



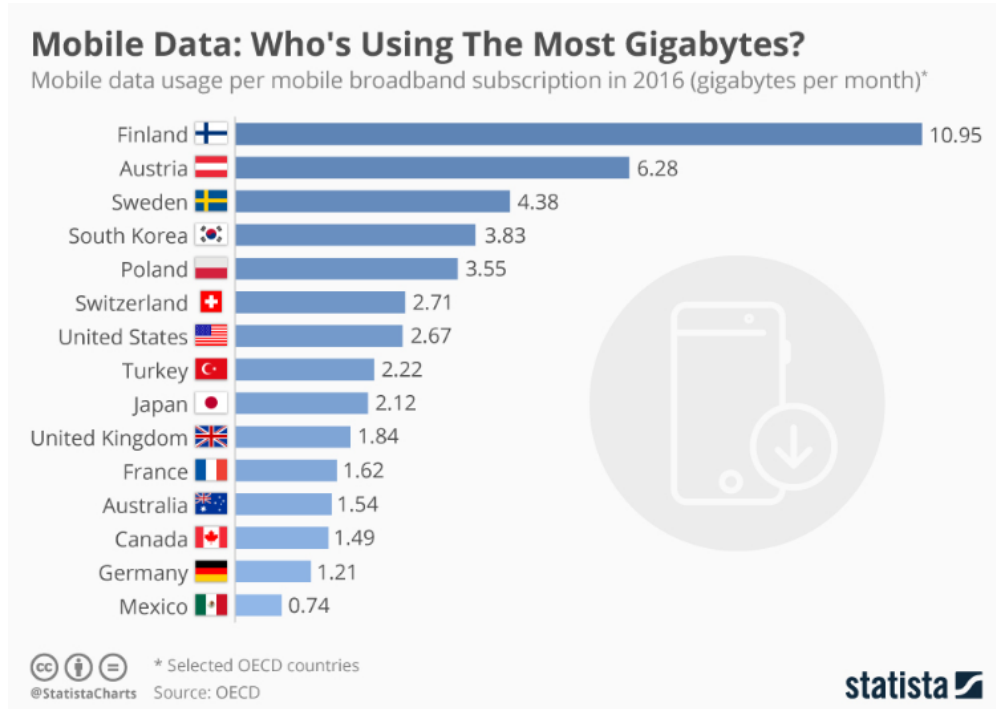
How we secure cyber space

GIoTS Industry Forum III: Cybersecurity & IoT



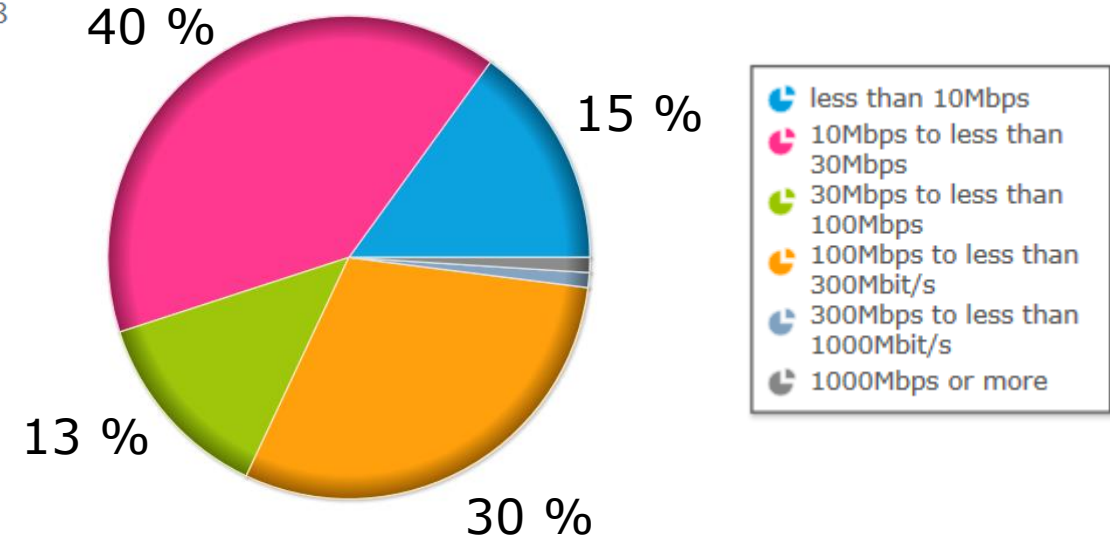
Our operating environment

Over 210 registered telecommunications operators (February 2018)



Fixed-line broadband subscriptions by connection speed

Updated 21.03.2018



- » 88 % of Finns read news online (EU28, 70 %)
- » 93 % use online banking services (EU28, 58 %)
- » 62 % feel that they are well informed about risks of cybercrime (EU28, 46 %)

Special Eurobarometer 464a, Cyber Security, June 2017

World's safest networks?

