DIGITAL TRUST FOR SAFE, SECURE AND PROSPEROUS SOCIETIES

6.10.2020 @Aalto Internet Forum

Kirsi Kokko
Head of Digital Trust Finland
Business Finland

BUSINESS
FINLAND

STRATEGY 2025

FINLAND DEFINING THE FUTURE

FINLAND DEFINING THE FUTURE

Our strategy for 2025

BUSINESS FINLAND

PROSPERITY

	CUSTOMER	SOCIETY
Economic Growth	Globally thriving companies	Productive economy
Sustainability	Developers of new sustainable solutions and operations	Superpower in sustainable development
Competitiveness	Bold reformers of business	Attractive and resilient business landscape

-- PURPOSE ----------

We generate prosperity for Finland by accelerating our customers' sustainable growth globally.

-- VISION ----------

We excel at developing and refining the best of Finnish potential and matching it with global opportunities. We create world-class success stories.

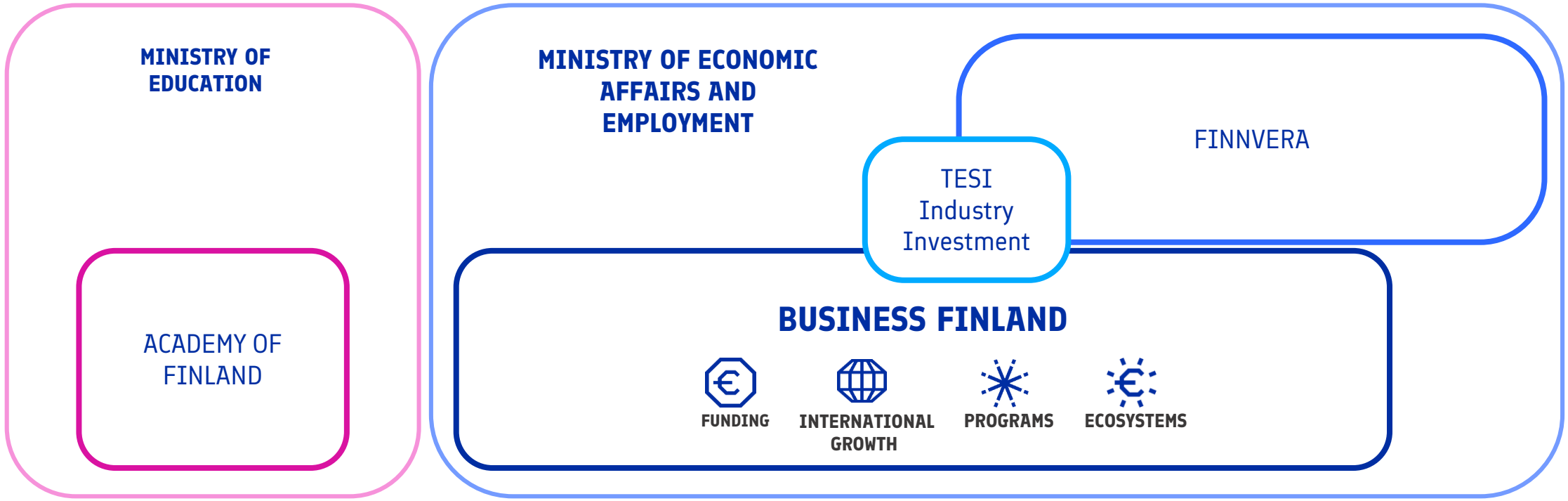
Strategic priorities

- Value-adding and proactive partner for our customers
- Strong and proactive actor in society
- Change agent for sustainable business
- Best workplace for leading-edge expertise
- Operationally excellent and agile organization

