

IOTWeek

Dublin — June 20-23, 2022



Drivers and barriers for the adoption of digital platforms

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GLOBAL VISION:

IoT TODAY AND BEYOND

IOTForum

OPEN DEI in a Nutshell

Coordinate & Support EC's efforts in DT for Manufacturing, Energy, Agri-Food and Health & Care Sectors.
Support the Adoption of Digital Platforms and the development of LSP

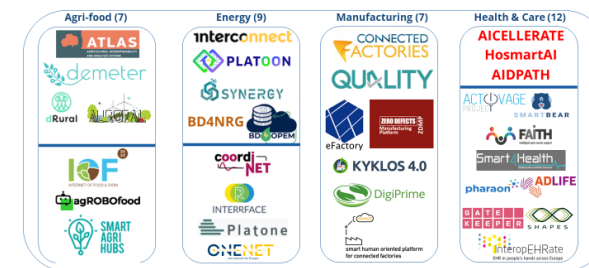


Coordinate & Support **TECHNOLOGY-DRIVEN DT:**

- Common RAs
- OS Reference Implementations
- Methods and tools for Data Spaces
- Domain-specific Open Standards

Coordinate & Support **BUSINESS-DRIVEN DT:**

- Digital Maturity assessments
- Digital Skills
- Emerging Digital Technologies Uptake
- Business KPIs and Benchmarking
- **Business Models**

