

National Cyber Security



Raul Rikk
Head of National Cyber Security Domain



Cyber Security
Influencing Factor 1:
**Information Society
development 91-07**



- e Banking since the 1990s
- e Cabinet since 2000
- e Tax Board since 2000
- e School since 2003
- e Voting since 2005
- e Police since 2005
- e Business since 2007
- e Health since 2008

Over 2000
e-services



Networked
systems demand
comprehensive
security

Main security measures

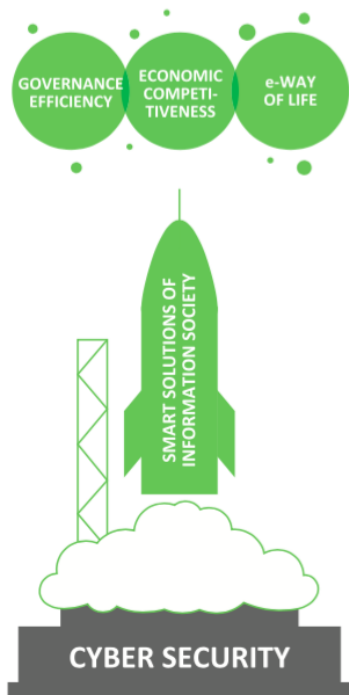
2001 X-road Connected
Databases

2002 Digital Signature System

2003 Information Security
Standard

2005 NATO CCDCOE

2006 National CIRC



**Secure data exchange
& unified digital identity**
have been the enablers of
Estonian digital innovation

Legislation

Public Information Act

State Information System's Management System
Information Systems' Data Exchange Layer (X-road regulation)
System of Security Measures for Information Systems