Values

- With passion
- All together
- Think big
- With sisu

FINNISH PUBLIC ACTORS PROVIDING INNOVATION FUNDING & SERVICES FOR COMPANIES



BASIC RESEARCH

APPLIED RESEARCH

BUSINESS R&D

BUSINESS DEVELOPMENT
MARKETING
INTERNATIONALIZATION

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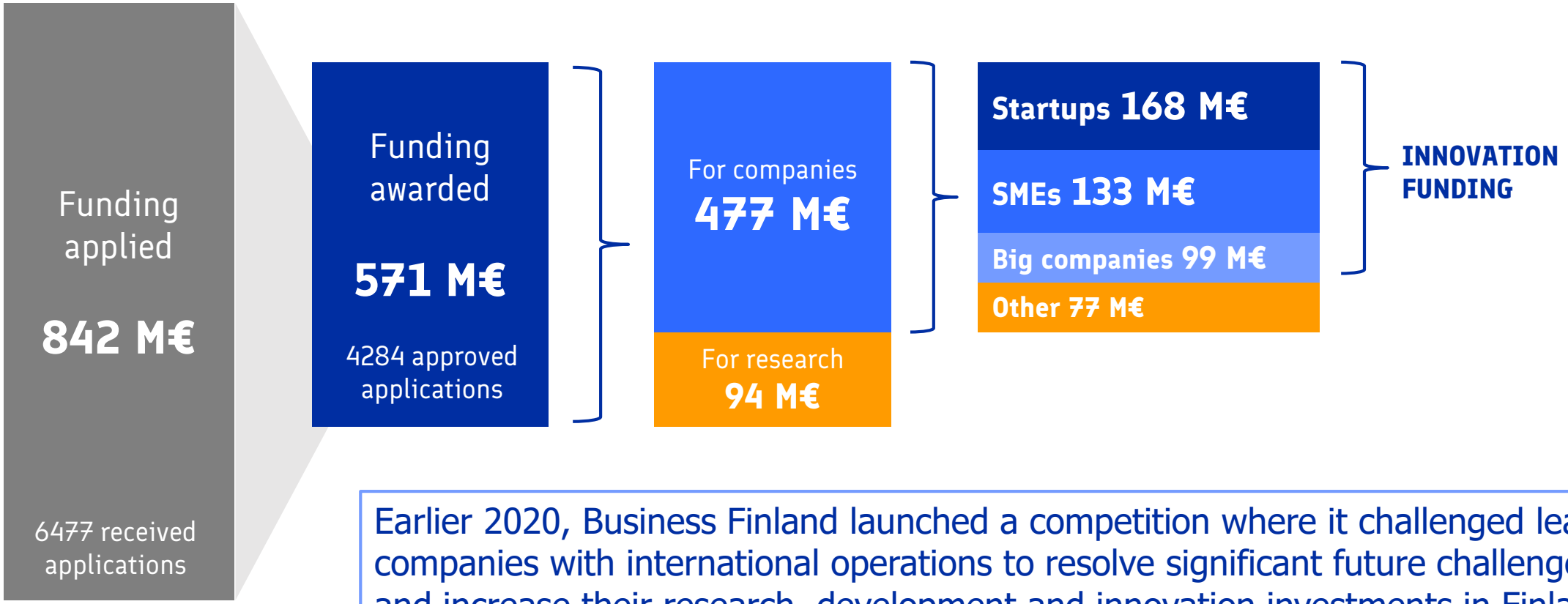
BUSINESS FINLAND'S FUNDING IN 2019



Earlier 2020, Business Finland launched a competition where it challenged leading companies with international operations to resolve significant future challenges and increase their research, development and innovation investments in Finland.

www.businessfinland.fi/en/whats-new/news/cision-releases/2020/the-winners-of-business-finlands-challenge-competition-for-leading-companies-will-create-hundreds-of-new-jobs/

FINNISH APPROACH TO THE FUTURE SOCIETY

We make the world **safe**, **connected**, **intelligent** and **convenient** with new digital solutions, business models and ways of working. We have the abilities to transform industries to be **competitive** in the global markets and the society to be **sustainable** as well as **functional** for its citizens.

We strive for a **smart**, **safe** and **sustainable** society.

BUILDING BLOCKS OF THE FINNISH APPROACH

DIGITAL SERVICES

MOBILITY

BUILT ENVIRONMENT

ENERGY WITH WATER & WASTE

DIGITAL INFRASTRUCTURE & OPEN PLATFORMS ECONOMY

EDUCATION

HEALTH

TRAVEL

PORT

MANU-FACTURING

EVERYTHING IS CONNECTED IN FINLAND

From traffic lights to the electricity grid, connected infrastructure supports innovative digital solutions across all main sectors of the economy.

WHEN EVERYTHING IS CONNECTED...

Safety and security is more important than ever.
That's why it needs to be built into the design of products,
services, processes and systems from the beginning.

WHY FINLAND?

FINLAND IS A SAFE, SECURE AND TRANSPARENT SOCIETY. WE ARE ALSO ONE OF THE GLOBAL LEADERS IN CYBERSECURITY.

