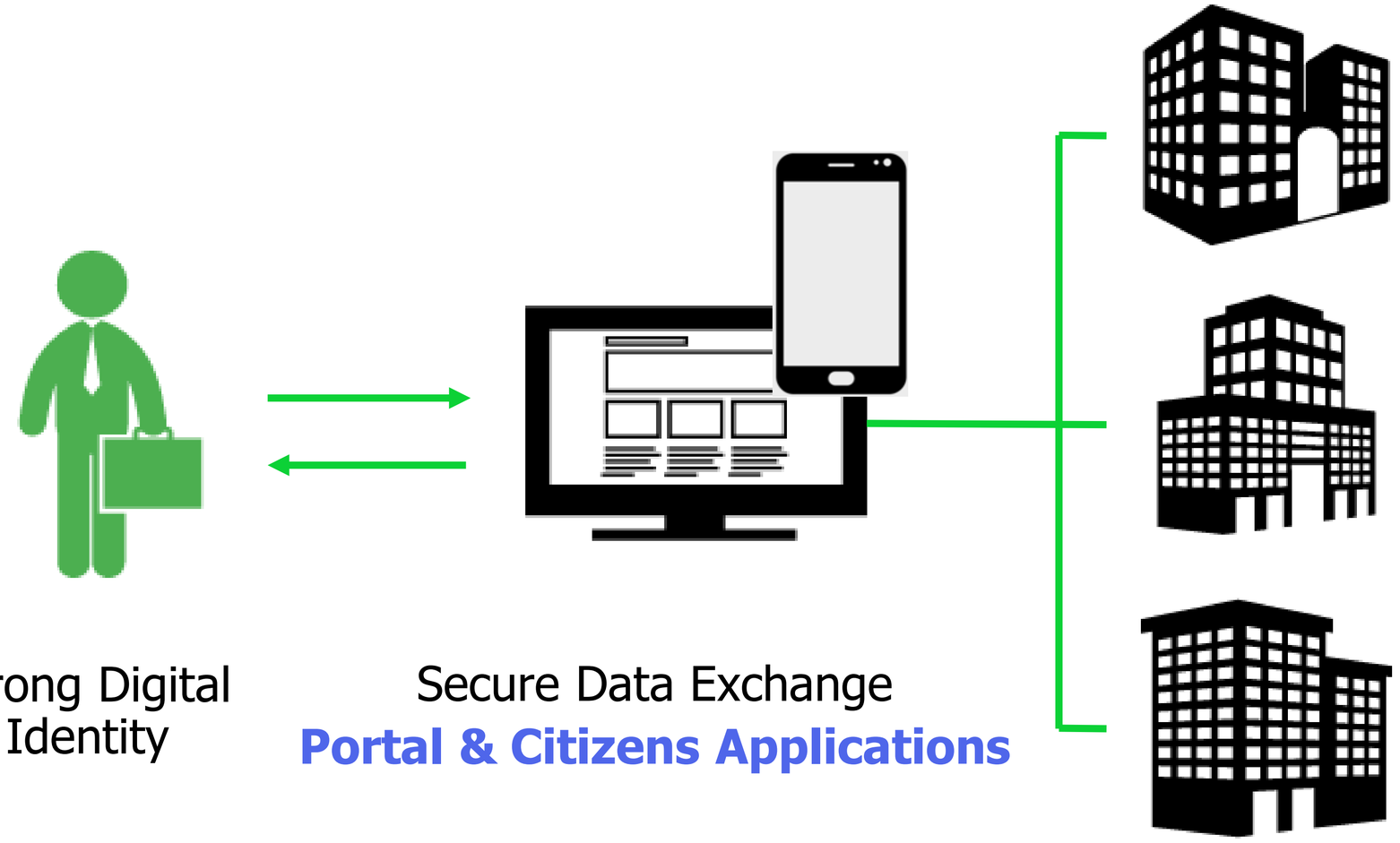
# Portal & citizens applications



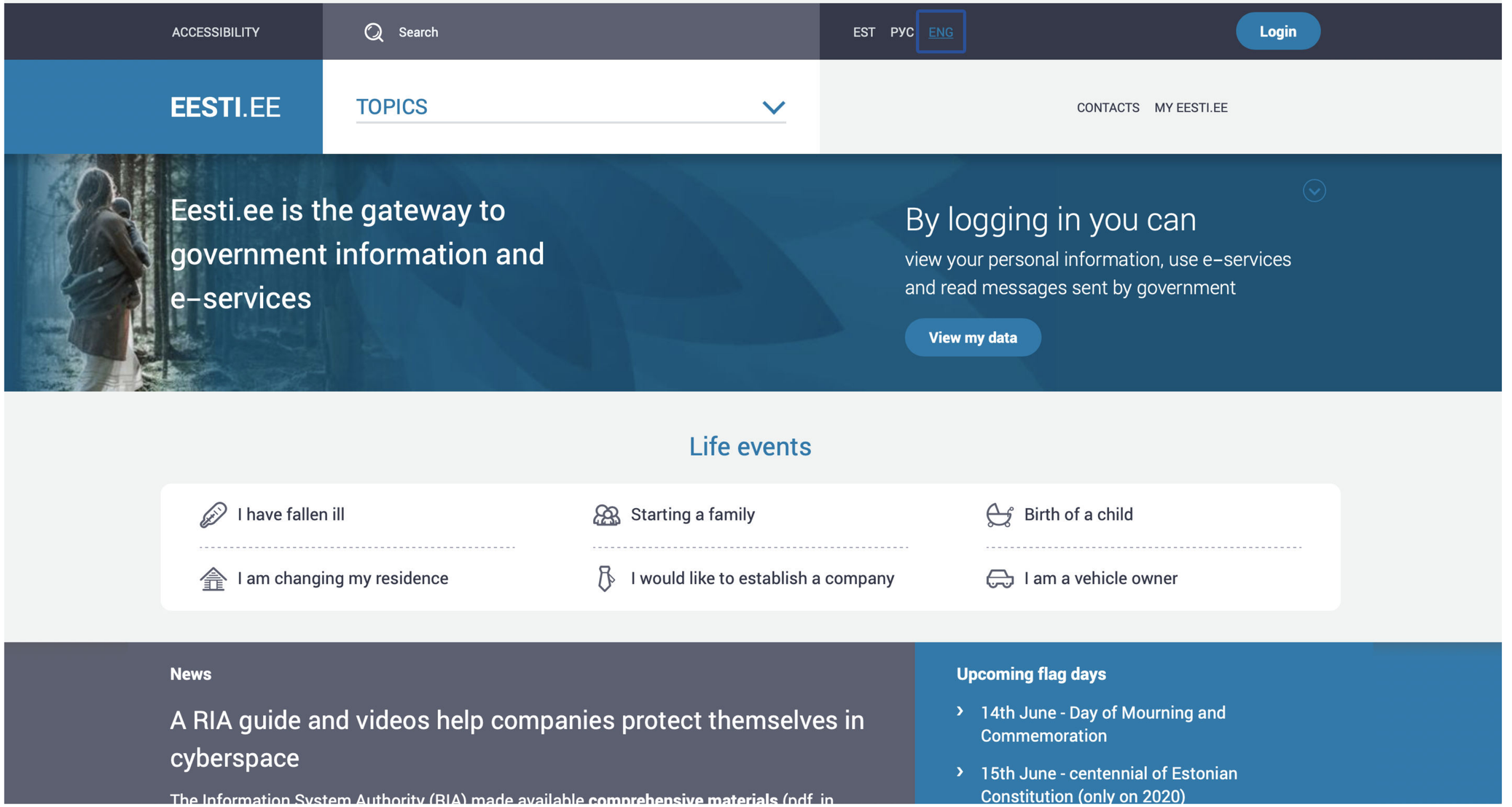
Strong Digital Identity