State Secrets and Foreign Classified Information Act

Personal Data Protection Act

Digital Signatures Act

Procedure for Auditing Certification Service
Provider's Info Systems

Electronic Communications Act

Emergency Act

Cyber Security
Influencing Factor 2:
**Large-Scale Cyber
Attacks**



Attack against Estonian cyberspace in 2007



Origin

Pros and amateurs via 178 countries

Methods

DDoS attack, defacement, spam

Targets

IPS, GOV institutions, e-services, .ee

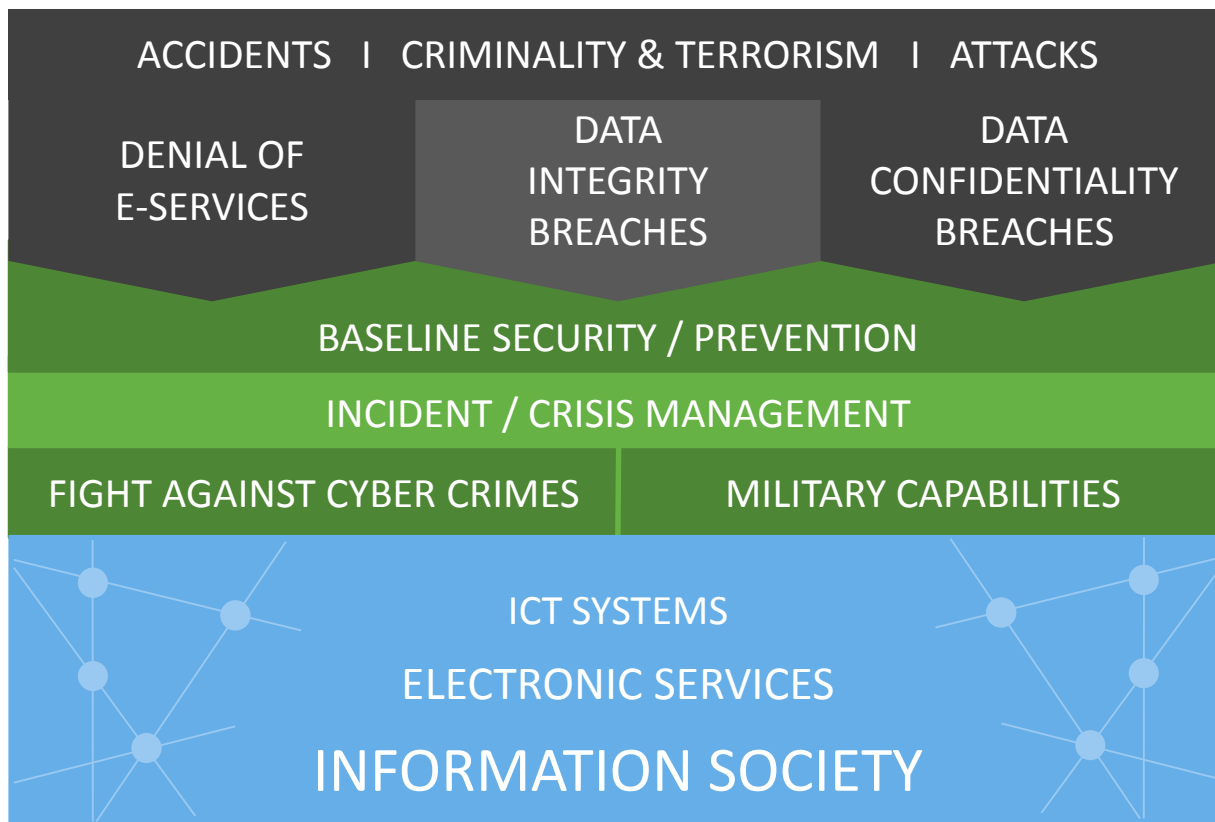
Effect

Communication disruption, e-banking stopped, dissemination of misinformation

Defence

Traffic filtering, increasing of networks capacity, international attention





Cyber Incident Statistics in Estonia



Estonian cyberspace:



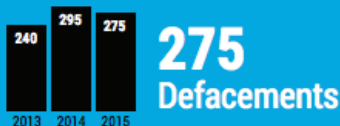
5809
Cases handled



55
DDoS attacks



150
Encrypting ransomware cases



275
Defacements



Governmental agencies:



402
Incidents reported by governmental agencies

Most common causes:

- attack
- software
- external service provider
- administrator error



27%
Reported incidents were high criticality (20% in 2014)