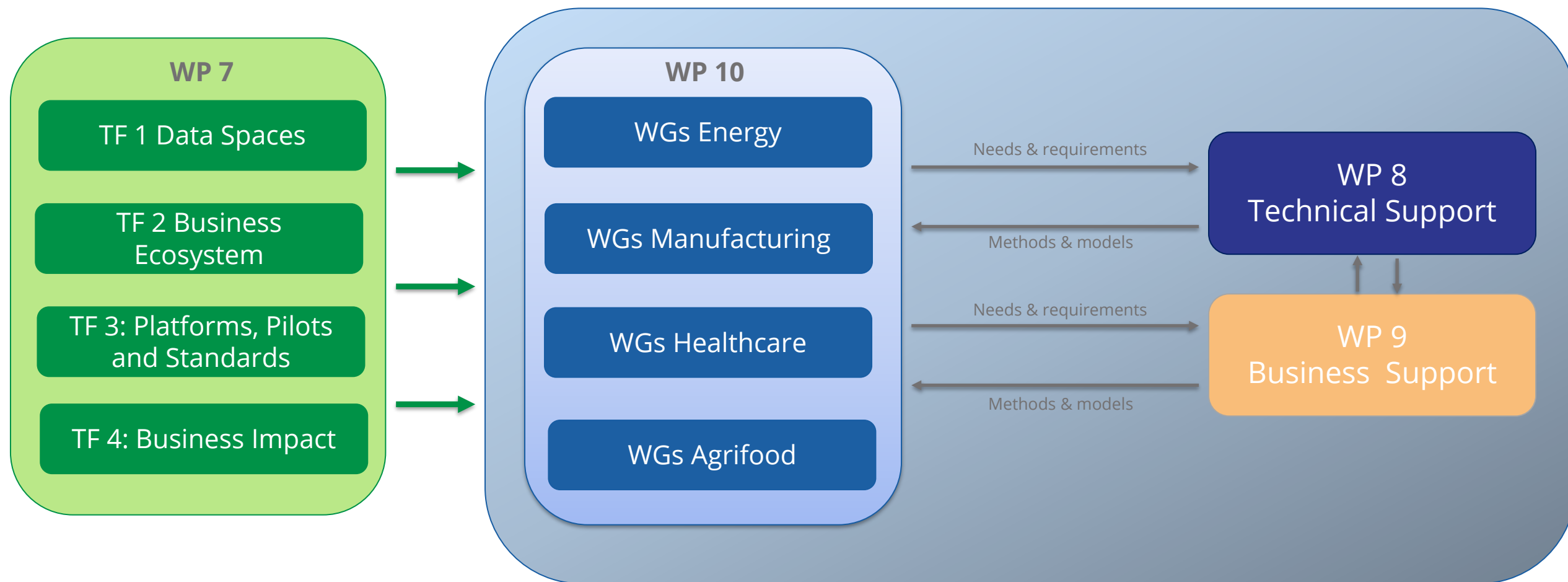


OPEN DEI in a Nutshell

Task Forces

Working Groups

Internal support

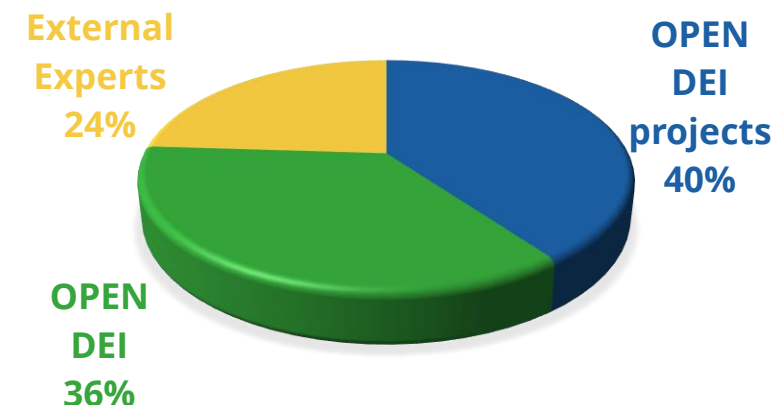


Task Force 4 Overview

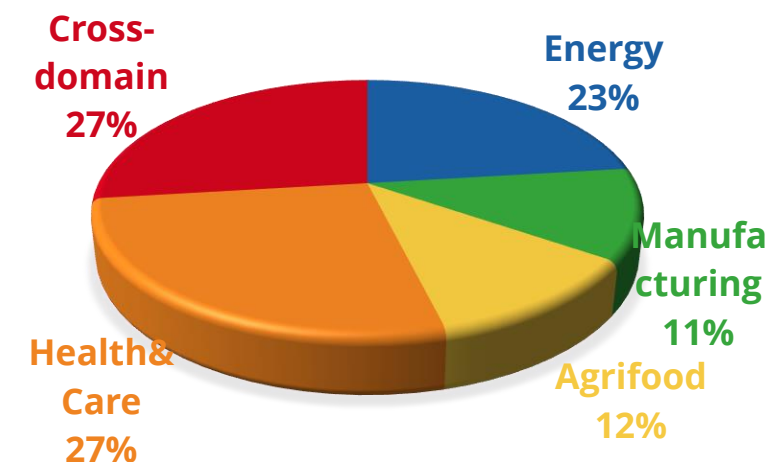
TF4 is a **Think Tank** to create **knowledge** and **tools** to foster effective **sharing** and **assessment** of experiences and lessons learnt on analysing the **drivers and barriers** for adoption of **platforms** supporting Digital Transformation and on assessing their **business impact**.

