Agenda

- **Analysis of the drivers and barriers for the adoption of digital platforms** (Golboo Pourabdollahian – IDC)

- **Technology, organizational and regulatory aspects for the adoption of digital platforms in the Energy sector** (Tasos Tsitsanis – Suite5)

- **Panel Discussion**
  - Alberto Dognin (E-On, RWTH Aachen)
  - Alena Siarheyeva (NuMINT)
  - Marina Rodés Sanchez (Predictby)
  - Sergio Gusrmeroli (Politecnico di Milano)
  - Monique Calisti (MARTEL Innovate)

- **Wrap-up and conclusions**

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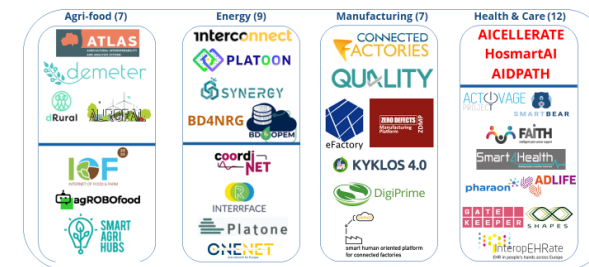**Support the Adoption of Digital Platforms and the development of LSP**

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
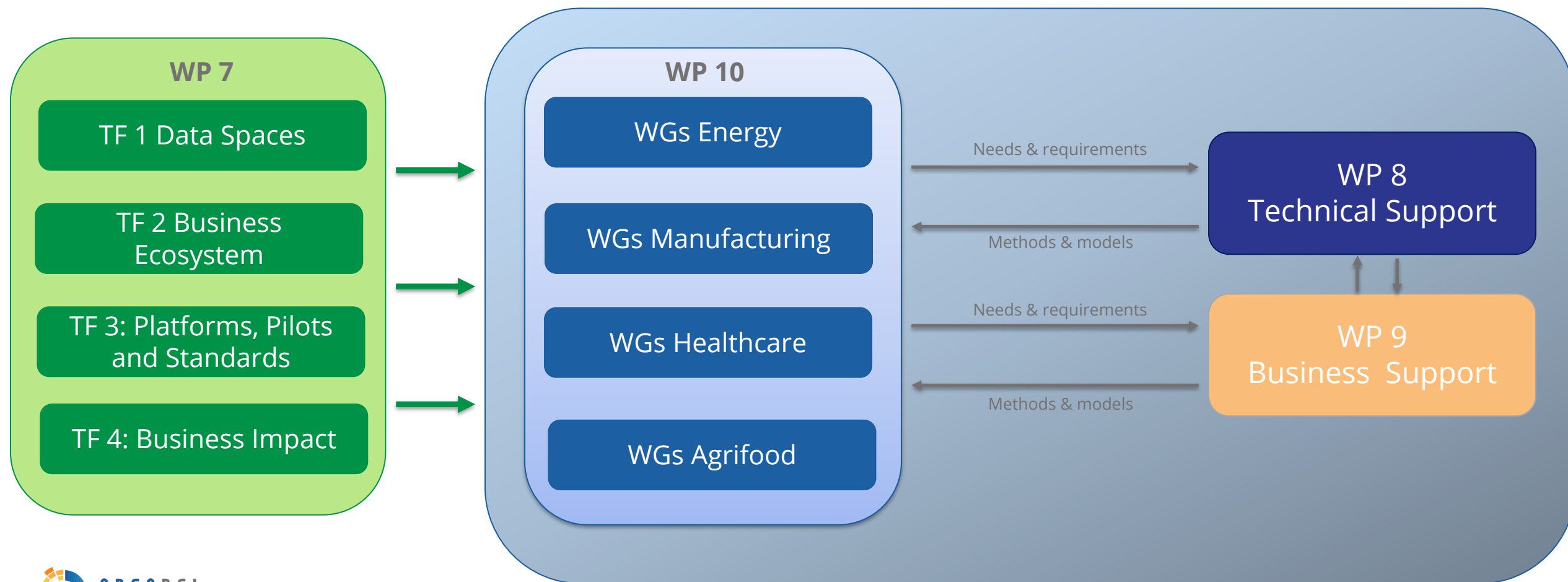- **Busin**ess Models

OPEN DEI in a Nutshell

Task Forces

Working Groups

Internal support

WP 7

- TF 1 Data Spaces
- TF 2 Business Ecosystem
- TF 3: Platforms, Pilots and Standards
- TF 4: Business Impact