Security must
be coordinated



Conceptual framework

People
Documents
Objects



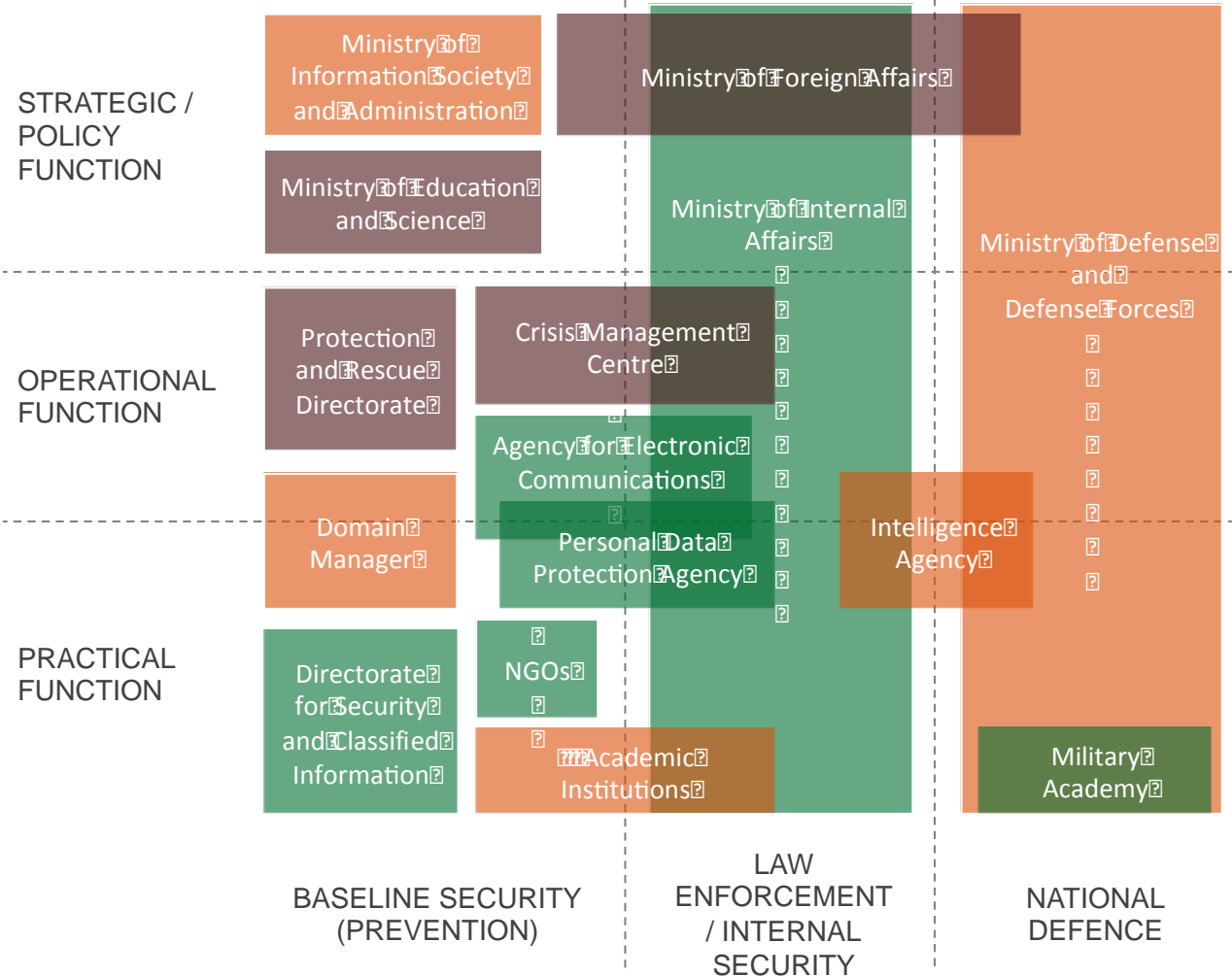
Information
Security

Connected
electronic
systems

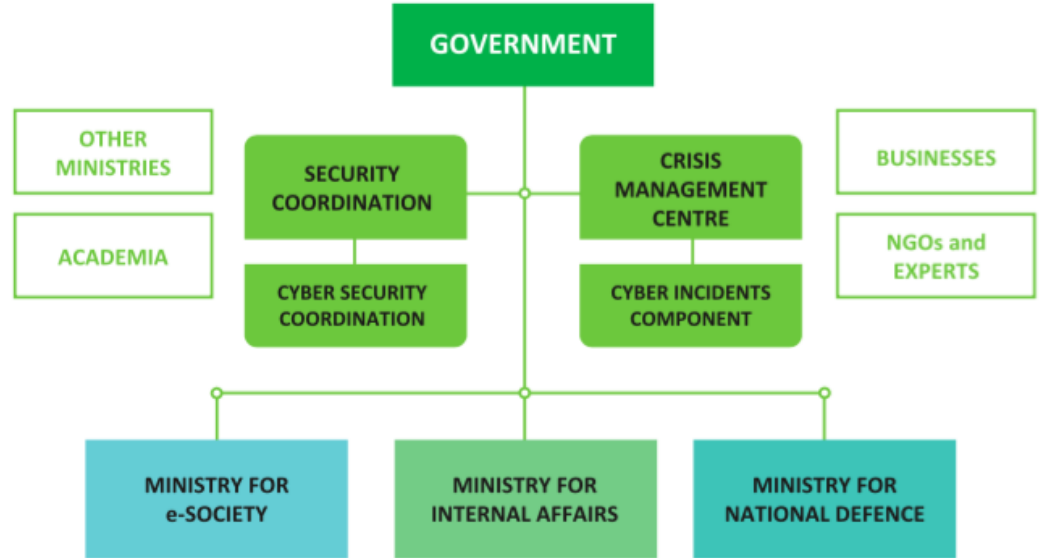


Cyber
Security

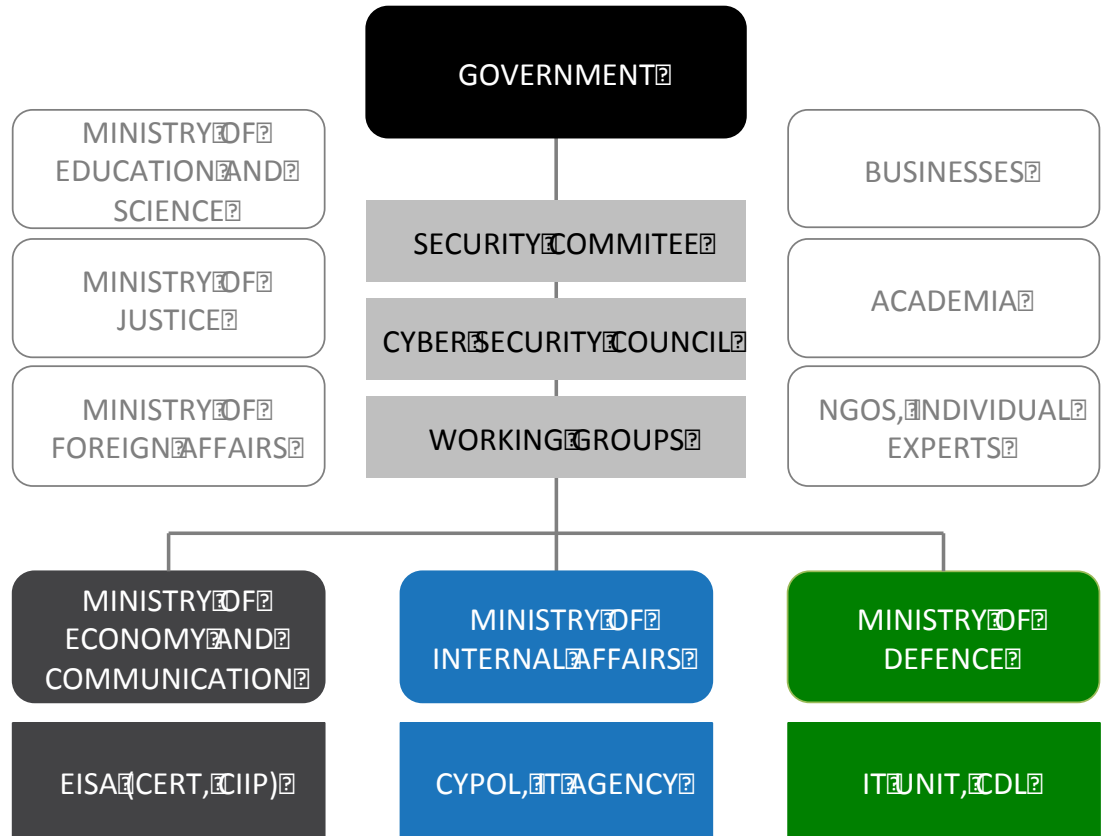
Roles are not shared



Organisation



Organisation



Main security measures

2008 National Cyber Security
Strategy

2009 Emergency Act

2009 National Cyber Security
Council

2009 CIIP unit

2011 Information System Authority

2011 Cyber Defence League

2013 Cyber Security Managers

Comprehensive Capacity Development

ncsi.ega.ee

General Capacities	1. POLICY DEVELOPMENT 2. THREAT ASSESSMENT 3. EDUCATION
Baseline Capacities	4. BASELINE SECURITY 5. E-SERVICES SECURITY 6. E-IDENTITY & E-SIGNATURE 7. CIIP
Incident and Crisis Management Capacities	8. CIRC 24/7 9. CRISIS MANAGEMENT 10. FIGHT AGAINST CRIMES 11. MILITARY CAPABILITY
International	12. INTERNATIONAL INFLUENCE

Cyber Security Influencing Factor 3: Cyberspace development and Modern Cyber Attacks



Edward Snowden 2013



The Guardian

NSA Prism program taps in to user data
of Apple, Google and others

Der Spiegel

USA may have been surveilling
Merkel's calls over 10 years

The International Business Times

Snowden reveals Microsoft PRISM
Cooperation: Helped NSA Decrypt
emails, chats, Skype conversations



Ashton – Paet phone call 2014



Estonian Minister of Foreign Affairs

High Representative of the
European Union for Foreign
Affairs and Security Policy