A pool of experts in the domain of Digitising European Industry (DEI) discuss, on a voluntary basis, **new opportunities and challenges** and consolidate their findings in a **Position Paper** and a **business assessment framework**.

TF4 MEMBERS PER TYPE



TF4 MEMBERS PER DOMAIN



OPEN DEI TF4 Position Paper

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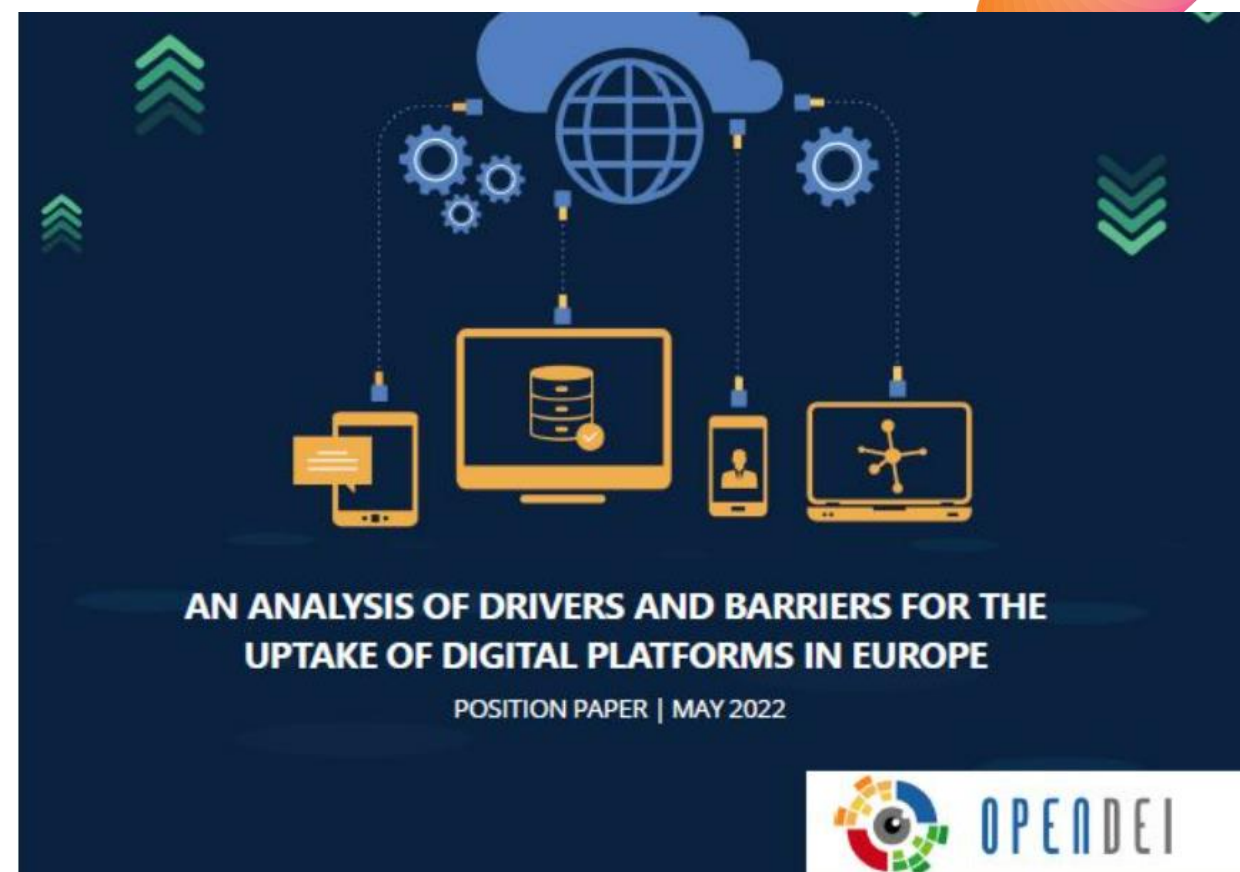
- Public on OPEN DEI website

