KPMG

Unlocking the potential of Europe's data market

Navigating the strategic crossroads of EFDS and EHDS in Luxembourg

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What are EHDS and EFDS? Europe's vision for secure & interoperable data spaces

In an era where data fuels innovation much like oil powered past economies, Europe is pushing forward a bold strategy: the creation of sector-specific data spaces.

As of 2025, European data spaces are taking shape across 14 key sectors, all with a shared goal: to dismantle national silos and enable secure, standardized data exchange across the European Union. These data spaces form one of the three pillars of the **European Strategy for Data**, alongside the **Data Act** and the **Data Governance Act**.

While the Data Act focuses on ensuring fair access to and use of data generated in the EU by businesses and consumers, the Data Governance Act, on the other hand, establishes mechanisms to foster data sharing across sectors and countries under trustworthy conditions.

Among the most ambitious and most strategic for Luxembourg are the **European Health Data Space (EHDS)** and the **European Financial Data Space (EFDS)**. Below are some of the key milestones for both data spaces.

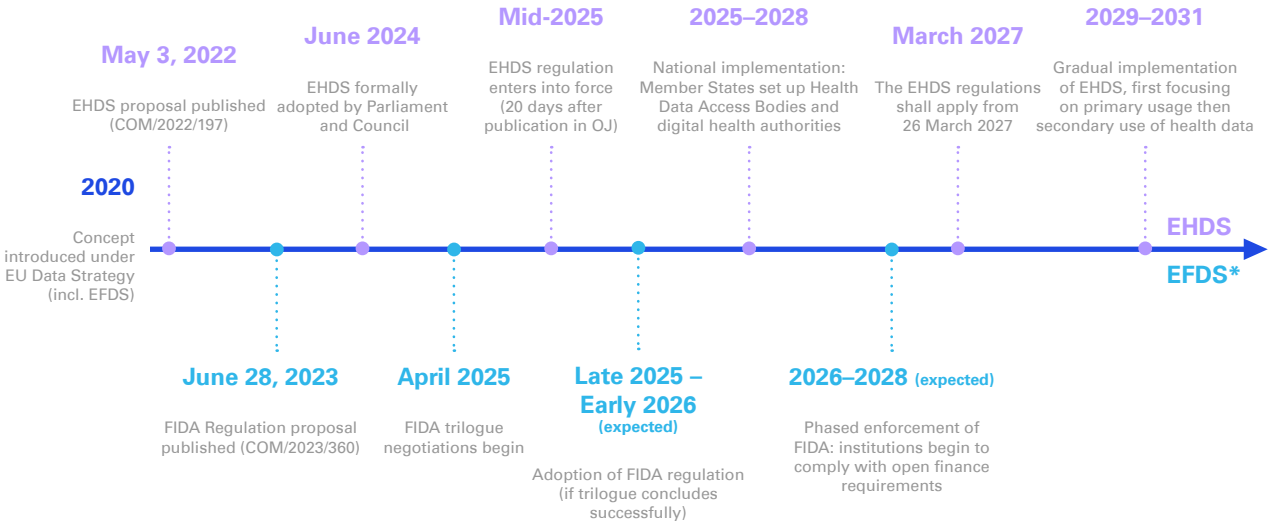


Figure 1: Indicative roadmaps of EFDS and EHDS.

**It should be noted that, unlike EHDS, EFDS does not yet have a formal legislative timeline and is largely dependent on the FIDA regulation to lay the foundation for its development. As of August 2025, EFDS was with procurement under the Digital Europe programme (under development).*

FOR LUXEMBOURG, with a globally recognized financial sector, the stakes are particularly high, and so is the opportunity. The financial sector contributes around 25% of national GDP[1], and many institutions operate across borders under **Freedom of Services (FOS)** passports. That makes the EFDS a natural strategic fit. The EHDS, meanwhile, is equally relevant, given the healthcare sector's strategic importance and its ambitious, fast-evolving ecosystem, particularly in medical research and development. That is just the tip of the iceberg of a long list of benefits for a multitude of stakeholders.

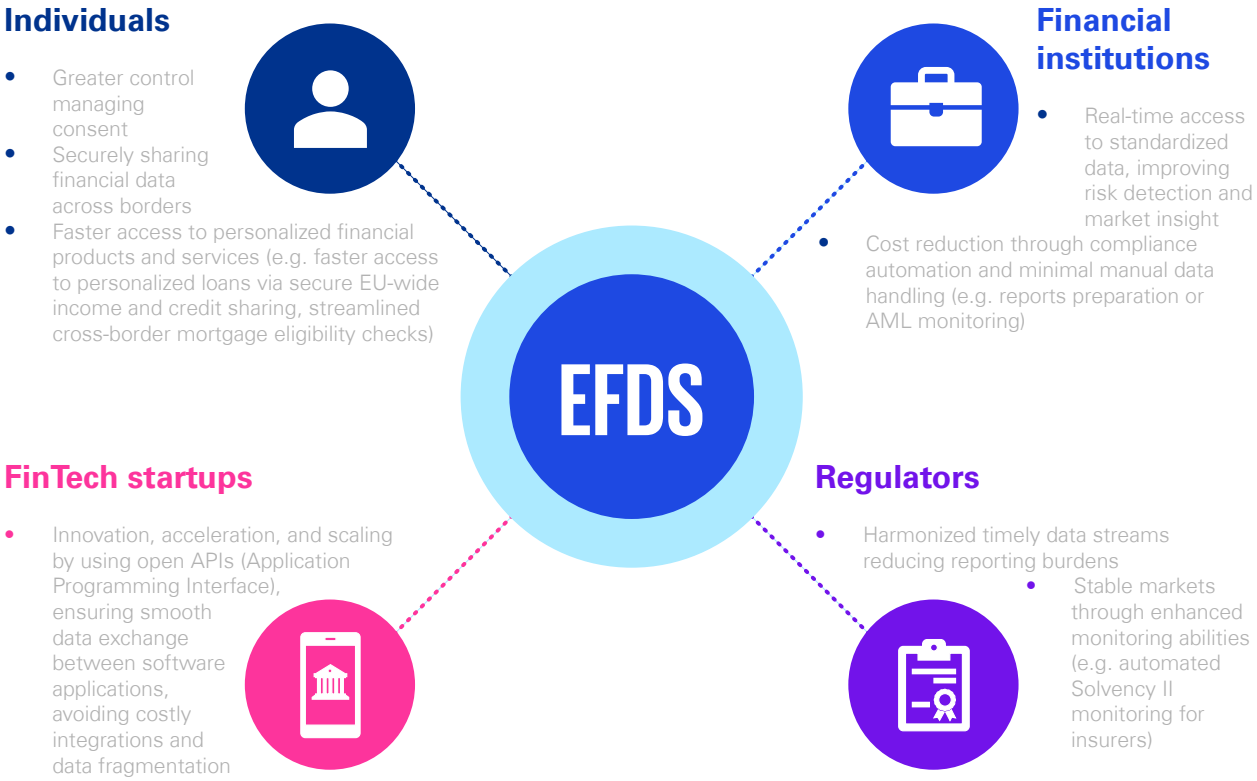
All the more so, these data spaces can build on Luxembourg's core strengths: a compact and agile ecosystem, an international talent pool, and a growing reputation for digital trust. It is therefore no surprise that Luxembourg is among the early/mid movers in both EFDS and EHDS initiatives, as will be illustrated later, leveraging its robust digital infrastructure and regulatory agility. However, this progress, both in the health and financial sectors, is not without its challenges at both the European and local Luxembourg levels.