NATIONAL CYBERSECURITY STRATEGY SETS STRATEGIC BASE

SOUND REGULATORY FRAMEWORKS

ACTIVE COLLABORATION WITH PUBLIC AND PRIVATE STAKEHOLDERS

TOP RESEARCH IN FOCUS DOMAINS

WORLD-CLASS ICT AND CYBERSECURITY COMPANIES

LEADING BY EXAMPLE

Finland's strong tech expertise, high education level and vibrant startup scene contribute to an attitude of innovation, putting us at the forefront of digitalization, communication technologies and smart & clean technologies. The Finnish cyber-security scene is outlined by the National Cybersecurity Strategy.

WORKING TOGETHER

A flourishing company ecosystem, combined with a stable and ICT-oriented society, supportive legislation and strong support for data privacy, makes Finland the ideal country for cyber and information security businesses. In all, the country offers reliable and transparent ways of working.

USING THE LATEST TECHNOLOGY

Finland is one of the leading countries in data privacy and threat prevention solutions and identity management. We are known for many fundamental cybersecurity technologies essential to cyber and information security.

#1

IN AVAILABILITY OF LATEST TECHNOLOGIES

WORLD ECONOMIC FORUM GLOBAL COMPETITIVE INDEX 2017–2018

#1

IN DIGITAL COMPETITIVENESS IN THE EU

DIGITAL ECONOMY AND SOCIETY INDEX 2019

#1

THE MOST STABLE COUNTRY IN THE WORLD FOR THE 14TH YEAR IN A ROW

BY THE FUND FOR PEACE, FRAGILE STATES INDEX 2019

#1

IN BEST BUSINESS ENVIRONMENTS IN THE WORLD

GLOBAL INNOVATION INDEX 2019

#3

IN MOST INNOVATIVE COUNTRIES IN THE WORLD

BLOOMBERG INNOVATION INDEX 2019

FINNISH CYBERSECURITY **RESEARCH LANDSCAPE**

TRUST AND REPUTATION SYSTEMS
SECURITY ANALYSIS
QUANTUM-SAFE CRYPTOGRAPHY
BEYOND 5G COMMUNICATIONS SECURITY
SECURITY ISSUES FOR SOCIETY
SOFTWARE SECURITY ASSURANCE
NETWORK ATTACKS AND DATA ANALYSIS
SECURITY OF THE INTERNET OF THINGS
CONTEXTUAL SECURITY
CYBER RANGES AND TRAINING
SECURITY METRICS
BIOMETRIC RECOGNITION
MOBILE PLATFORM SECURITY
SECURITY MONITORING AND ENFORCEMENT
CYBERSECURITY MANAGEMENT

IDENTITY AND ACCESS MANAGEMENT
SECURITY OF AUTONOMOUS SYSTEMS AND TRAFFIC
SECURITY AND PRIVACY BY DESIGN
SOFTWARE SECURITY TESTING
CYBER AND NETWORK SECURITY

Aalto University
JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ
jamk
UNIVERSITY OF OULU
Tampereen yliopisto
Tampere University
UNIVERSITY OF TURKU
UNIVERSITY OF HELSINKI
Centria
UNIVERSITY OF APPLIED SCIENCES
LAUREA
AMMATTIKORKEAKOULU
University of Applied Sciences
UNIVERSITY OF EASTERN FINLAND
XAMK
South-Eastern Finland University of Applied Sciences
TURKU AMK
TURKU UNIVERSITY OF APPLIED SCIENCES
VTT

DIGITAL TRUST VISION 2025

Digital Trust Finland will enable multi-billion business through development of safe and cybersecure solutions

5 years

during 2019-2024

100 MEUR

public funding

Allow nation states to achieve digitally trustworthy societies

Create new industry driven ecosystems and global multi-billion business boosted by research

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INCREASE AWARENESS - MARKETING

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www.businessfinland.fi/en/for-finnish-customers/services/programs/digital-trust-finland/

DIGITAL TRUST CHALLENGE

Themes

- Industrial cybersecurity
- Critical Infrastructure
- Critical communication (e.g. AI)
- Technology development of cybersecurity
- Quantum computing and cybersecurity

Goals: Accelerate new ideas that lead to co-innovation projects, inputs to EU calls e.g. Horizon Europe.