<https://www.opendei.eu/case-studies/an-analysis-of-drivers-and-barriers-for-the-uptake-of-digital-platforms-in-europe/>

Contributing organizations

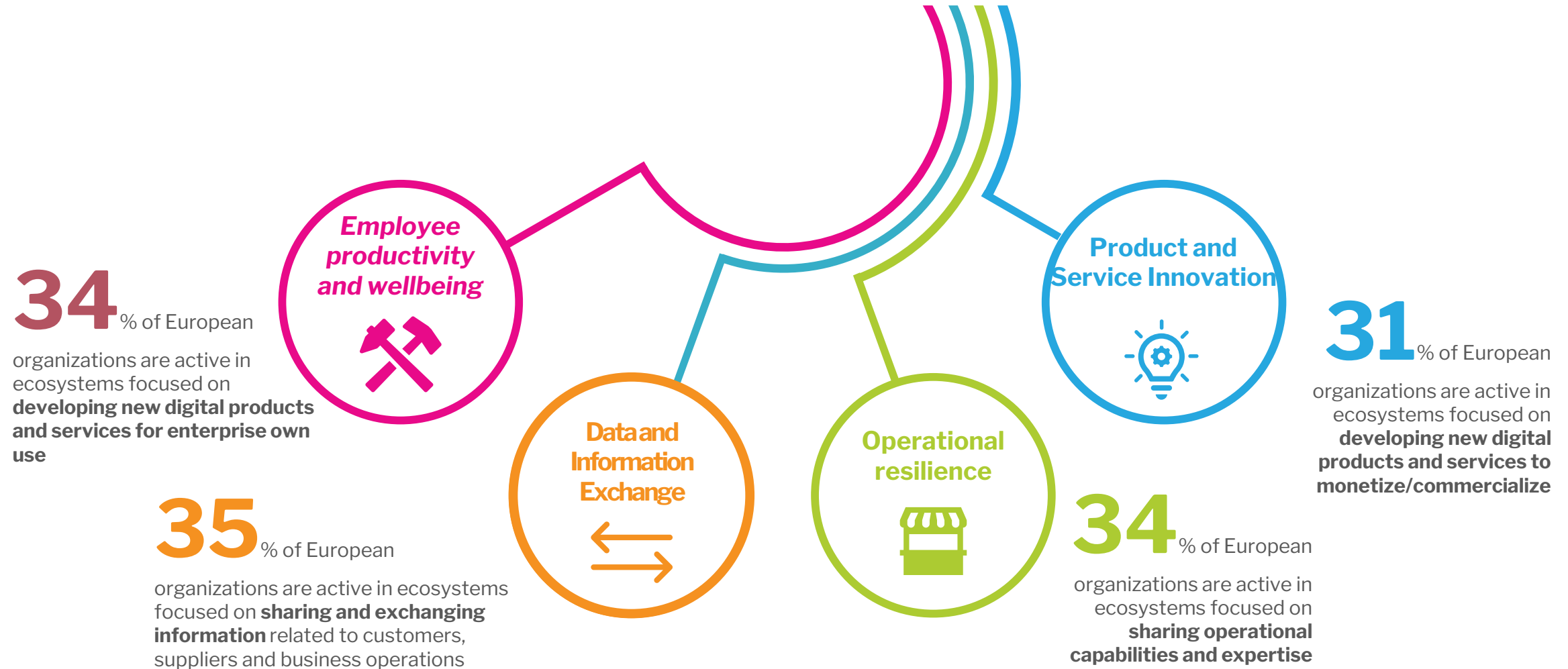


Contributing Projects



The Rise of Digital Ecosystems in Europe & the role of Digital Platforms

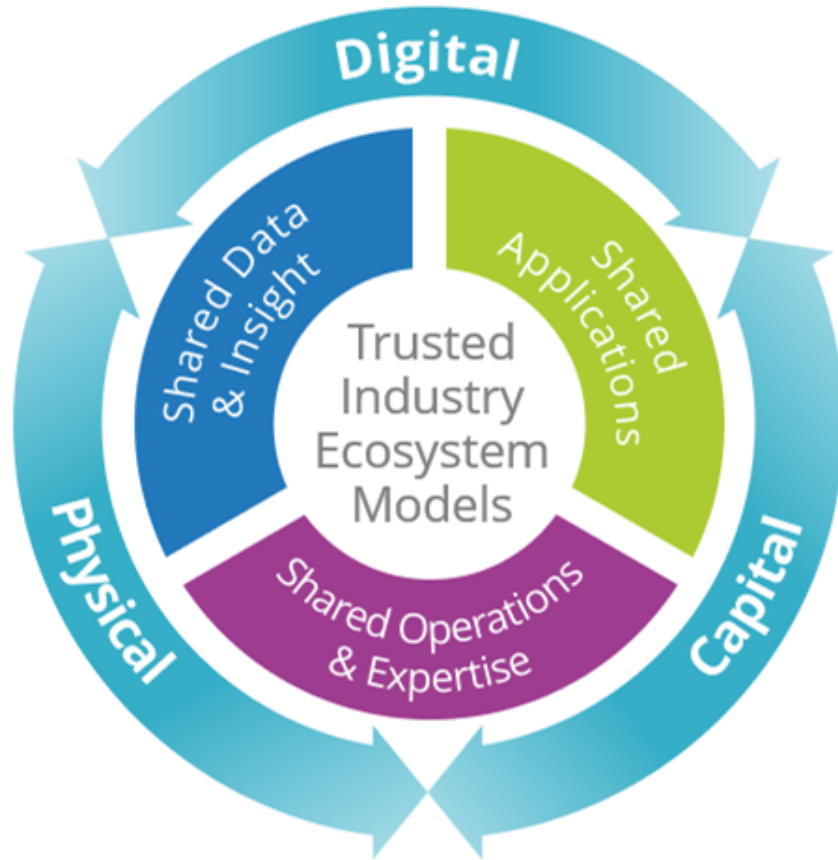
Digital technologies need a digital ecosystems, and digital ecosystems need digital platforms to scale.



Industry Ecosystems Enable Strategic Outcome through Dynamic Collaboration

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Source: IDC US46828520 "What Is the Future of Industry Ecosystems?"

29% of European enterprises expect to be both a **participant and an orchestrator** in ecosystems



The future of industry ecosystems is open, **dynamic**, and **shared**, evolving like a biological ecosystem that changes in response to **pressure, competition, or disruption**

39% of European enterprises expect to **share more data** with the ecosystem after COVID-19



European enterprises think that the **C-Suite** will be the key decision maker when it comes to designing their ecosystem approach

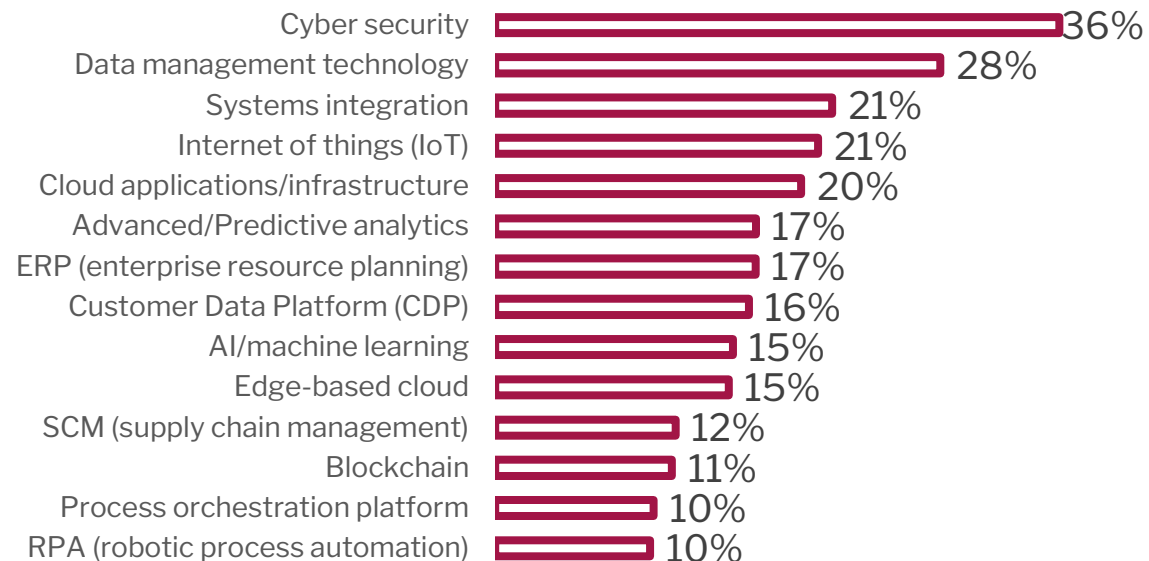
Source: IDC European Industry Acceleration Survey, May 2021 (N = 1316)