– Mostly harmless at least

Businesses that have encountered IT security problems, 2010

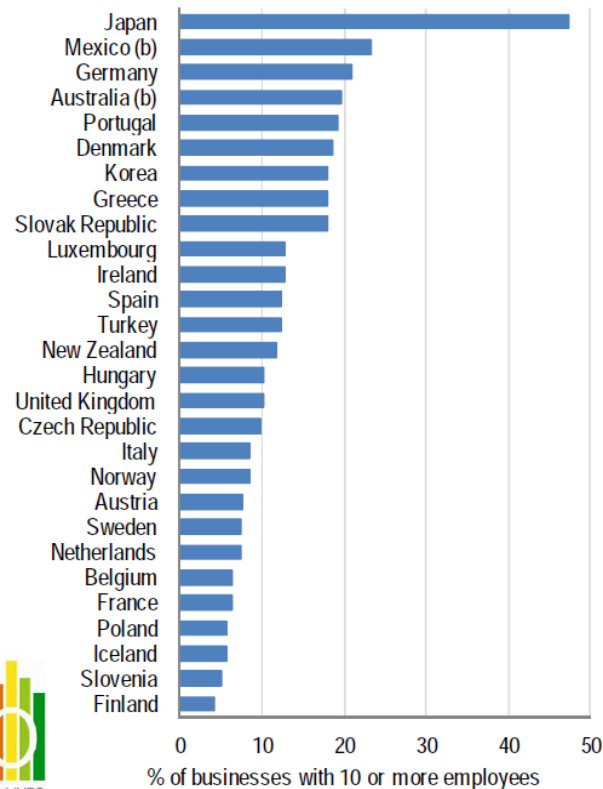
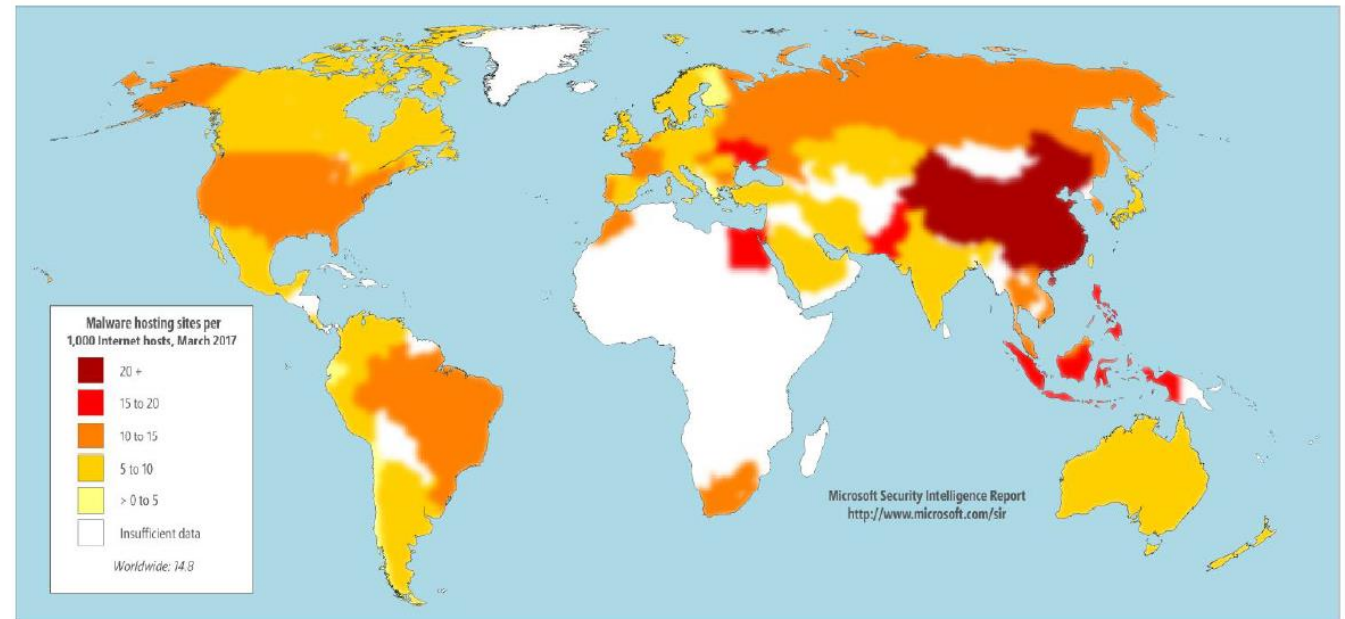


Figure 34. Malware distribution sites per 1,000 Internet hosts for locations around the world in March 2017



Microsoft SIR, March 2017: Locations with low concentrations of malware hosting sites included Finland (4.1), Taiwan (5.3), and Turkey (5.3).