New, more innovative and competitive ecosystems

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CO-INNOVATION

PRIORITY

The focus areas of the project are

- Application of commercial 5G technology for public authorities' communication needs
  - Hybrid commercial/dedicated solutions
  - Special requirements on availability, reliability, quality, security
- Research the applicability of authorities' solutions for business use

The expected outcomes are

- New and evolved ecosystems in the area of critical communication (Public Safety)
- Technical solutions to be further developed into products
- Resulting in growing international business for the participants
- The next capability level in public authorities' critical communication

AIRBUS Bittium DIGITA elisa

Fairspectrum KEYSIGHT TECHNOLOGIES MTK

ERILLISVERKOT EXFO TURKU AMK OULUN YLIOPISTO

TRAFICOM Liikenne- ja viestintävirasto Verkotan VTT Centria TUTKIMUS JA KEHITYS

CO-INNOVATION – POST QUANTUM CRYPTO

PROJECT TARGETS

- Gain understanding how Finland can prepare for Quantum era
- Develop Finnish cryptography knowhow and skills further
- Strengthen national cybersecurity networks and forums in cryptology and in quantum technology
- Prepare interfaces (API) for Quantum Safe algorithms
- Create criteria and practices for certification of post-quantum products and services
- Improve Finnish technology sector vendors in export struggles
- Improving international cooperation also outside of academia

VTT
SSH.COM
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HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI
SECTRA
DIGI- JA VÄESTÖTIETO-VIRASTO
advenica
TRAFICOM
Puolustusvoimat
The Finnish Defence Forces

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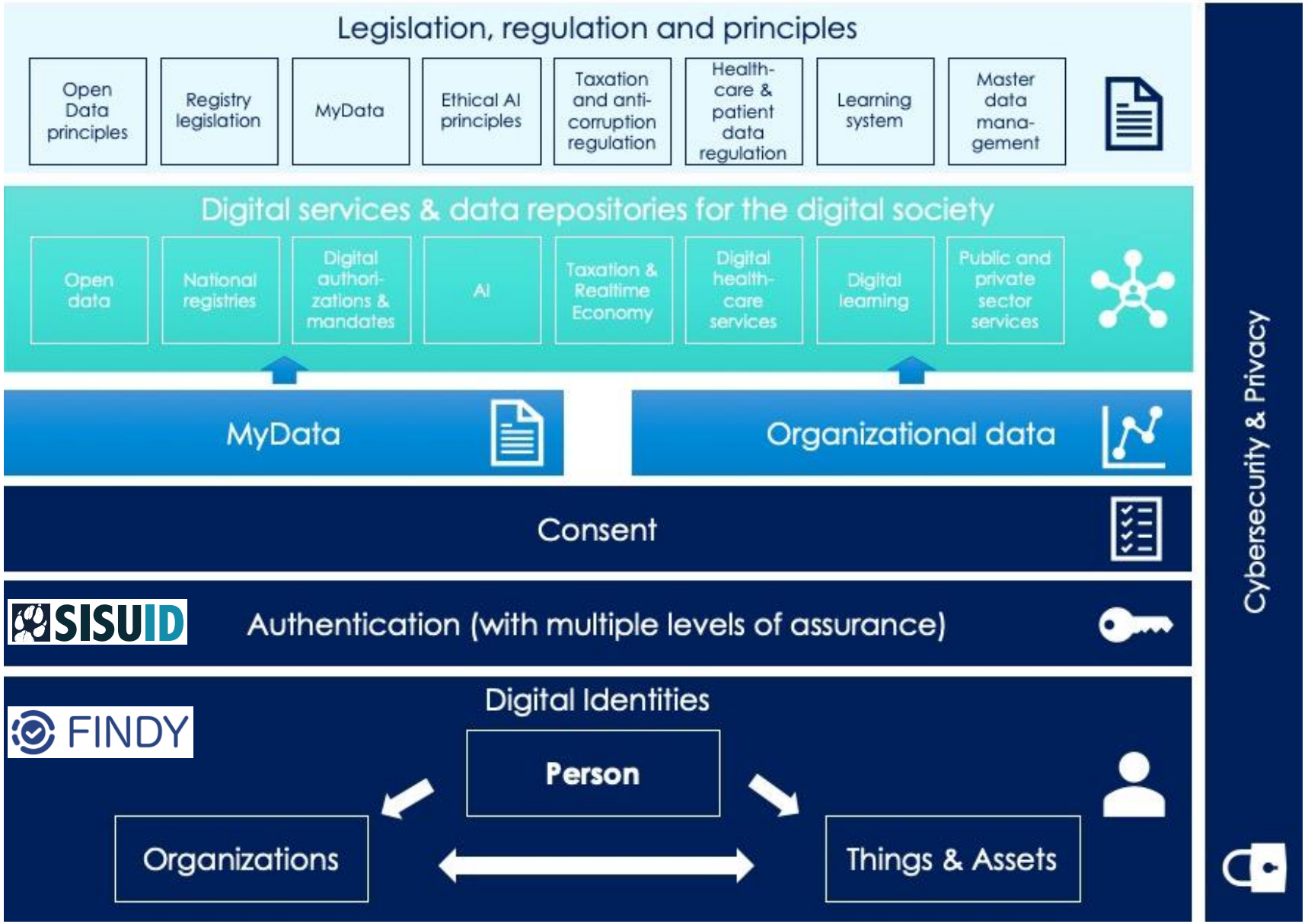
Press Release 1.6.2020 (FIN 28.5.)
https://www.businessfinland.fi/en/whats-new/news/2020/post-quantum-cryptography-project-develops-quantum-secure-encryption-technology/#e333750e