 Umas
Paet



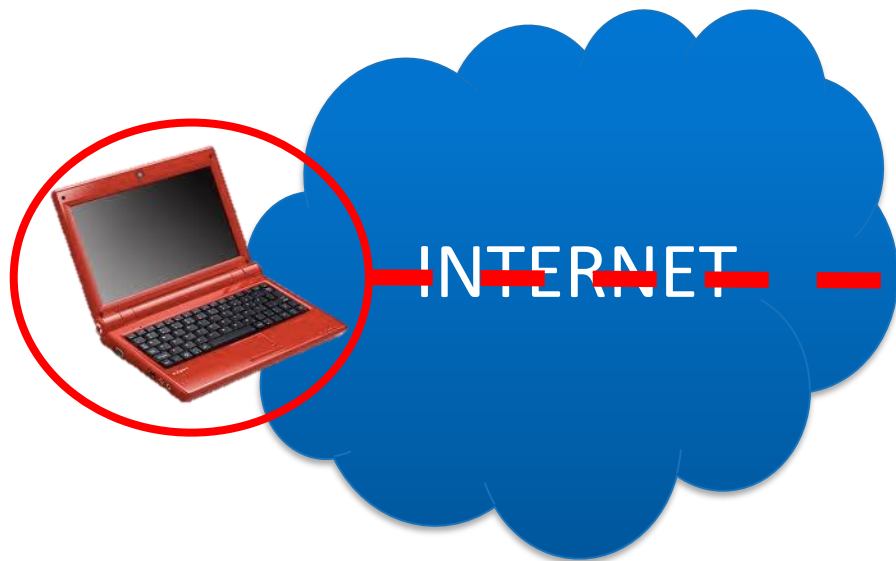
Catherine
Ashton

U.S. elections in 2016

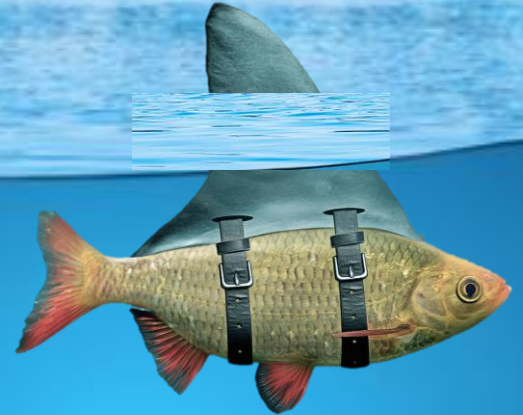


Office network

Control center



How to create a
relevant threat
picture?



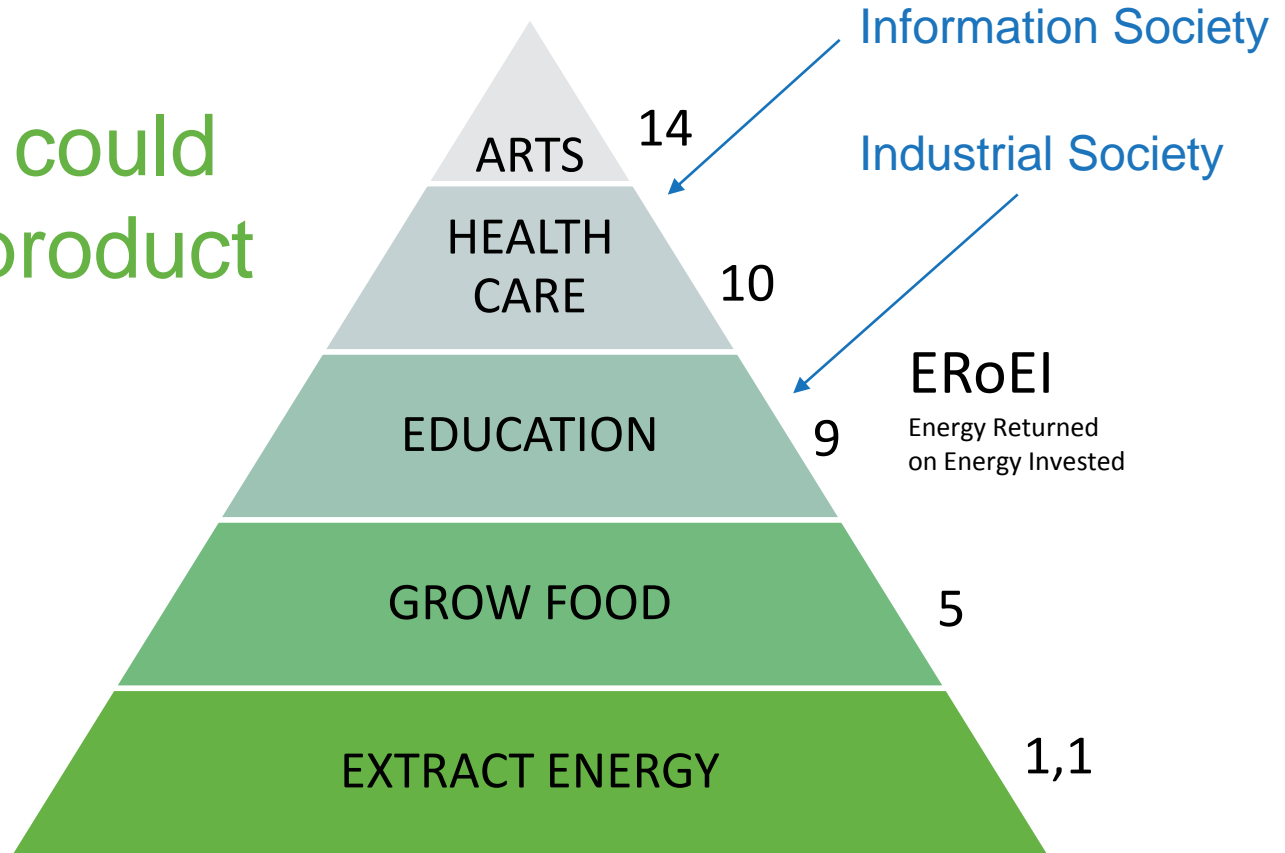
How to handle complexity?