WP 10

- WGs Energy
- WGs Manufacturing
- WGs Healthcare
- WGs Agrifood

Needs & requirements →

← Methods & models

Needs & requirements →

← Methods & models
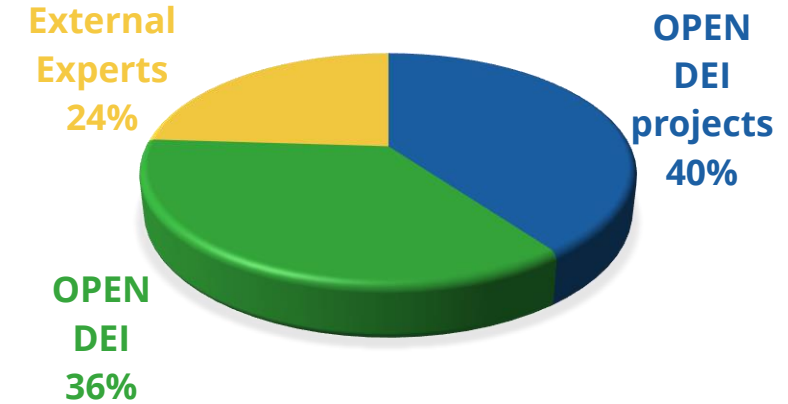
WP 8 Technical Support
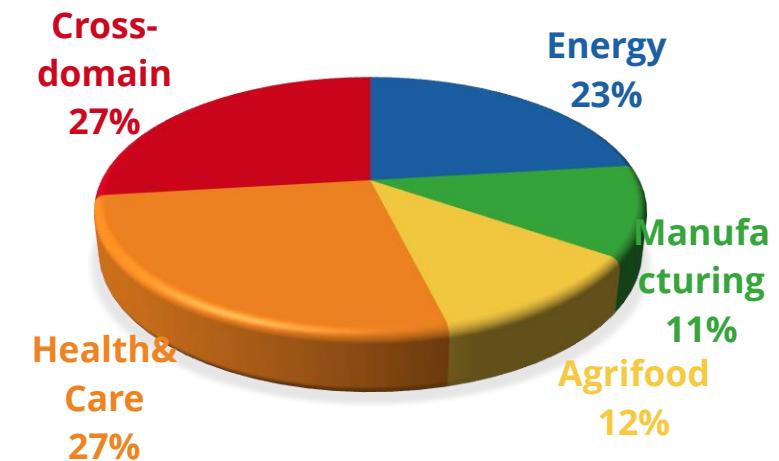
WP 9 Business Support

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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**.*

TF4 MEMBERS PER TYPE

- External Experts 24%
- OPEN DEI projects 40%
- OPEN DEI 36%

TF4 MEMBERS PER DOMAIN

- Cross-domain 27%
- Energy 23%
- Manufacturing 11%
- Agrifood 12%
- Health&Care 27%

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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/

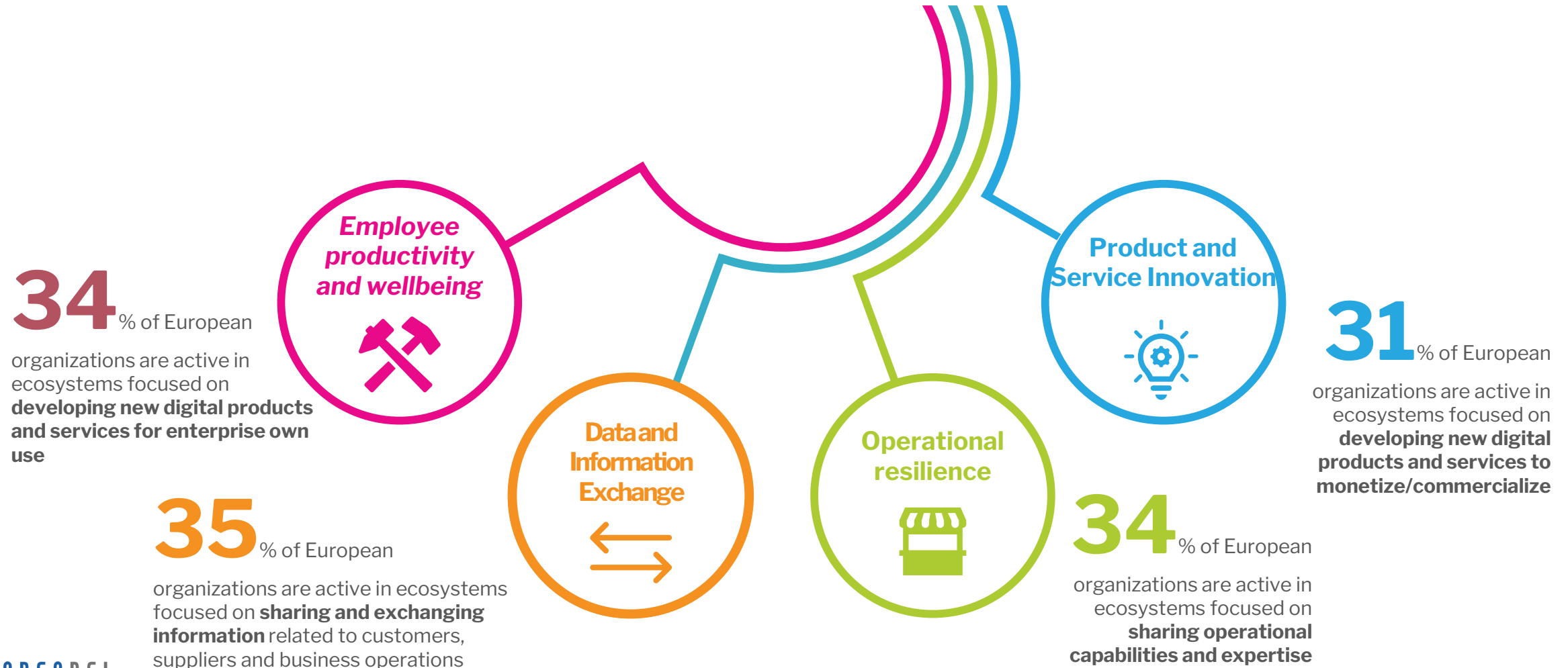Digital technologies need a digital ecosystems, and digital ecosystems need digital platforms to scale.

