

# Impact review 2025

CSC – IT Center for Science

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# Introduction

CSC's core mission is to support the research and education community as well as partners in the public and private sectors in achieving success. Our sustainability is grounded in our ability to generate positive impacts for society through our customers and the users of our services.

This impact review describes how we create value together with our customers and partners.

The value creation model illustrates how CSC's expertise, services and collaboration networks are transformed into knowledge, solutions and benefits for society.

The model is complemented by six impact stories. These stories provide concrete examples of how, together with our customers and partners, we build digital solutions for research, education and innovation activities – strengthening the competitiveness, knowledge base and green transition capabilities of society as a whole.



# How we create value

## OUR CAPITAL

### Our strengths are extensive cooperation and sharing of expertise

- Services steered by customers at all lifecycle stages
- CSC operates the Digivision 2030 project office for 37 Finnish higher education institutions
- Through our expertise, we support our customers' cooperations
- Extensive international and national networks

**67**  
EU-funded  
RDI projects

**64%**  
of the projects  
include a Finnish  
higher education  
institution or  
research institute

### We enable research and education

- Digital operating environment for research, education and cultural heritage
- We lead the consortium implementing the LUMI AI Factory
- We have expertise in data analytics and AI methods

Data management  
and computing  
service ecosystem  
that meets  
users' needs

### Reliable and secure environments

- Critical infrastructures, high resilience
- We are involved in the activities of the National Emergency Supply Agency
- We regularly practice preparing for cyber disruptions

ISO/IEC 27001  
certificate from 2013

### Sustainable data centers

- Use of waste heat from Kajaani's data center in district heating
- We aim to address sustainability over the entire life cycle of our procurements

CSC's carbon  
footprint  
(market-based)  
**7,235**  
tCO<sub>2</sub>-eq.

Carbon handprint  
(generated district  
heating)  
**887**  
tCO<sub>2</sub>-eq.

### We are an attractive employer

- 700 experts in different fields
- Multicultural and international work community
- Women account for 38%

PeoplePower  
Index  
**75.3**

### We are a non-profit company entrusted with special state assignment

- Owners: State of Finland 70%, higher education institutions 30%
- Open and transparent financial management and operations

Turnover  
EUR  
**98.8**  
million

## OUR PURPOSE

Together we build  
world-class environments  
for research, learning and  
innovation



## OUR SUSTAINABLE DEVELOPMENT GOALS



## WE CREATE VALUE FOR OUR OWNERS, CUSTOMERS AND SOCIETY

### Impact of research gets stronger

#### Solutions for data-intensive computing

- 11,900 users of data management and computing services
- Willingness to recommend CSC's services among national users 8.8/10

Using LUMI supercomputer, we are involved in developing digital twins for the Earth and biodiversity

We promote the findability of research produced in Finland (Research.fi)

#### Sensitive data environments

- Services for end users and organisation customers
- For processing, publishing and authorising access to sensitive data

Our services enable using science in decision making

CSC's HPC services have delivered 11–20-fold benefits for companies

### Digital transformation is advancing

#### Services that make daily life easier in research, learning and teaching

- 1.2 million Funet-Miitti meetings
- 108,000 applicants took entrance examinations using solutions provided for higher education institutions by CSC

We provide services based on data analytics and data hubs for decision making in different sectors

Safeguarding cultural heritage and research data sets: 31 digital preservation contracts

Together with our customers and partners, we develop critical technologies and new practices – examples include artificial intelligence, data analytics and quantum computing

### Benefits from synergy are born

#### We promote service and data portability and interoperability

- National data management solutions (incl. Fairdata and DPS)
- Finnish University and Research Network Funet approx. 470,000 users
- Haka identification provides access to 474 services; 63.2 million logins, approx. 330,000 end users

#### We share our expertise

- Approx. 80 training events, feedback average 8.8/10
- Learning resources for data management and using computational methods and tools

Services provided by the international network (incl. ELIXIR, EUDAT, EOSC)

We offer secure and interoperable research environments cost-effectively

## CSC's HPC services have delivered 11–20-fold benefits for companies

CSC's high-performance computing (HPC) services have generated significant economic value for the companies using them. According to a study conducted by Taloustutkimus, companies achieved an 11–20-fold return on investment (ROI) from their investments in CSC's computing services.