Source: IDC Future of Industry Ecosystems Survey, May 2021 - Number of respondents in EMEA = 281

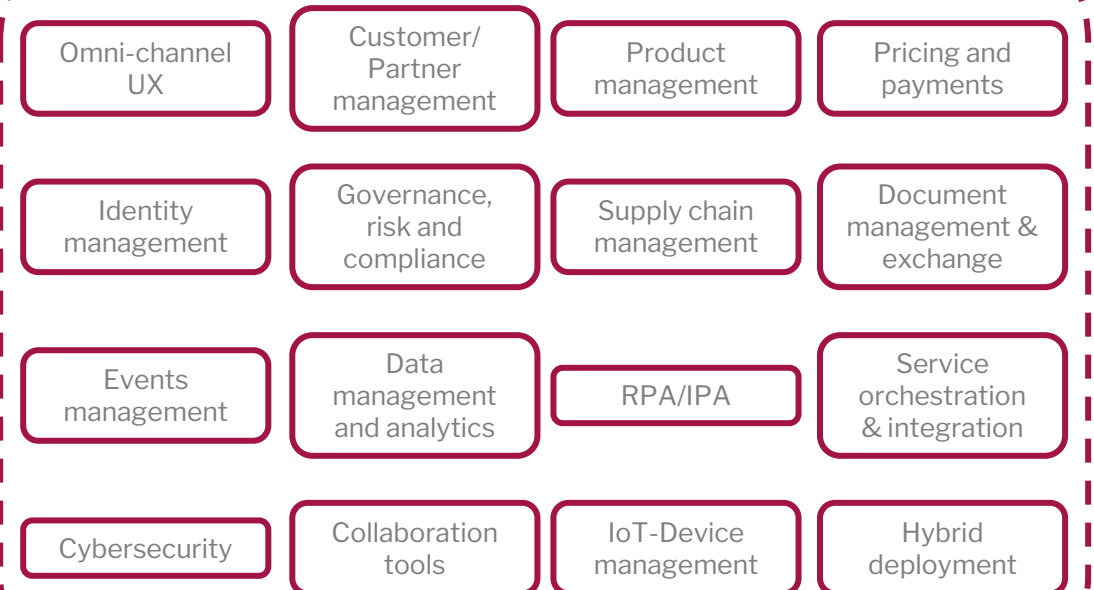
Ecosystems Need B2B Platform to Scale

IDC defines B2B platforms as: *virtual environments facilitating the **exchange** and connection of data **between different organisations** through a **shared reference architecture** and common governance rules*

What are the top 3 technology investment areas required to enable your participation in industry ecosystems?



Examples of B2B platform reference capabilities

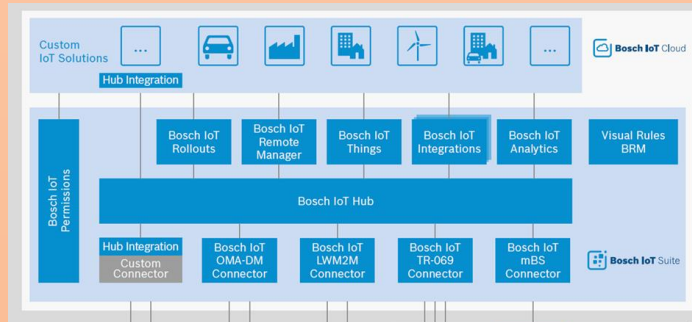


Examples of B2B Platforms

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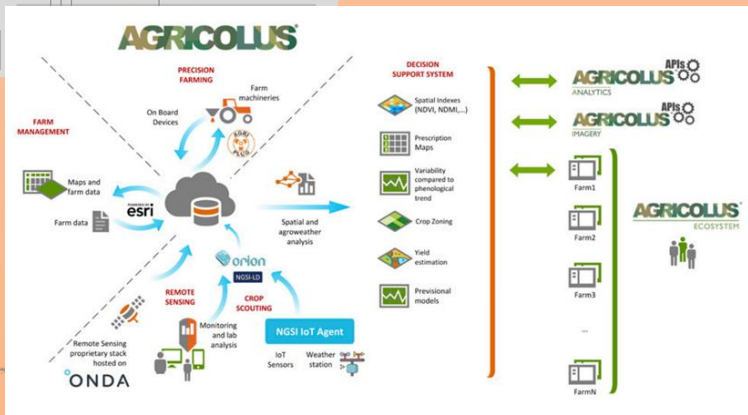
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Commercial Market