[1] Portrait of the Luxembourg economy - Luxembourg

How can EHDS and EFDS empower stakeholders?

European Financial Data Space (EFDS)

The implementation of the EFDS across the EU fosters a clear ambition: to create a high-potential ecosystem for seamless, secure financial data sharing among individuals, banks, asset managers, insurers, FinTechs, regulators, and public authorities.
In this context, the following benefits are expected:



Yet, this transformation will also reshape the ecosystem: some traditional intermediaries might see their roles diminish, as direct, interoperable data sharing reduces the need for middlemen and legacy systems. Overall, EFDS will foster a more connected, efficient, and inclusive financial landscape: one where adaptability, cost-effectiveness, and data-driven value creation become essential for all players.

Figure 2: Key benefits of EFDS for main stakeholders.

European Health Data Space (EHDS)

At its core, the EHDS rollout is designed to enable the **secure and efficient cross-border exchange of health data** across the EU. By connecting patients, healthcare providers, researchers, policymakers, and innovators, the EHDS will support the **seamless use of health data for both direct care and medical innovation**. The framework distinguishes between two main categories of data use:

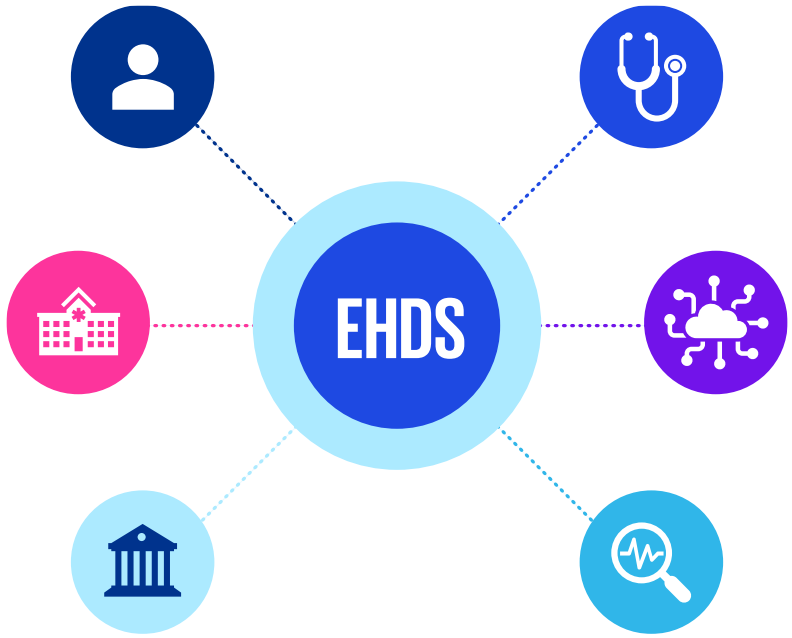
- **The primary use** refers to the utilization of health data for the original purpose for which it was collected. This includes activities such as delivering healthcare services, managing patient care, and supporting clinical treatments.
- **The secondary use** covers the reuse of health data for purposes beyond its initial intent. This may involve medical research, public health monitoring, the development of health policies, or innovation with commercial applications.

Citizens

- Easy cross-border sharing of medical records, enabling continuous and personalized care
- Control over access and possibility to control access to opt out of primary use of their health data (except in cases where their vital interests are at stake)

Healthcare providers

- Real-time access to comprehensive patient data through *Electronic Health Records (EHR)*
- Faster and more accurate diagnoses and tailored treatment plans
- Avoidance of unnecessary medical procedures



Health systems

- Easy cross-border sharing of medical records, enabling continuous and personalized care
- Control over access and possibility to limit data sharing

Internet of Things (IoT)

- Seamless data exchange between connected devices and healthcare data systems
- Real-time monitoring and management of patient health through connected devices

Policymakers

- Access to timely aggregated health data
- Evidence-based decision-making and targeted public health interventions and regulations

Researchers and innovators

- Access to privacy-protected, anonymized and standardized data pools
- Reduction of purchase costs of external datasets
- Acceleration of medical research, innovation (e.g. digital health solutions), and public health breakthroughs

Figure 3: Key benefits of EHDS for main stakeholders.

Just like in finance, this transformation will reshape the healthcare ecosystem. For instance, hospitals, clinics, and healthcare operators will face significant changes from their current siloed approach to an ecosystem based on open data and seamless data exchange.

What could this mean in practice?

In practice, the following data scheme will be implemented for all data exchanges within the European data spaces, ergo, including both the EHDS and the EFDS.