Secure Data Exchange

**Portal & Citizens Applications**

Digital Data Accessible

# Estonian national service portal

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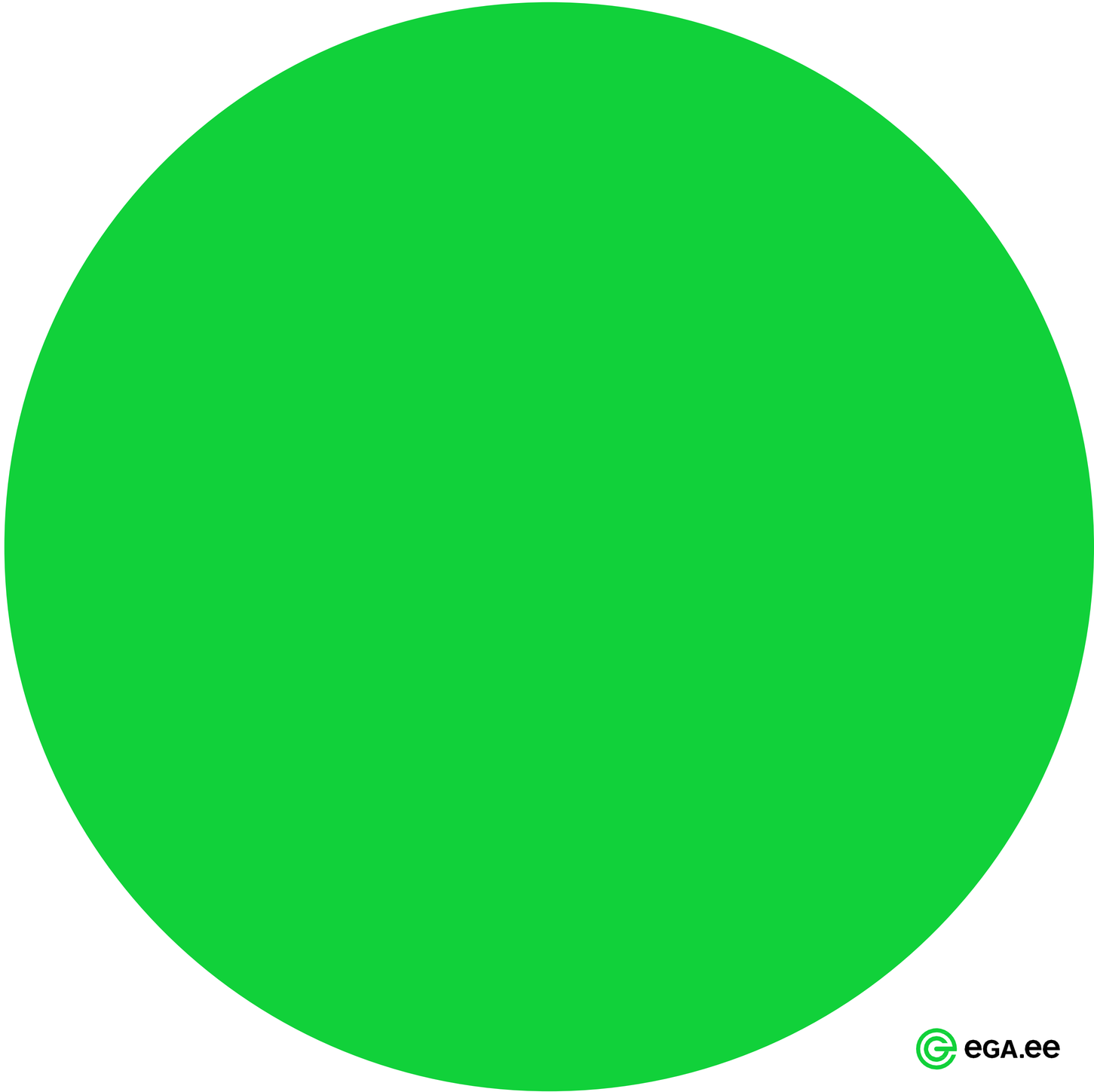
# How & by Whom the Online Services in the Government are Developed?