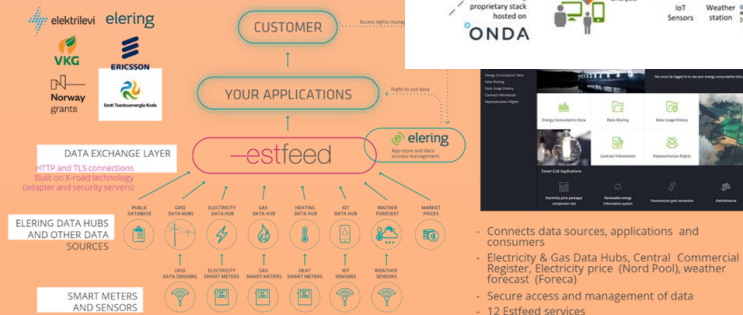


Bosch IoT platform

AGRICOLUS platform



ESTFEED platform

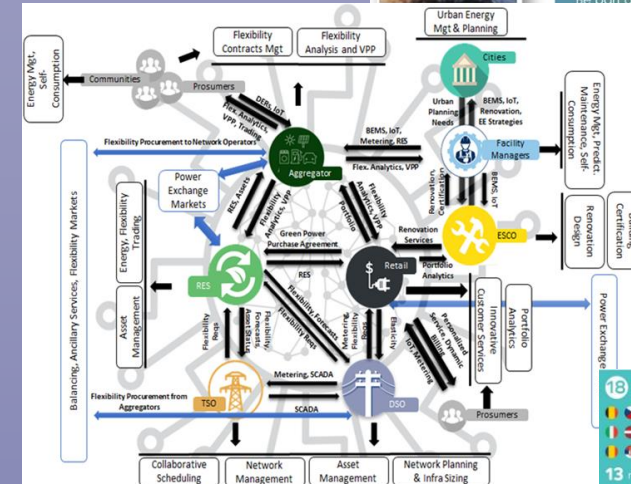


- Connects data sources, applications and consumers
- Electricity & Gas Data Hubs, Central Commercial Register, Electricity price (Nord Pool), weather forecast (Foreca)
- Secure access and management of data
- 12 Estfeed services

European R&I Landscape



Digital Factory Alliance platform



DIEMETER platform



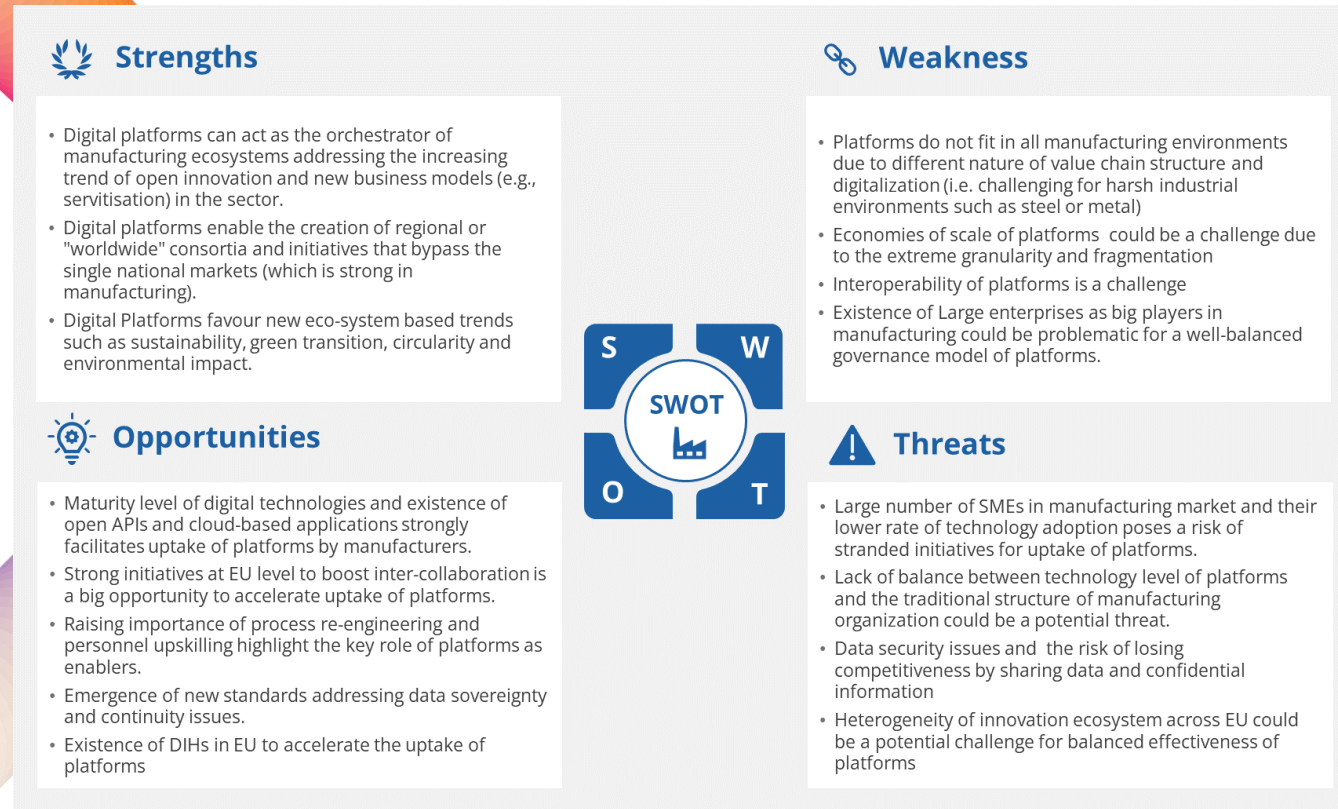
What are the **internal and external factors** in both environments (commercial market and European R&I Landscape) that **boost or impede** the adoption of digital platforms?