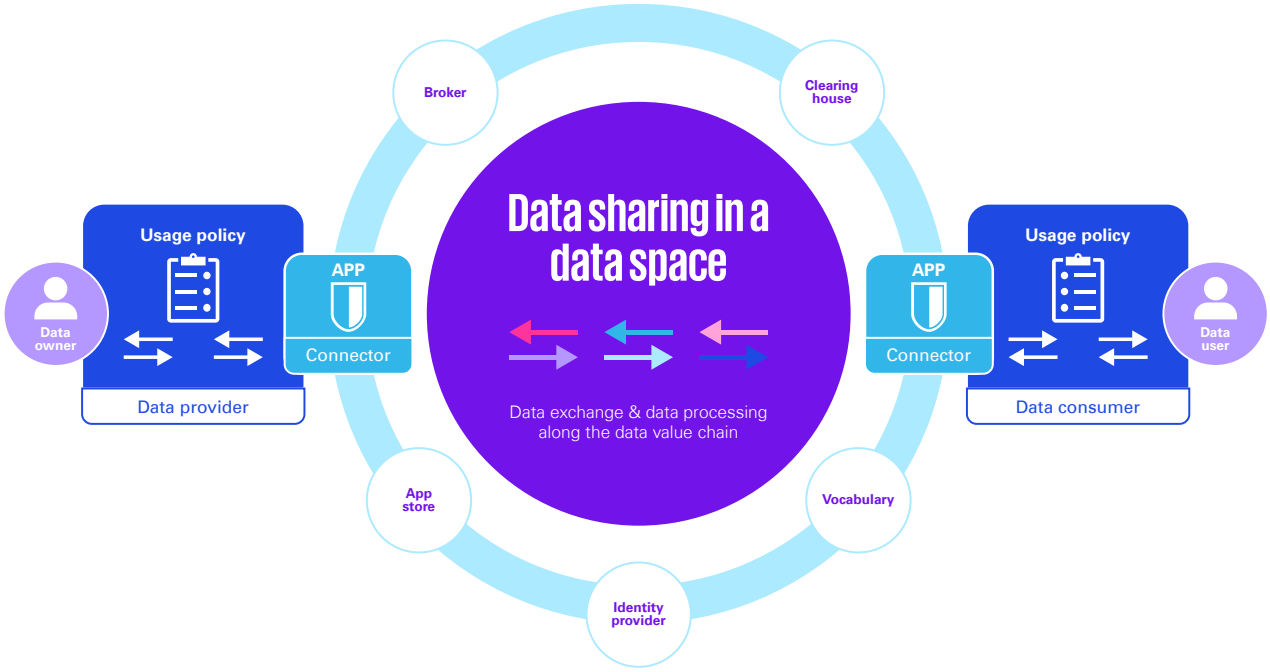


Figure 4: Indicative Data flow chart[2] of EU Data spaces.

[2] Demystifying data spaces: The future of data sharing - KPMG Belgium

AT THE HEART OF EHDS IS ITS PRIMARY FUNCTION: enabling seamless and secure access to essential health information when it matters most, such as in emergency care abroad within the EU. Picture a European patient receiving emergency care while abroad in EU. With the EHDS in place, healthcare providers will securely access essential medical data, such as patient summaries, prescriptions, and medical test results, regardless of language or national system, ensuring faster and safer treatment. As it currently stands, the EHDS regulation[3] appears to favor an **opt-in by default model**, whereby priority medical data is automatically made available to healthcare providers unless the patient chooses to restrict access. At the same time, individuals retain the right to **opt out of the primary use of their health data**, except in cases where access is deemed essential to safeguard the patient's vital interests.

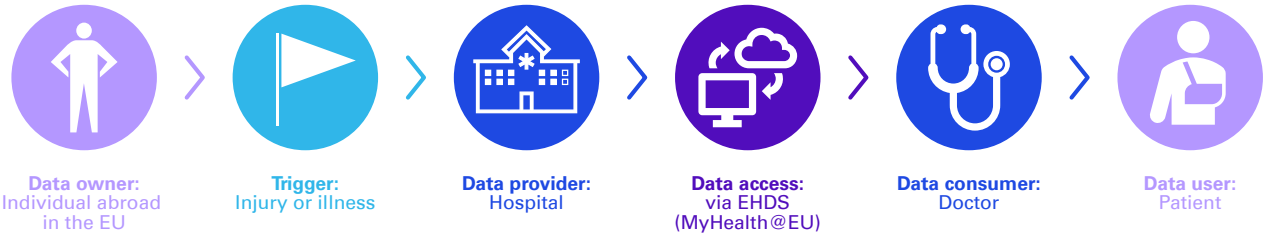


Figure 5: First use case - receiving emergency care while abroad in EU with EHDS.

In the financial sector, with EFDS in place, investors engaging with financial institutions across EU borders will benefit from harmonized, verified data-sharing, accelerating KYC and AML checks, ensuring regulatory alignment, and making cross-border transactions smoother and more efficient.

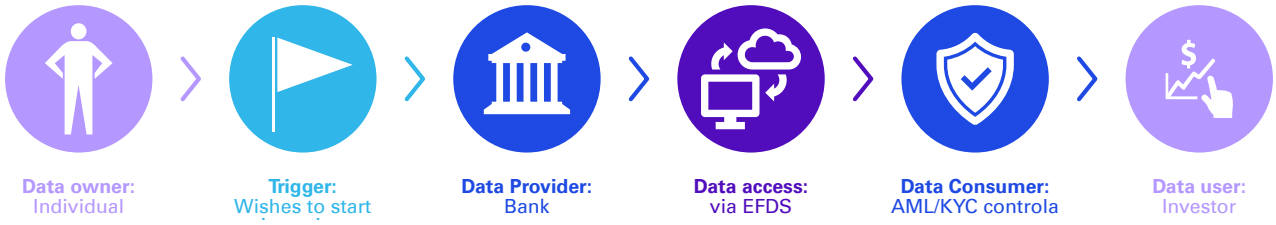


Figure 6: Second use case - investors engaging with financial institutions across EU borders with EFDS.