NCSC-FI

Viestintävirasto

FICORA milestones

The Telecommunications Administration Centre

Radio Frequency
Administration,
Telecommunications
Administration, TV
licences

1988

Steering of postal
operations

1994

Fi-domain names

1997

Economic regulation

1998

Protection of privacy,
information security,
supervision of TV and
radio operations

1999

The Finnish Communications Regulatory Authority
(FICORA)

CERT-FI

2001

Handling of
undeliverable postal
items

2002

Short-term TV and radio
licences, supervision of
universal service

2003

Broadband 2015 project

2009

NCSA-FI

2010

The National Cyber
Security Centre
(NCSC-FI)

2014

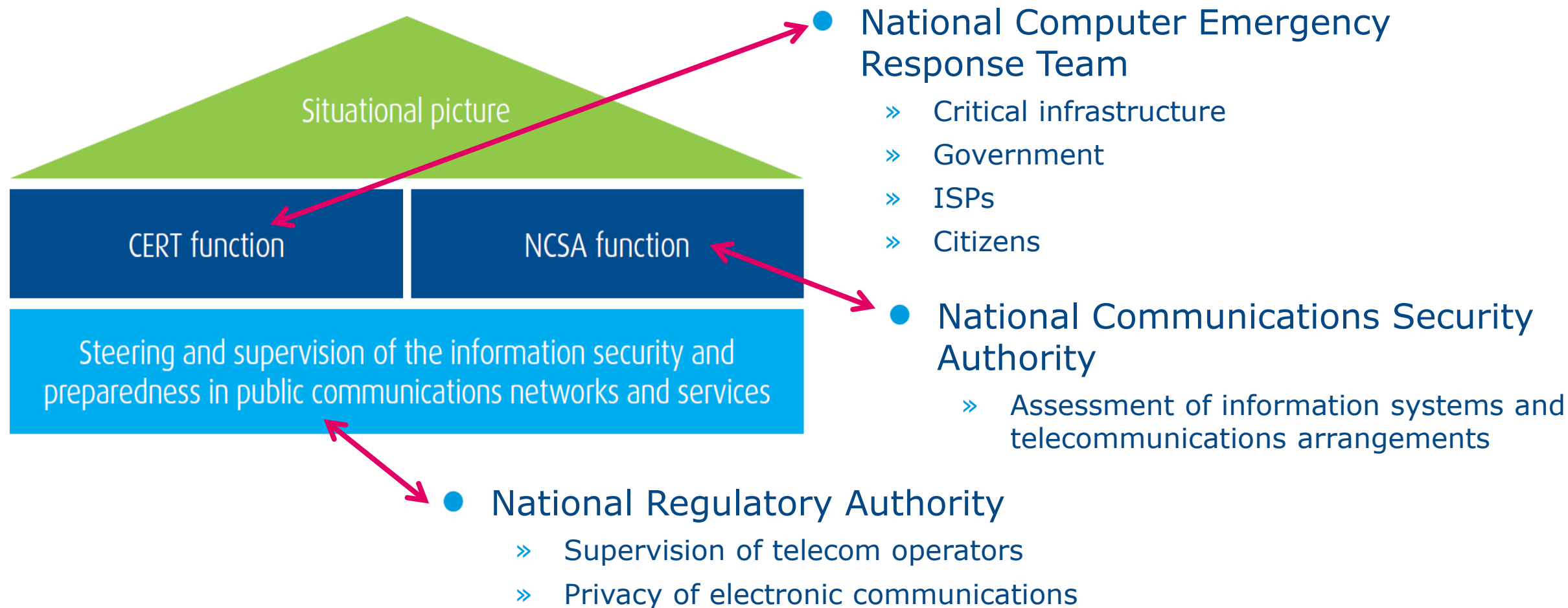
The Public Regulated
Service (PRS)

2014

Protector of the invisible world



Different roles support creating situational awareness and providing services to different customers



IoT definitely creates new threats

2020

6 billion internet users

50 billion devices



We all play a role

There is no single entity who can take care of cyber security for us all, we all must do our share

- As a manufacturer
 - » It is cheaper and less risky to make secure devices from the beginning
 - » Tell the customer what you've secured and what *they* need to secure
- As a network or service provider
 - » Protect your own assets and take care of your internet reputation
 - » Consider if and how you could protect your customers from malicious activities
- As a user
 - » Use new devices and try new services but do think how you can protect yourself
- As NCSC-FI
 - » We exist to help

Behind our success: Pure luck or something smarter?



**Secret
Sauce**

- Yes, we are a regulator, but we see ourselves also highly as a service organization
 - » CERT and NCSA functions are easy for everyone to see as a service
 - » It is good to remember that also NRA serves the whole society
 - » Our mindset is to provide positive support to the community
 - Focus is, what can we give, not what we can get
 - Assistance first, compliance when storm has calmed
- Without data we're useless
 - » Telcos are obliged by law to report on specific incidents
 - » The rest tell us on voluntary basis
 - In practice, 99.9 % of all cases
 - » "World" expects us to mitigate the problem – "Finland" expects us to provide help

Behind our success: Pure luck or something smarter?



**Secret
Sauce**

- Co-operation is essential
 - » Without a deeply networked community we would not be strong
 - » Sharing experiences and lessons learned creates a positive spin that will feed itself
 - » Will only function properly if a sufficient level of trust is established between the parties
- Information security legislation, sometimes seen as a restriction, is actually an enabler for us and the Finnish network owners
 - » Very strict law on privacy both at work & home, but also efficient tools for solving incidents



**Finnish Communications
Regulatory Authority**
National Cyber Security Centre

www.ncsc.fi
www.ficora.fi