What are the specific **domain-based factors** and what are the factors that are **common across different domains**?



Domain-based SWOT analysis

Example of manufacturing



- Increasing trend of digital ecosystem and need for an orchestrator
- Acceptable maturity of technologies
- New standards for data sovereignty
- Existing EU initiatives



- Economies of scale
- Interoperability
- Low level of digital maturity in manufacturing SMEs
- Data security

Domain-based SWOT analysis

Strengths

- Digital platforms facilitate value chain integration in a highly multi-stakeholder ecosystem such as Energy
- Economies of scale of digital platforms is promising considering the extremely wide consumer energy market
- Digital platforms act as the orchestrator for a collective energy ecosystem for operationalization of data-based energy systems

Opportunities

- Decentralize trend of energy market creates a significant need for distributed platforms enabling broader market participation, value chain integration and transparency.
- There is a significant trend of business model change in Energy market and platforms can play a crucial role in business model innovation.

Energy



Weakness

- Local nature of utilities market, heterogeneity of EU member states in terms of data governance and regulatory model and market structure and thus difficulty for Pan-EU harmonization.
- Interoperability of Energy digital platforms is a challenge
- It is difficult to generate a "one-platform-fits-all" reference due to different core functionalities.

Threats

- There is a risk of data security for data providers and data privacy for prosumers and in general a lack of data sharing framework act as barriers.
- Energy is a safety and security intensive domain and has a significant amount of regulatory drag.
- Technology adoption is typically slow (though it has been accelerated in recent years) which poses a risk of stranded initiatives and technology leapfrogging.

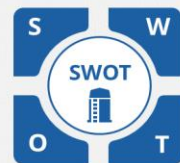
Strengths

- Digital platforms provide a wide service portfolio with numerous services and technologies which is a strong added-value for end-users in rural areas
- Digital platforms accelerate the integration of agri-food value chain through providing a coherent digital space
- Increased awareness and interest of the players of agrifood ecosystem (companies and end-users) through existing demos drives them for adoption of platforms
- Different types of Platforms (centralized, decentralized, service-oriented) are fit for agri-food domain

Opportunities

- Maturity level of technology drives more companies to uptake digital platforms
- Raised awareness and increasing trend of digital transformation in agrifood generates a push of market towards digital platforms
- Favourable policies to support the adoption of platforms in agrifood

Agri-food



Weakness

- Agrifood companies do not usually own required digital skills for platforms adoption
- Lack of proper innovative business models to uptake platforms in agrifood domain
- Interoperability and Standardisation are important issues.

Threats

- Low level of digital maturity in agrifood domain, particularly in the SME market, poses a risk when it comes to technology adoption and visions.
- Fragmented agrifood value chain poses a threat if proper penetration market strategies won't be considered.
- Cultural barriers to share data could be seen as a risk in agri-food domain to slow down the adoption of digital platforms.

Healthcare

Strengths

- Digital platforms strongly support the convergence of healthcare ecosystems on patient value and offer new digital services
- Digital platforms are key enablers to integration the healthcare value chain from professionals to patients
- Digital Platforms offer the required flexibility to divers needs of a complex multi-stakeholder domain such as healthcare.
- Effective role of digital platforms during COVID-19 pandemic could drive their adoption acceleration
- Digital platforms in healthcare domain are adopted having both centralized and decentralized approaches highlighting the flexibility of domain for their adoption apart from the approach.

Opportunities

- The strong trend of new digital services and delivery models in healthcare highlights the role of digital platforms as key enablers of transformational use cases and innovative services.
- The significant trend of shifting towards a patient and citizen-oriented system provides an opportunity for platforms as a mean to facilitate the integration of end-users in the value chain
- The pandemic offered the opportunity to demonstrate the benefits in terms of patient value of these platforms.