CSC's industrial customers have especially benefited from faster and more cost effective product development. HPC services have accelerated companies' R&D projects, supported the creation of new business models, and enabled new products to reach the market.

CSC's HPC services have played a decisive role in enabling projects related to AI development, large-scale data analysis, simulations, and digital twins. For many startup companies, CSC's computing services have even become a critical prerequisite for conducting R&D based on demanding computational methods. Without CSC's services, some innovations simply would not have materialized.

Companies also highlighted the opportunity to pilot new technologies, such as quantum computing, as a major benefit of CSC's services. CSC's tailored, local customer support has been an important part of the service for companies.

Last year, CSC's industrial use doubled, and it's expected to grow significantly again this year.



## CSC supports joint AI leadership in Finnish higher education

Artificial intelligence is transforming the core functions of higher education, and its opportunities should be seized. Finland has an excellent chance to become a global leader and a European frontrunner in the smart use of AI.

Because the shift is so significant, it makes sense for the Finnish higher education sector to respond together. CSC acts as an active facilitator, bringing institutions together and supporting responsible, impactful leadership of AI development.

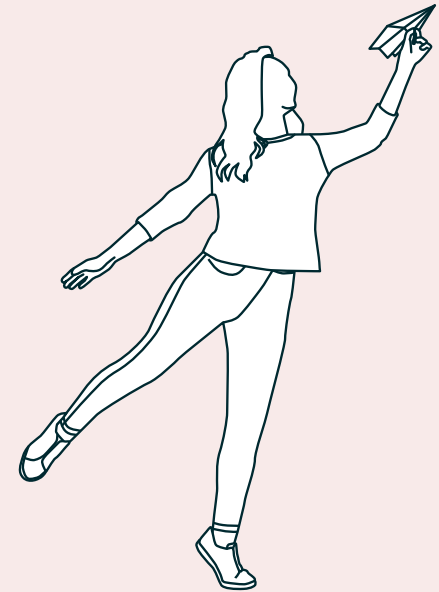
Higher education institutions are supported in this work by the AITO framework, developed by CSC. It helps higher education institutes in understanding how AI affects research, education, collaboration and support services, enabling them to assess opportunities and risks more clearly. The framework has been widely used in higher education collaboration since fall 2025. The AITO framework is openly available and accessible to everyone.

In 2025, CSC organized a workshop series together with Unifi, where university rectors and vicerectors created a shared understanding of how AI is impacting higher education institutions. Based on the resulting conclusions, universities will plan joint actions in 2026 to support AI adoption across their core functions.

In 2024, CSC and Arene delivered a training program that provided leaders of universities of applied sciences with tools for strategically leveraging AI in RDI activities and learning.

### **Read more:**

- [AITO framework](#)
- [News: Finnish universities join forces to harness AI in research, education, and innovation](#)
- [News: AI is transforming research and higher education – new AITO framework brings clarity](#)



## Interoperability and seamless services for higher education – CSC and Digivisio enabling transformation

CSC has extensive experience in developing and maintaining digital services that support the digitalization of higher education in Finland, as well as in facilitating collaboration across institutions. The Digivisio 2030 program office is a part of CSC, supporting the sector's digital transformation, where interoperability between services and systems plays a central role.

Interoperable digital services promote smooth study progress and support the national goal of ensuring that 50% of each age cohort completes a higher education degree. Digital transformation strengthens the renewal capacity and international competitiveness of the higher education sector, while supporting the position of Finnish institutions in the development of the European Education Area.