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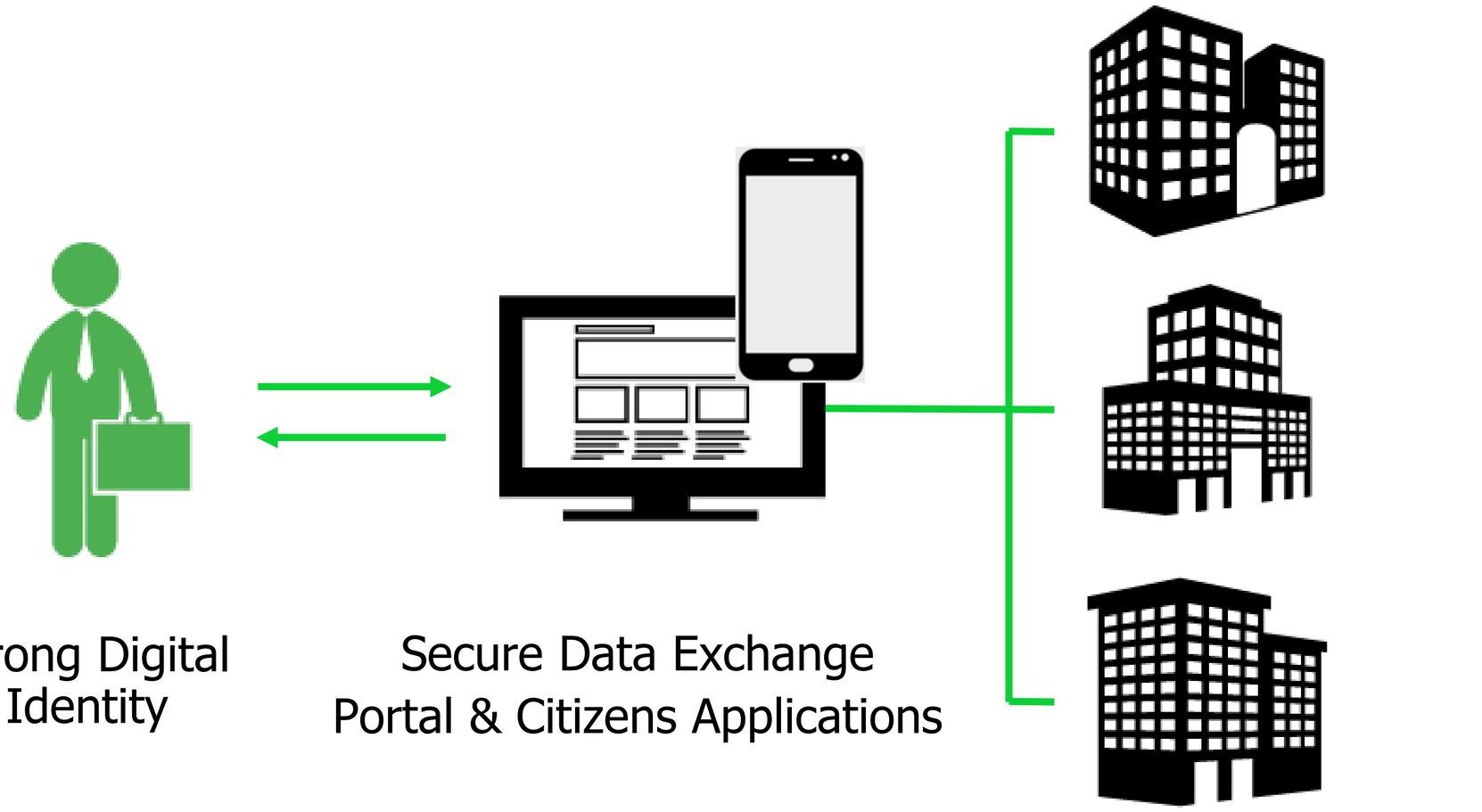