Weakness

- Interoperability is a main challenge to adopt healthcare digital platforms due to a strong need of using international healthcare interoperability standards
- There is a lack of proper innovative business models to actively support uptake of healthcare digital platforms
- Data privacy is a challenge which limits use-case adoption and economies of scale even though acts like GDPR could help.
- Healthcare platforms with advanced functionalities are usually received better at regional and community level due to trust challenge.
- Limited engagement of Industry stakeholder with cloud technology could hurdle the effective development of patient value-based platforms

Threats

- The fragmented nature of healthcare market, with stringent regulations on data use, and patient safety and complex governance models to address ethical aspects hinders the adoption of digital platforms.
- Level of digital maturity is not homogeneous across healthcare and life sciences organizations and adoption of truly cloud based architectures is still low.
- Cultural differences in different ecosystems could hurdle the acceptance and deployment of platforms.
- Limited number of national infrastructures in different countries to access critical resources.
- Lack of Global compulsory IoP implementation reference framework at EU level and Incentives attached to it.
- Complexity of governance process for interoperability at national and EU levels.

Cross-domain SWOT analysis

Strengths

- Orchestration and integration of value chain in different domains supporting the convergence of digital ecosystem.
- Bridge the demand and supply market.
- Wide service portfolio
- Scaling of the value chain globalization
- Flexibility of approach

Opportunities

- High maturity level of technologies
- Strong initiatives and funding mechanisms at EU level
- Rising trend of data economy
- Rising awareness for digital transformation
- Covid-19 pandemic as an accelerator



Weakness

- Interoperability and standardization
- Economies of scale of
- Lack proper business models
- Lack of proper governance models
- Lack of proper reference architectures

Threats

- Low digital maturity level of the demand market
- Data security and privacy
- Fragmented value chains
- Heterogeneity of innovation ecosystems

Drivers for the adoption of digital platforms

Technology

- Technology maturity
- Generic and domain-based technologies
- Flexibility and agility

Market

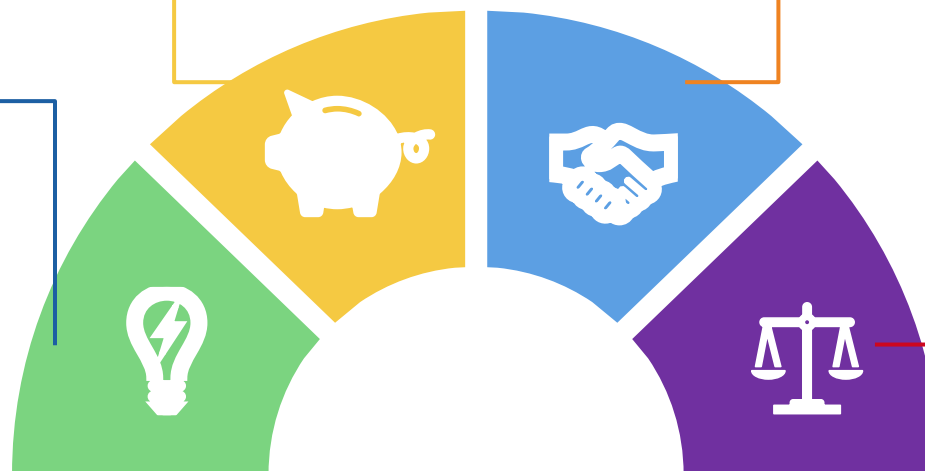
- Shift towards data sharing economy
- Favorable environment for uptake

Operation and Value chain

- Operational efficiency
- Value chain Integration
- Business resilience

Policy

- Platform economy
- Data Act
- EDIH



Barriers for the adoption of digital platforms

Regulatory Compliance

- Insufficient level-playing field for security and data protection
- Fraud and safety risks

Economic Efficiency

- Balancing scale with fair competition
- SMEs inclusion
- Labor market disruption

Technology

- Data quality and interoperability
- Cloud adoption barriers

Business and Organizational Models

- Lack of proper business models
- Lack of proper governance models
- Cultural resistance



Summary Recommendations



- Promote the development of technical solutions to **automate governance, risk and compliance**.
- Promote **exchange of best practices** across EU Member States for dispute resolution mechanisms for data governance.



- Closely **monitor high market concentration and its persistence** over time and then enforce open competition policies.
- Ensure that the implementation EU SME Strategy for a sustainable and digital Europe includes measures that support **SME inclusion in B2B platforms**. For example by setting up Digital Innovation Hubs (DIHs) dedicated to digital platforms.



- Disseminate the usage of open source tools and common technical standards and architectural approaches (e.g. APIs) for **data portability and interoperability**.
- **Collect and disseminate cloud best practices** in particular **for SMEs** and encourage academia and industry associations to support the effort.



- Create **regulatory sandboxes** for the experimentation of new business models.
- Scan current **national and international initiatives** to identify pre-existing ecosystems, or partners to build projects with **critical mass and identify best practices**.

Panel Discussion

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Thank you!

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