[3] Regulation - EU - 2025/327 - EN - EUR-Lex

And for research and innovation?

Beyond direct patient care, EHDS also serves a critical secondary role: empowering authorized researchers across Europe with secure access to anonymized health data, unlocking unprecedented opportunities for innovation and public health advancement. With the EHDS, authorized researchers across Europe will access anonymized or pseudonymized health data from multiple EU countries through secure platforms, allowing them, for example, to analyze patient information from diverse healthcare systems to accelerate vaccine development and improve safety monitoring. This kind of large-scale, cross-border research is nearly impossible today due to data fragmentation, legal barriers, and high access costs.

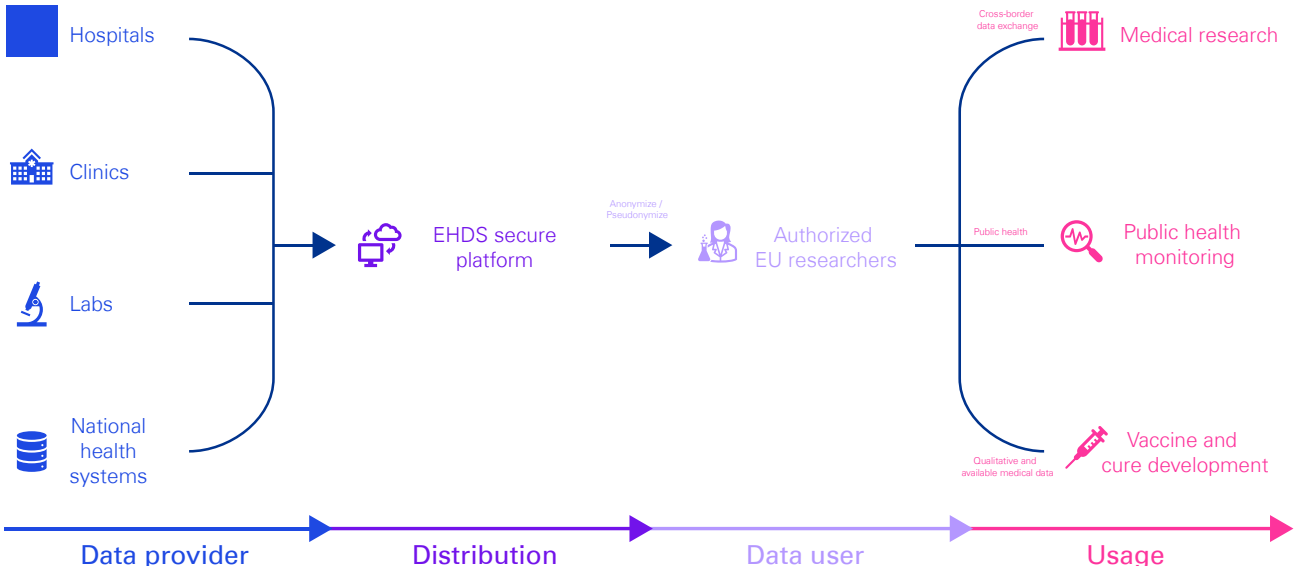


Figure 7: Third use case – implication for research and innovation with EHDS.

SIMILARLY, EFDS WILL PROVIDE FINANCIAL INSTITUTIONS and regulators with streamlined access to standardized data from banks, insurers, and markets across Europe, enabling better fund performance analysis, cross-border risk monitoring, enhanced stress testing exercises, and potential innovation in areas such as digital assets.

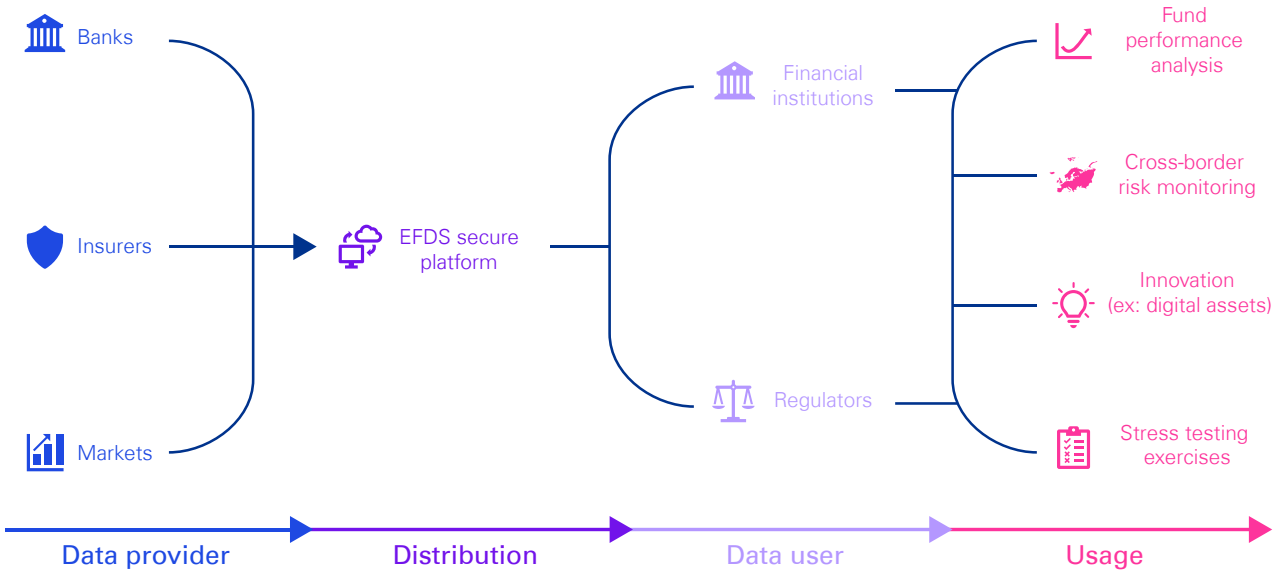


Figure 8: Fourth use case – implication for research and innovation with EFDS

02

What does it take to build a European data space?