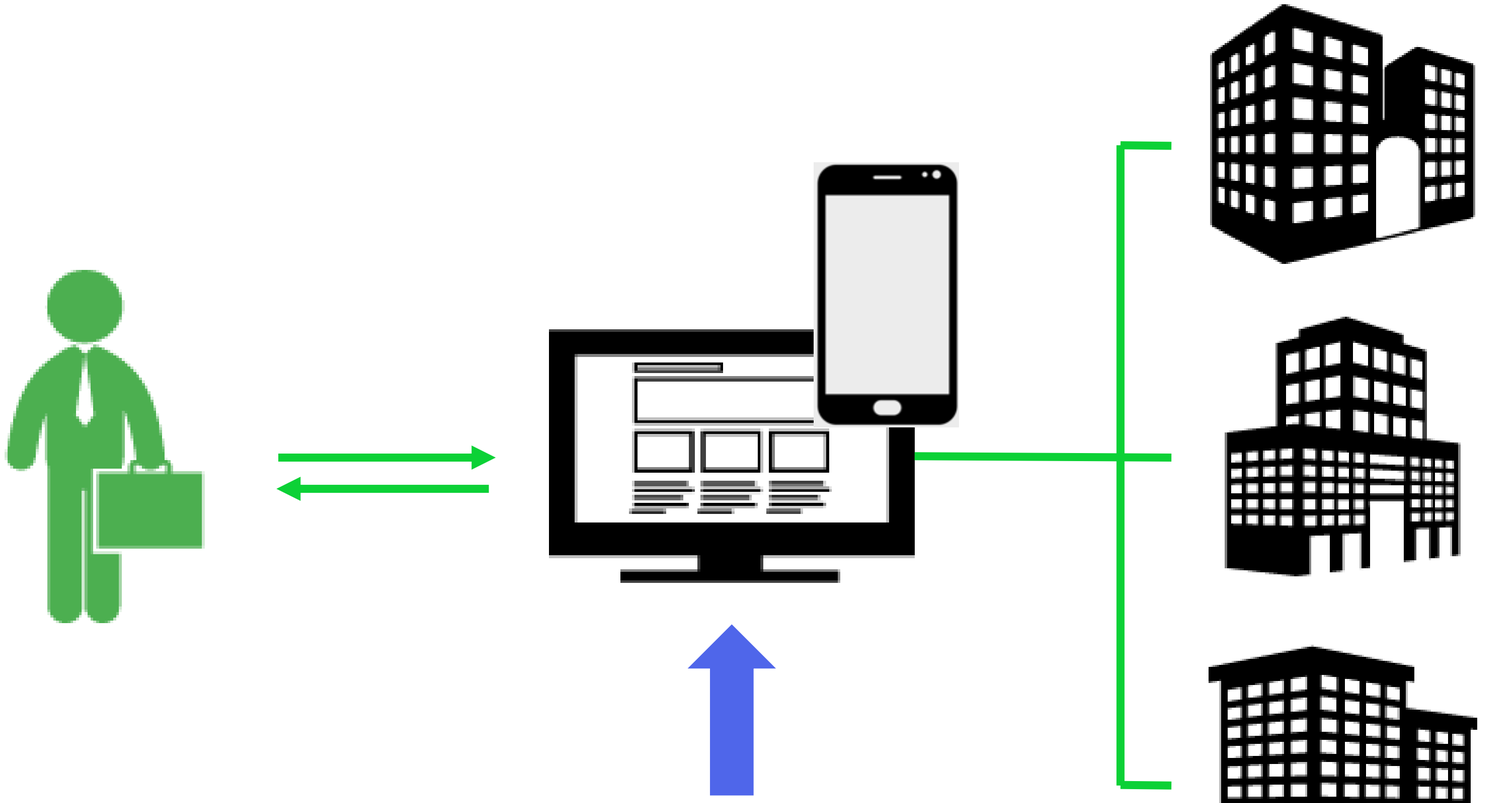
# Digital enablers