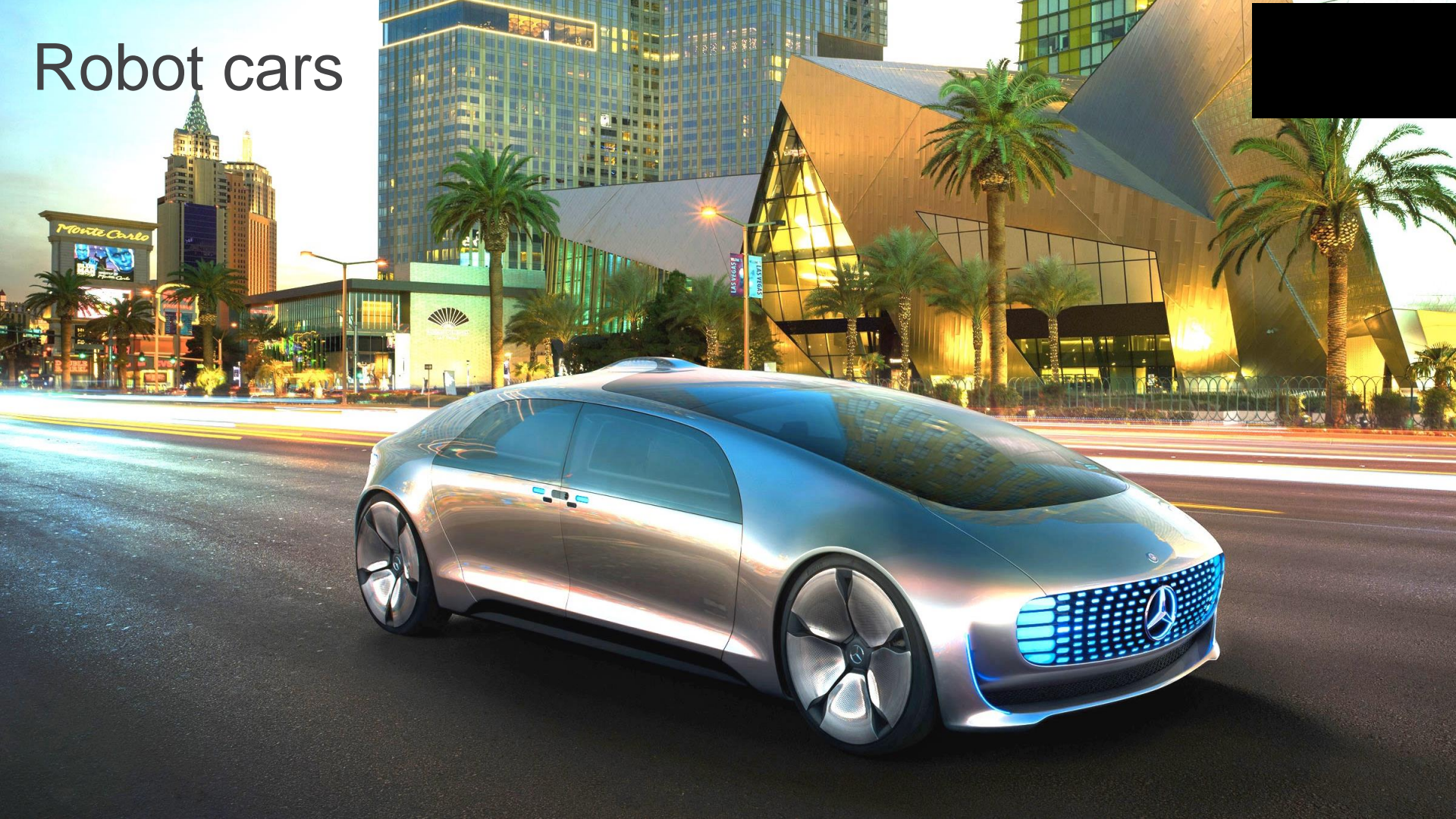
How much complexity can a society afford?



Complexity could
be a luxury product



Robot cars



Thank You

e-Governance Academy
Tõnismägi 2, Tallinn, Estonia
www.ega.ee



Raul Rikk
Head of National Cyber Security Domain
raul.rikk@ega.ee