BUILDING A EUROPEAN DATA SPACE is a systemic transformation, not just a technical upgrade. Governance must come first, with clear, enforceable rules defining who can access data, under which conditions, and with what liabilities across jurisdictions. This is precisely the role of the **Data Governance Act**, which sets the framework for trustworthy data sharing and oversight mechanisms, while the Data Act complements it by ensuring fair access and use of data generated in the EU. Without this strong oversight, shared infrastructure risks becoming fragmented systems.

As such, data interoperability is essential, requiring common data models, APIs, and semantic standards that enable secure, reliable exchange data at scale and in real time. Without these, cross-border use cases remain theoretical.

On the technological front, the infrastructure underpinning the European data spaces is still under development, yet its overall framework and guiding principles are already clearly defined, even though no single architecture has been officially selected at the EU level.

Although the European Commission has articulated the need for a common framework to ensure interoperability, security, and data sovereignty, much of the practical implementation remains in pilot or preparatory phases, focused on linking diverse data sources to the envisioned target infrastructure.

IN TERMS OF INFRASTRUCTURE, the EU has adopted a **federated infrastructure model** for its common European data spaces. Under this approach, data remains stored locally - within hospitals, research centers, or businesses - while being interconnected through **shared technical standards and secure interoperability tools**.

For instance, Simpl[4], the European interoperability platform funded by the Digital Europe Programme has been designed to support the development of the Common European Data Spaces, providing a secure, open-source middleware that ensures interoperability, data quality, and compliance with EU standards. This platform **has been developed to offer** free, compatible components and tools for governance and legal infrastructure, helping organizations build and connect data spaces efficiently.

Rather than centralizing all information in a single EU cloud, this model allows participants to **retain sovereignty over their data** while enabling **secure, cross-border sharing** when needed, for instance in healthcare and finance.

4 Simpl: Cloud-to-edge federations empowering EU data spaces | Shaping Europe's digital future

SOME CROSS-BORDER INFRASTRUCTURES started their development **at the EU level based on this logic, especially under the EHDS:**

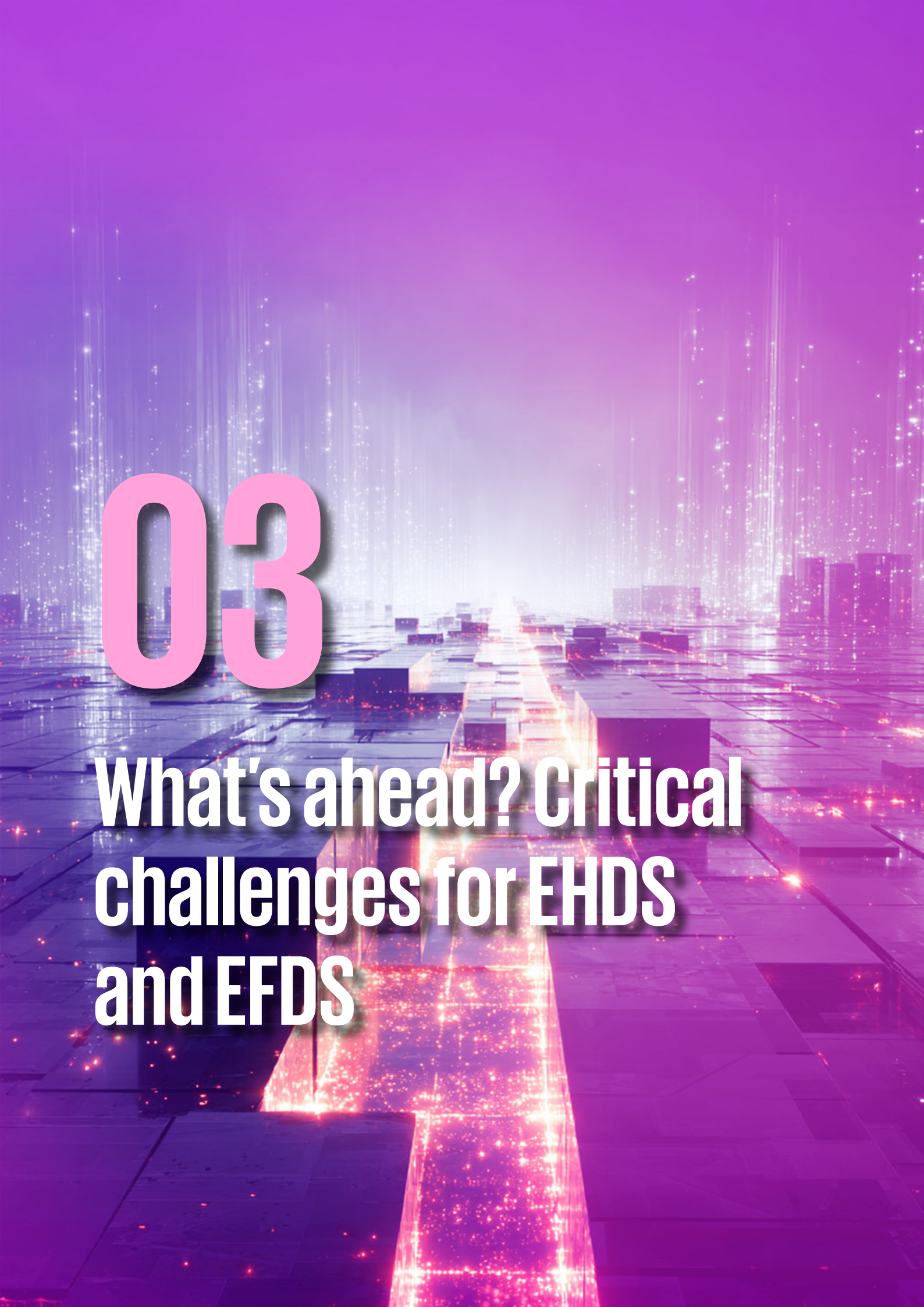
- **MyHealth@EU** (primary use): connects national eHealth systems across member states, enabling the **cross-border exchange of health data** such as ePrescriptions and Patient Summaries. It facilitates the **primary use of health data** by making it possible for citizens to access and share their personal health information for direct care.
- **HealthData@EU** (secondary use): serves as the **central platform for the reuse of health data**, supporting functions such as searching and filtering the EU Dataset Catalogue and submitting applications for access. It facilitates the **secondary use of health data** - including research, innovation, and policymaking - by enabling the discovery and access of anonymized or pseudonymized datasets.