# Digital services developed by service owners



Digital services developed by
Ministries & Agencies & Municipalities

# Estonia in 2021

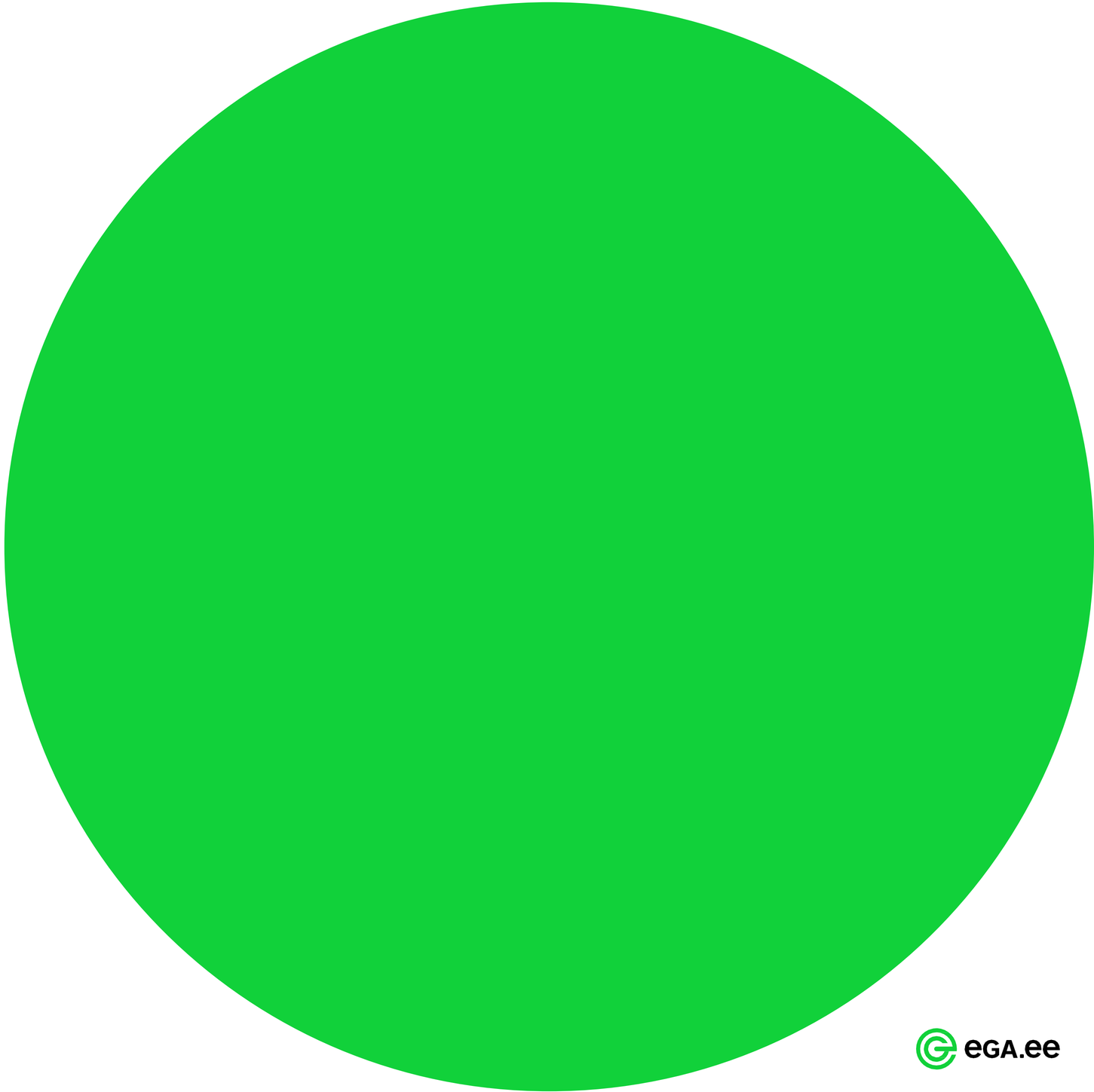
All services online, except:

- Marriage (probably soon)
- Divorce
- Real estate transactions

Reason is not technical, but

**to protect the citizen … from himself**

# Future of the online governance



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# The future government

**Proactive**

**Online**

**24/7**

**Intuitive**

# Government in smart phone

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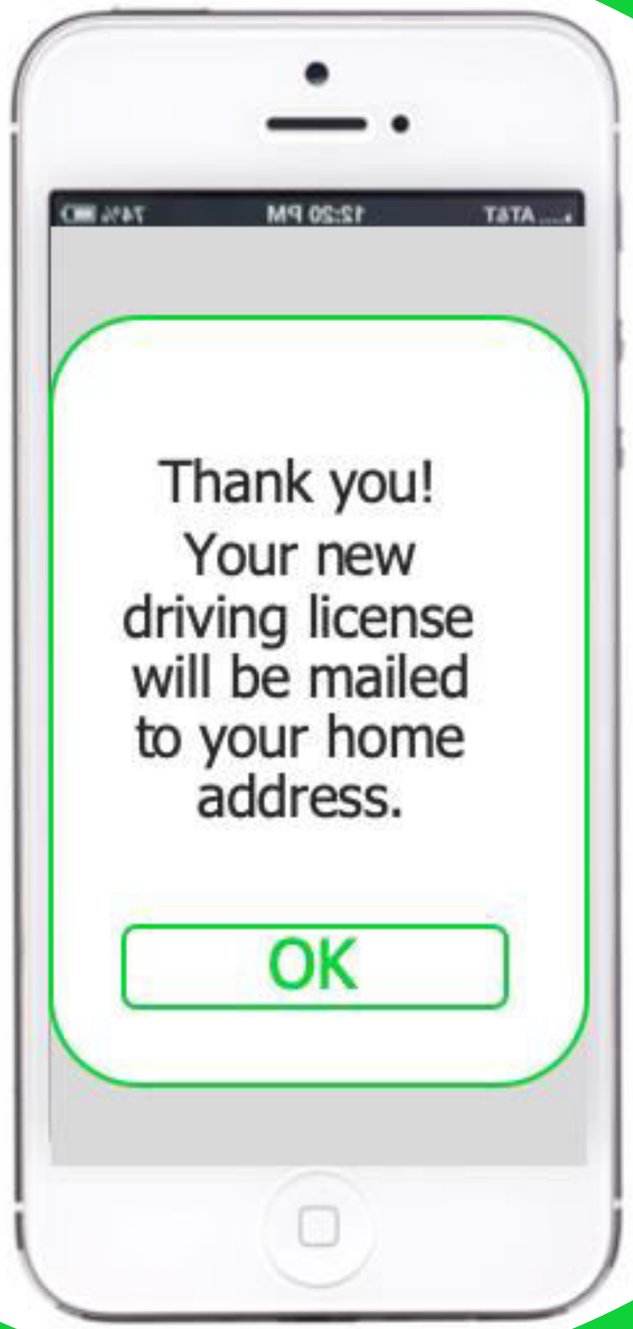
# Proactive service provision