OPEN PLATFORMS ECONOMY, DISTRIBUTED SET OF MICRO SERVICES AND TRUST

- Shared data can create much new value - ”One man’s trash is another one’s treasure”
- When there is a wide set of co-operating partners with shared services (Uber, AirBnB, …) and data, there will be also new kind of error possibilities
- Can one trust others ie. potential partners in the service network?
- Who has the data, who can use it and how? What is the newest, the current data?
- GDPR and MyData. Can you trust the government and authorities?
- What is the service level (SL) of the system if the system uses 50 services with SL 99%?
  → 0.99^50 = 0.605
- How about 3rd party services and regulated software e.g. in healthcare?

BUILDING BLOCKS OF DIGITAL TRUST



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Picture source: Findy.org

EU – STATE OF THE UNION, SEPT. 2020
President Ursula von der Leyen

We must make this Europe's Digital Decade

- We need a common plan for digital Europe with clearly defined goals for 2030, such as for connectivity, skills and digital public services. And we need to follow clear principles: the right to **privacy and connectivity**, freedom of speech, **free flow of data and cybersecurity.**
- But **Europe must now lead the way on digital** – or it will have to follow the way of others, who are setting these standards for us. This is why we must move fast.

There are three areas on which we need to focus

- First, **data.** We will build a **European cloud** as part of NextGenerationEU - based on **GaiaX.**
- The second area we need to focus on is **technology** - and in particular **artificial intelligence.** That is why the Commission will soon propose a secure European **e-identity.**
- The third point is the **infrastructure**. "In this spirit, I am pleased to announce an investment of 8 billion euros in the next generation of **supercomputers** - cutting-edge technology made in Europe. And we want the European industry to develop our own **next-generation microprocessor** that will allow us to use the increasing **data volumes energy-efficient and securely**."

Source: ec.europa.eu/commission/presscorner/detail/en/SPEECH_20_1655 Speech / von der Leyen

INFRASTRUCTURE FOR EUROPEAN DATA SPACE

- European data strategy in February 2020
- GAIA-X is an initiative started a year ago in cooperation by France and Germany to give birth to European data sharing infrastructure
- European trusted and federated cloud solution
- Uses existing solutions as much as possible
- Initiative has gathered in fast speed around 300+ companies and other players
- Industrial ministries of Germany and France are ‘patrons’ of the effort
- GAIA-X foundation established as an AISBL in Belgium on 15.9.
- Follow www.GaiaX.fi and www.data-infrastructure.eu/ for more information

GAIA-X
FOR FINLAND

THANK YOU!

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LINKS

Digital Trust Finland Program and Business Finland

https://www.businessfinland.fi/en/for-finnish-customers/services/programs/digital-trust-finland/

https://www.businessfinland.fi/en/for-finnish-customers/home/

E-Books of Finnish Cyber Security and Public Safety

https://www.magnetcloud1.eu/b/businessfinland/BF_Cyber_Security_0307-ebook/

https://www.magnetcloud1.eu/b/businessfinland/PublicSafetyFromFinland_ebook/

GaiaX

www.gaiax.fi and www.data-infrastructure.eu/