Moving forward, member states are now expected to align their national infrastructures to EU-level standards to enable cross-border interoperability. This alignment, however, uneven due to varying levels of digital maturity and investment. The focus is, however, on connecting existing national and sectoral infrastructures, not replacing them with a central EU cloud.

Increased data sharing also raises cybersecurity, data protection, and operational resilience risks, which must be embedded by design, with EU-wide collaboration on threat detection, incident response, and certification standards.

Transformation depends on mindset as much as infrastructure. Public actors would ensure adoption by shifting strategy from compliance to active collaboration through early engagement, aligned incentives, and sector-specific transition plans. Some resistance may emerge and is even to be expected, driven by legacy systems, regulatory fragmentation, or strategic concerns. Proactive change management will be essential to navigate these challenges, sustain momentum, and enable the successful development of data spaces.

[3] Simpl: Cloud-to-edge federations empowering EU data spaces | Shaping Europe's digital future



03

What's ahead? Critical challenges for EHDS and EFDS

TURNING EHDS AND EFDS INTO REAL INFRASTRUCTURE means moving beyond vision to execution. Both face deep fragmentation, from hospitals running hundreds of IT systems to banks navigating conflicting rules and legacy platforms. Without clear governance, common standards, and secure infrastructure at EU level, these data spaces will stall. The table below serves as a framework to assess both data spaces across common implementation challenges and highlights where strategic actions or realignment are required:

Challenges	EHDS (European Health Data Space)	EFDS (European Financial Data Space)
Governance		
Clear roles and governance bodies	Adressed	Early stage
Coordination and alignment between multiple authorities and between national and EU systems	In progress through EU-wide initiatives and regulations (Data Act, Data Governance Act, …)	Early stage
Data access rights and consent across borders	Adressed[5]	Early stage
Frameworks balancing innovation and risk management in financial data exchanges	Not applicable	Early stage
Clear regulations applicable across the EU	Adressed[5]	Early stage
Data infrastructure and interoperability standards		
Infrastructure with capacity to support large-scale data sharing	Early stage	Early stage
Establishing harmonized systems, standardized APIs, and interoperability standards	In progress with the EHDS regulation[5] and EU-wide initiatives (e.g: EEHRxF for data format)	Early stage

Ensuring the certification and consistent adoption of electronic health records (EHR)	In progress with the EHDS regulation[5] in the EU and the DSP (Dossier de Soins Partagé) in Luxembourg	Not applicable
IT silos and integration of systems used across borders	In progress with the EHDS regulation[5]	Early stage
Data privacy and security		
Data privacy and security at stakeholder level through encryption technologies, cybersecurity tools, and consistent protective practices to comply with GDPR and national data protection law	Early stage	Early stage
Digital trust, transparency, and secure cloud services, especially with information exchange and use of data for innovation	In progress with the EHDS regulation[5]	Early stage
Integrating cybersecurity scalability to comply with data space requirements	Early stage	Early stage
Business continuity and resilience against fraud and cyberattacks	Early stage	Early stage
Resistance to change		
Cultural resistance among stakeholders to digitize and share data	Early stage	Early stage
Fragmented digital maturity across hospitals and clinics	Early stage	Not applicable
Legal clarity and safeguards on competitive exposure to ensure private players engagement	In progress with the EHDS regulation[5]	Early stage
Clear frameworks on data control, data confidentiality, and/or commercial advantage	In progress with the EHDS regulation[5]	Early stage

Figure 9: EFDS and EHDS's common implementation challenges and highlights where strategic actions or realignment are required.

04

European data spaces already in motion? A snapshot of health and finance initiatives

EUROPE'S DIGITAL STRATEGY PLACES BOTH EHDS AND EFDS AT ITS CORE, yet their development paths show significant divergence. Globally, EHDS has advanced more rapidly, driven by a robust regulation[5] and EU-funded infrastructure projects. Meanwhile, the financial data space remains at an earlier stage.

Luxembourg illustrates this contrast: while it plays an active role in EHDS development with clear accountability at ministry-level and concrete initiatives, its EFDS-related efforts are emerging but fragmented, reflecting the maturity disparity between data spaces existing in the EU. The following table compares and exemplifies the different maturity levels of health and financial data spaces worldwide, across Europe, and specifically in Luxembourg.

Legend: Maturity level of data spaces

- Regulation and governance under discussion, limited initiatives launched.
- Existing regulations and governance framework and ongoing initiatives.
- Some initiatives are implemented and operational.

**To be noted that worldwide initiatives are emerging in various jurisdictions, each with different regulations affecting the projects.*

Level	Health data space	Financial data space
Worldwide	The EHDS ranks among the most ambitious health data spaces worldwide; however, some health data initiatives outside the EU demonstrate greater operational maturity, largely due to Europe's added complexity of multiple countries, languages, and national systems. Notable examples include: **- US NIH All of Us Research Program:** A program collecting and sharing anonymized health data from over 850,000 participants to accelerate research in healthcare. **- South Korea's Health Data Hub:** A central hub for health data to support nationwide research and healthcare innovation. Within this hub, the MyHealthWay platform enables secure data sharing across institutions and has been operational for several years.	Globally, financial data space initiatives remain limited and rarely fully operational, though they offer promising models for secure and efficient data sharing. The principle of open finance is gaining momentum across the industry, largely driving the adoption of APIs for data access and interoperability. Still, a few national-level initiatives stand out, such as: **- Singapore SGFinDex:** A government-led platform aggregating financial data from banks, insurers, and government agencies, allowing consumers and regulators secure, consolidated access to financial information for improved service delivery and oversight. This platform has been fully implemented since 2019.