# Proactive service provision



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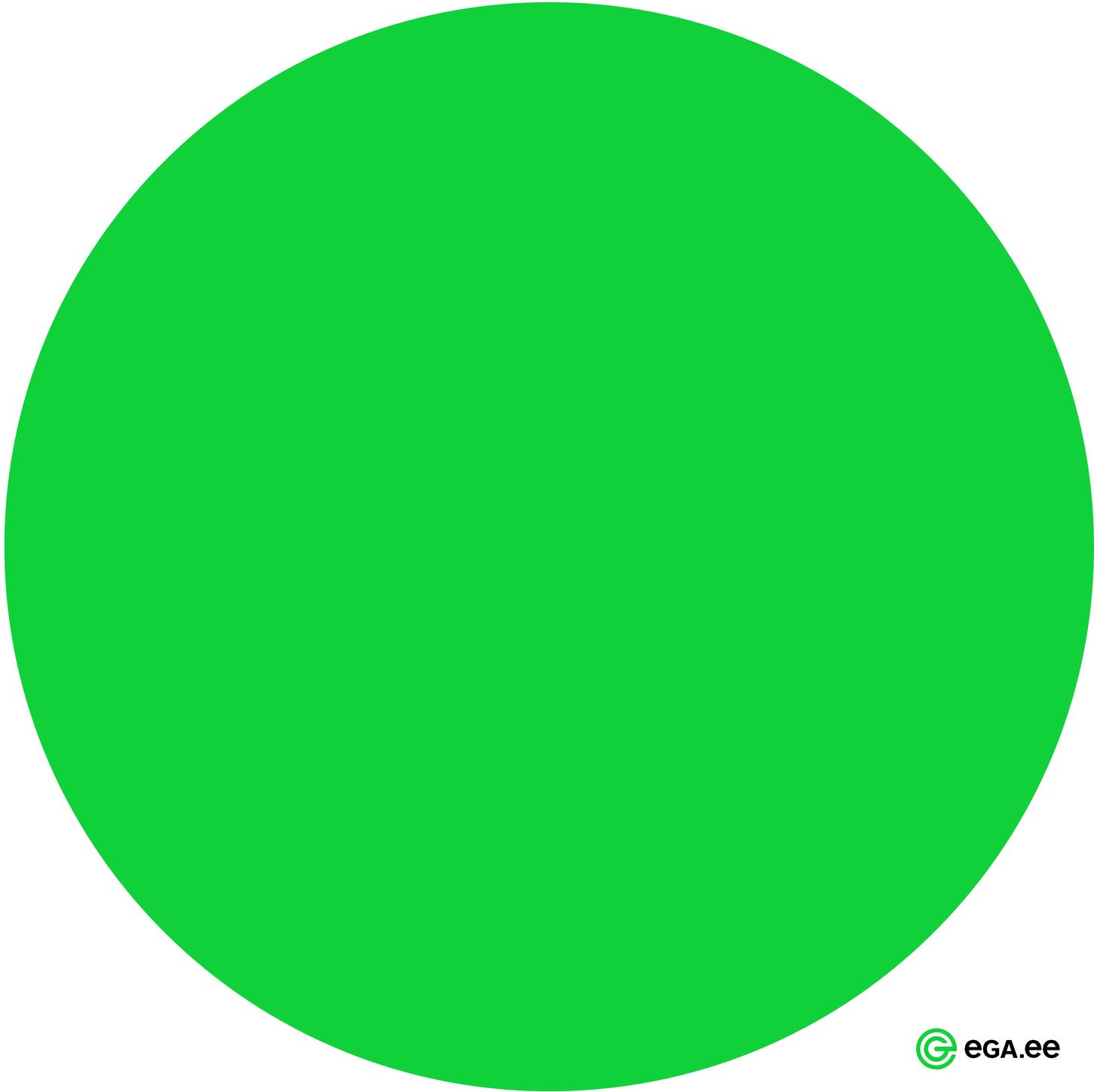
# Thank you!

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