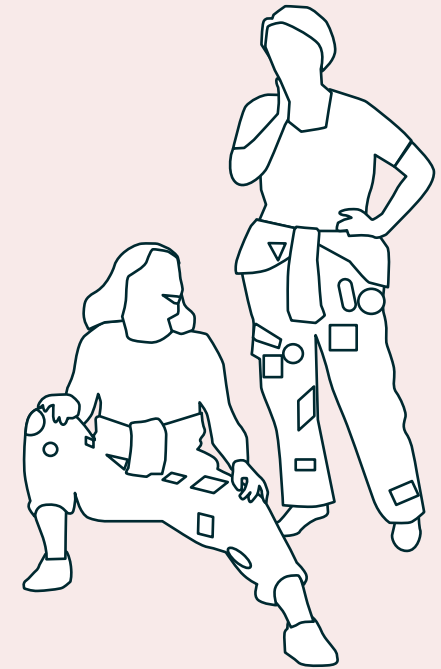
Digivisio 2030 is a joint initiative of all Finnish higher education institutions. Its purpose is to build the future of learning and promote flexible and accessible study opportunities. Launched in spring 2025, Opin.fi is the

program's first service, bringing together the open learning offerings of 35 higher education institutions. The service supports increasing national competence level by offering flexible learning pathways for both continuous learners and degree students.

The synergy between CSC and Digivisio is built on a shared service ecosystem and years of collaboration, including renewing the VIRTta higher education achievement register, developing the OPI reference architecture, and aligning international data flows.

### Read more:

- [opin.fi/en](https://opin.fi/en)
- [News: Finnish higher education institutions' joint Opin.fi service is now open](#)
- [Blog: Better together – CSC and Digivisio supporting interoperability in higher education](#)
- [News: Towards phase 2 of Digivisio – higher education institutions' joint development work continues](#)



## Building Finland's digital memory – 10 years of digital preservation

Finland's national Digital Preservation Services (DPS) safeguard the country's cultural heritage and research data for future generations. The globally unique centralized system celebrated its 10th anniversary in 2025.

Produced by CSC on behalf of the Ministry of Education and Culture, the national DPS act as Finland's shared digital memory, preserving the integrity, authenticity and usability of valuable digital content for up to hundreds of years. The DPS for Cultural Heritage maintains materials such as films, media art, music, books and websites, while the Fairdata DPS preserves selected, unique research datasets. To date, 23 Finnish museums, libraries, archives, universities and research organizations use the services.

Currently, Finland's DPS hold half a billion files, amounting to over 4 petabytes of data – equal to about a billion photos or a million HD movies. CSC provides the technical expertise and ensures

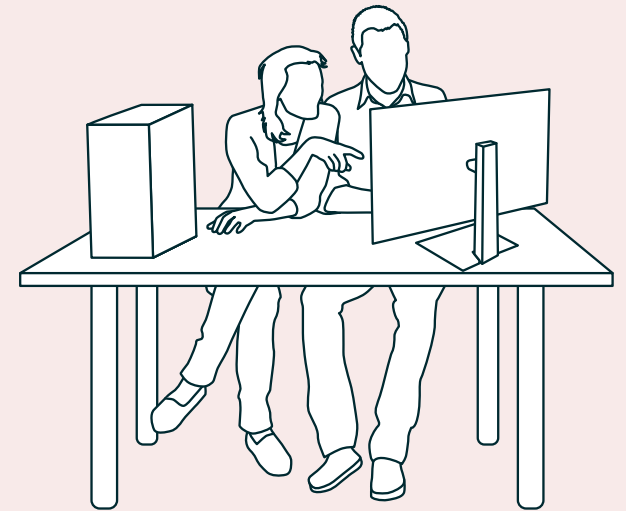
data integrity through validation, format migration and risk management. Digital preservation requires active maintenance, comprehensive metadata and thoroughly documented actions to ensure authenticity across decades and technological change.

Finland is also a leader in sustainable digital preservation. CSC has developed a model to calculate the carbon dioxide emissions of DPS, reports them annually, and aims to deliver the services as sustainably as possible.

"Digital preservation is not only a technical task – it is a cultural and societal responsibility," says **Kimmo Koski**, CSC's Managing Director.

### Read more:

- [News: Building Finland's digital memory – 10 years of digital preservation](#)
- [News: Finland leads the way in calculating the carbon footprint of digital preservation](#)



# Digital twins support research-based decision-making

Climate change and the biodiversity crisis are among the most pressing global challenges of our time. CSC is actively participating in several projects developing digital twins to address the needs of research-based decision-making, from the EU level to the local level and from municipal decision-makers to ordinary residents and companies.