Level	Health data space	Financial data space
European Union	On a European level, efforts are centered on aligning countries and stakeholders to ensure a shared direction, with the EHDS implementation underway and practical initiatives beginning to take shape: **- Data Governance Act and Data Act:** These regulatory instruments lay the foundation for safe EU-wide data sharing, access, and usage, across domains. **- TEHDAS (Towards the European Health Data Space):** An EU Commission-led project defining legal and governance frameworks to enable secure sharing of health data for research and care. **- MyHealth@EU:** A network connecting national health data infrastructures, enabling cross-border patient data exchange (ePrescriptions and medical summaries) across EU countries. **- EHDS Regulation:** A regulation for healthcare data access by patients, providers, and researchers, which came into force in May 2025[5]. **- European Electronic Health Record Exchange Format (EEHRxF):** A standardized data format designed to foster data interoperability and cross-border exchange of electronic health records across EU member states. Slovenia. **- PATHeD:** A mobile application enabling seamless and secure cross-border exchange and individual access to patient information through MyHealth@EU service. This pilot project has been implemented in Cyprus, Czech Republic, Hungary, Ireland, Portugal, and Slovenia. **- Cancer Image Europe (EUCAIM):** A project creating a comprehensive, standardized cancer imaging database across Europe to advance cancer diagnosis, research, and treatment. **- The European Genomic Data Infrastructure (GDI):** A major EU initiative enabling secure, cross-border access to genomic and clinical data for research, diagnostics, and public health. Funded under the Digital Europe Programme, GDI connects over 20 countries through a federated infrastructure aligned with GDPR and EHDS. It supports real-life use cases in rare diseases, cancer, and infectious diseases.	At thte EU level, EFDS regulatory and governance frameworks are emerging, but practical implementation remains limited and largely in its early stages, with initiatives such as: **- PSD2:** An EU-wide directive requiring banks to open payment data to third-party providers under strict security, enabling open banking but limited to payment accounts. **- FIDA (Financial Data Access) Proposal:** An EU legislative initiative aimed at expanding financial data sharing beyond payments to include insurance and investments. **- Open Finance Framework:** A conceptual extension of Open Banking, under which FIDA will operate, designed to enable consumer-driven data sharing across all financial sectors. This initiative is currently at its earliest stage of development.

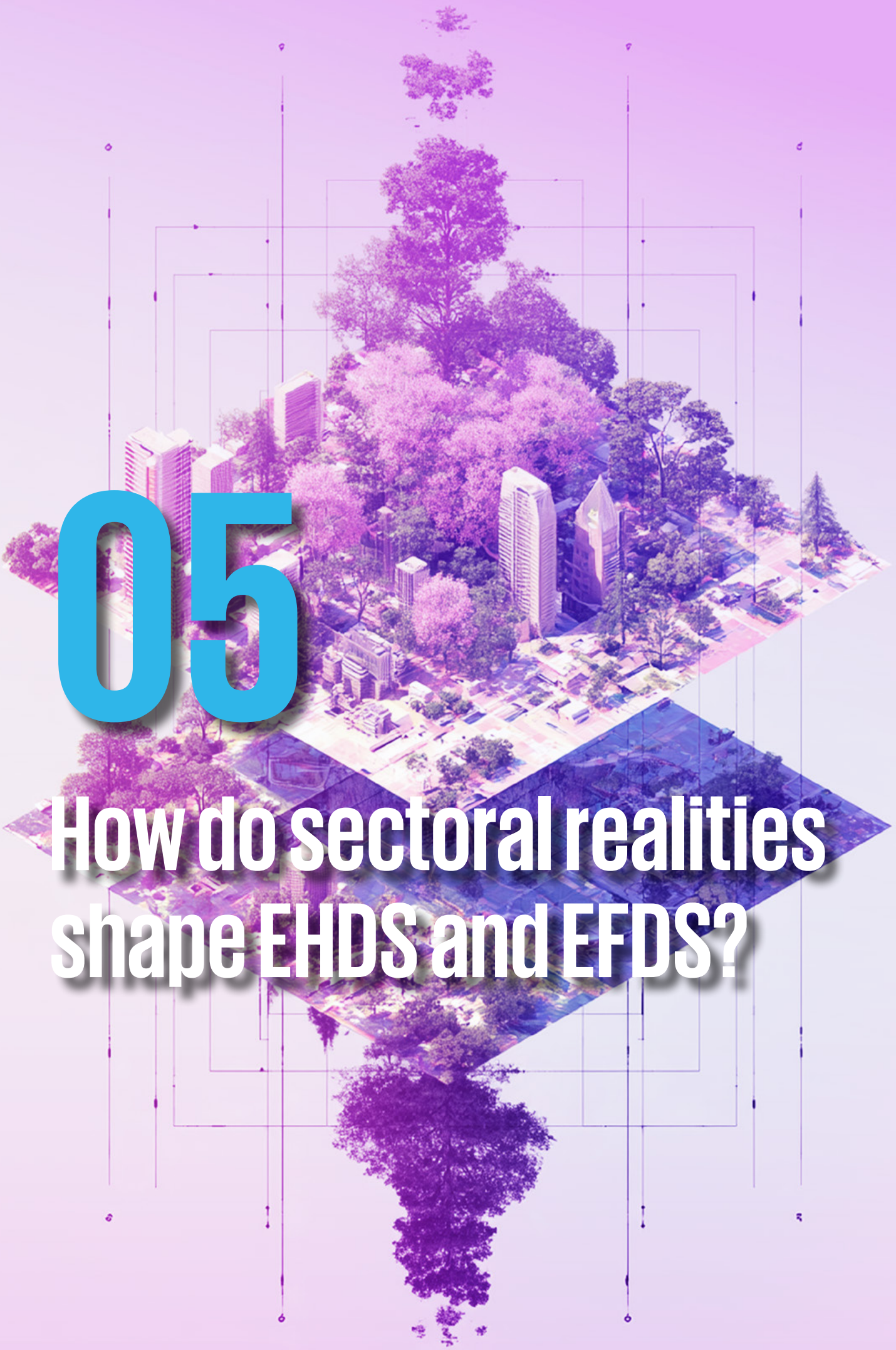
Level	Health data space	Financial data space
Luxembourg	In Luxembourg, promising initiatives are emerging to pave the way toward pilot projects and implementation, but full deployment has yet to be achieved: **- DataSpace4Health:** This initiative enables the collaboration of hospitals and tech firms to build infrastructure for sharing anonymized patient data across borders to support research and care coordination. As part of the EU TEHDAS framework, DataSpace4Health gathers key stakeholders, including LNDS (Luxembourg National Data Service), LIH (Luxembourg Health Institute), NTT Data, Agence eSanté, LuxInnovation, Robert Schuman Hospitals, Universität Luxemburg. **- DSP (Dossier de Soins Partagé) and eHealth Platform:** This platform supports secure electronic health record access and patient information within Luxembourg and cross-border via MyHealth@EU. However, its usage has to be further extended. **- EHDS regulations in Luxembourg:** On March 18, 2025, the Ministry of Health and Social Security formally announced the entry into force of the EHDS regulations in the Grand Duchy.	At the national level, initiatives linked to the EFDS remain limited, though targeted project are beginning to emerge, such as: **- Catapult Bootcamp 2025:** A program fostering financial data sharing solutions focused on KYC automation, AML reporting, and document exchange for banks, insurers, and regulators. Led by LHoFT with the support of the Ministry of Finance, this program offers a local testbed aligned with future EFDS objectives.