As detailed and realistic simulations require large amounts of data and computing power, these digital twins utilize the EuroHPC LUMI supercomputer hosted by CSC.

CSC also shares its strong expertise in high-performance computing by helping researchers shape

their models to adapt to the LUMI environment. When participating in international projects, CSC aims to ensure that the Finnish scientific community benefits from them as much as possible. In addition to CSC, many projects involve other Finnish partners, which promotes Finnish research expertise and its visibility also internationally.

## **Read more:**

- [Blog: Digital Twins provide new tools for research and decision-making](#)
- [News: Digital twins advancing Arctic and Baltic sea ice research and climate adaptation](#)
- [News: Digital twins transforming biodiversity science](#)

## **Current issues in 2025**

Two Digital Twin projects, both coordinated by CSC, finished in 2025.

**Nordic Cryosphere Digital Twin** project developed sea ice research tools tailored to the unique conditions of the Nordic, Baltic and Arctic regions, and contributed to the development of a global climate change information system. The project's new models support sectors such as navigability, shipping, vessel design, engineering, fishing, and renewable energy, as well as the everyday lives of people in areas affected by ice, including indigenous communities.

**Biodiversity Digital Twin** project developed nine prototype digital twins, e.g. to simulate forest and grassland productivity under climate and management scenarios, understand bee population dynamics and estimate honey production, map the cultural and biodiversity value of a national park, map populations of climate-resilient wild crop relatives and monitor bird species migration in Finland.

## Breakthrough science enabled by LUMI

Researchers across Europe in academia and industry have harnessed LUMI supercomputer's computing power to accelerate discoveries, tackle society's most pressing challenges, and drive innovation across diverse scientific disciplines.

Since its launch, LUMI has provided cutting-edge high-performance computing and AI capacity:

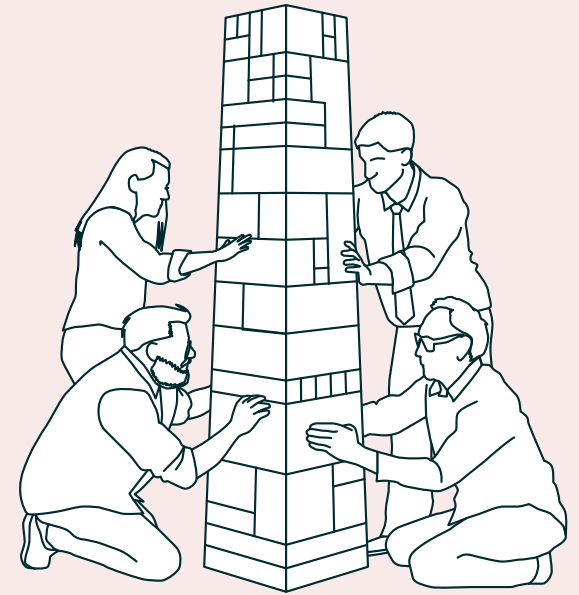
- Around 3500 research projects in academia and industry.
- Over 280 articles published in peer-reviewed scientific journals between autumn 2022 and autumn 2025 that acknowledge access to LUMI.
- LUMI was acknowledged or mentioned in hundreds of conference papers and preprints.

Highlights include 34 articles in the prestigious Nature and its family of journals, as well as publications in other leading titles such as Science and Cell.

The articles represent a wide range of disciplines with 30 scientific disciplines. Most of the projects fall under natural sciences like physics, chemistry and biology. However, there are also several articles related to engineering, and for example, some covering topics relevant to agriculture, health and medicine. Additionally, many of them are interdisciplinary in nature.

**Read more:**

- [News: Breakthrough science enabled by LUMI](#)





**CSC – IT Center for Science**

P.O Box 405, Keilaranta 14, 02101 Espoo  
phone (09) 457 2001 (switchboard)

[www.csc.fi/en](http://www.csc.fi/en)