Figure 11: Comparative table of health and finance data space initiatives worldwide.

[5] Regulation - EU - 2025/327 - EN - EUR-Lex

AS DATA SPACES BECOME A CENTRAL PART OF EUROPE'S STRATEGIC AGENDA, the EHDS demonstrates how coordinated governance, focused efforts, and clear legislation can effectively advance digital health. The EU's strength lies in setting clear, harmonized rules. With the Data Act and Data Governance Act, it built a strong foundation for both the EHDS and the emerging EFDS. This gives Europe a clear edge in creating secure, connected data markets across sectors.

Luxembourg's position reflects this broader European landscape on a smaller scale. The country has already invested in developing its national health data infrastructure, through initiatives like DataSpace4Health, and can be considered a mid-mover at the European level. In parallel, Luxembourg is beginning to explore financial data sharing through targeted pilots and innovation programs. However, the EFDS-related efforts remain in early stages. By building on the EU's regulatory momentum, Luxembourg has the opportunity to strengthen and scale these initiatives, positioning itself to play a meaningful role as the EFDS develops, mirroring its growing influence in health data.



05

How do sectoral realities shape EHDS and EFDS?

WHILE BOTH EHDS AND EFDS ARE CORNERSTONES OF EUROPE'S VISION for secure and interoperable data sharing, they are shaped by fundamentally different sectoral realities. In healthcare, the EHDS is driven by the need to ensure that stakeholders such as hospitals and the pharmaceutical industry are technologically ready to support data exchange within their already complex and diverse IT ecosystems. This requires solutions that can integrate with diverse technical environments, supported by strong governance frameworks and harmonized standards to ensure interoperability and safeguard sensitive medical information.

In contrast, the EFDS stems from a financial sector that already has a strong technological foundation, thanks to existing frameworks like PSD2, setting the foundation for secure APIs, and digital identity systems. Moreover, the nature of financial data, often globally recognized and standardized, such as IBANs, SWIFT codes, and credit ratings, further facilitates its integration and harmonization across borders. This positions the sector well in its future ability to connect stakeholders' ecosystems to EFDS. However, despite this technical readiness, progress remains limited for now. The momentum is lacking, largely due to concerns among private sector actors about potential costs and the significant organizational changes such a transition would require. Still, the broader worldwide push toward open finance is expected to create a growing pressure for compliance and alignment, which may accelerate the development of the EFDS over time. Meanwhile, the EHDS is already advancing into implementation pilots and legislative negotiations, highlighting stakeholder coordination, and perceived urgency between the two domains.

06

Accelerating momentum through strategic action

FOR LUXEMBOURG, POSITIONING ITSELF AS AN EARLY MOVER IN THE DATA SPACES IS CRUCIAL, not only to avoid potential last-minute, heavy investments by public and private stakeholders to ensure compliance, but also because it could provide a significant competitive advantage for the country and its stakeholders if leveraged effectively. The time to act is now. Even without the IT infrastructure, the foundations are already in place, with clear EU regulations, emerging national pilots, and active involvement in health data initiatives. However, to fully realize the benefits of the European data spaces, Luxembourg must thus accelerate its strategic engagement, particularly in the financial sector, where momentum is still building.

The benefits are too significant to ignore. From more efficient healthcare delivery, personalized healthcare services and medical research and innovation to streamlined financial services and more effective regulatory oversight, these EU data spaces have the potential to improve operational efficiency, lower costs, and stimulate innovation across the board. Yet this potential can only be unlocked if robust data interoperability standards and secure digital infrastructure are firmly in place to ensure seamless, trustworthy data exchange. Once these foundations are in place and the EU data spaces are implemented, the scope for innovation will be immense, with notably AI which could play a transformative role in unlocking new opportunities.

In sum, Luxembourg has the tools, the talent, and the political alignment to lead in both domains, but only if it treats both data spaces as strategic national assets. The innovation train is moving. Now is the time to ensure Luxembourg is not just on board but driving from the front.

This whitepaper was written on 20 August 2025, was co-authored by **Jérôme Bernard (Partner, Advisory, KPMG Luxembourg)** *and* **Annick Breton (Partner, Head of Consulting, KPMG Luxembourg),** *with contributions from* **Alexia Leroy (Senior Adviser, KPMG Luxembourg) and Marie Hanneuse (Adviser, KPMG Luxembourg).**

Please note that the environment in which this information was published is dynamic and continuously evolving. New discussions, updates, and publications may alter or add to the insights provided herein.

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