Employee productivity and wellbeing

Product and Service Innovation

Data and Information Exchange

Operational resilience

34% of European organizations are active in ecosystems focused on **developing new digital products and services for enterprise own use**

31% of European organizations are active in ecosystems focused on **developing new digital products and services to monetize/commercialize**

35% of European organizations are active in ecosystems focused on **sharing and exchanging information** related to customers, suppliers and business operations

34% of European organizations are active in ecosystems focused on **sharing operational capabilities and expertise**
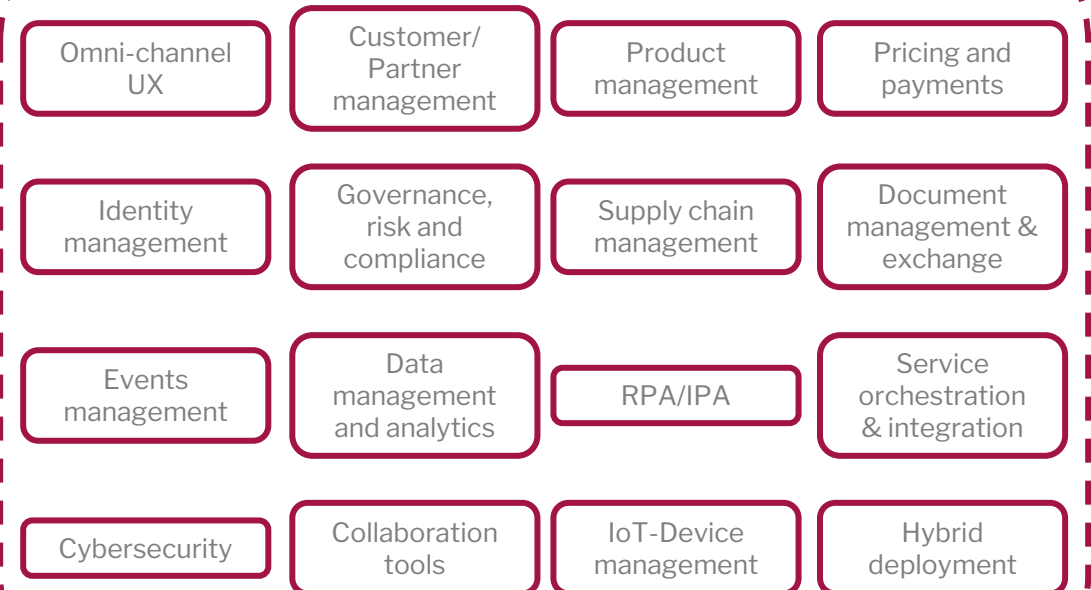
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7

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 digital industry ecosystems?

Technology	%
Cyber security	36%
Data management technology	28%
Systems integration	21%
Internet of things (IoT)	21%
Cloud applications/infrastructure	20%
Advanced/Predictive analytics	17%
ERP (enterprise resource planning)	17%
Customer Data Platform (CDP)	16%
AI/machine learning	15%
Edge-based cloud	15%
SCM (supply chain management)	12%
Blockchain	11%
Process orchestration platform	10%
RPA (robotic process automation)	10%

Examples of B2B platform reference capabilities

Omni-channel UX	Customer/ Partner management	Product management	Pricing and payments
Identity management	Governance, risk and compliance	Supply chain management	Document management & exchange
Events management	Data management and analytics	RPA/IPA	Service orchestration & integration
Cybersecurity	Collaboration tools	IoT-Device management	Hybrid deployment

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Examples of B2B Platforms

Commercial Market

European R&I Landscape

Bosch IoT platform
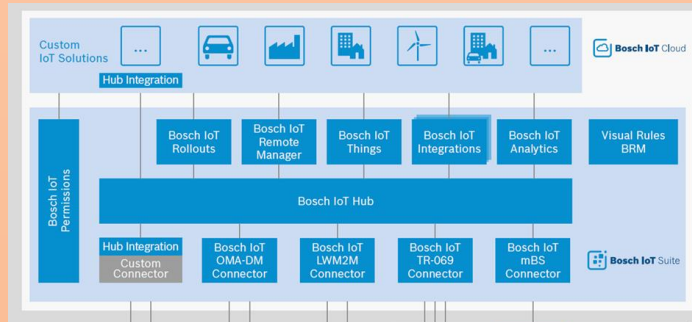
Digital Factory Alliance platform

AGRICOLUS platform
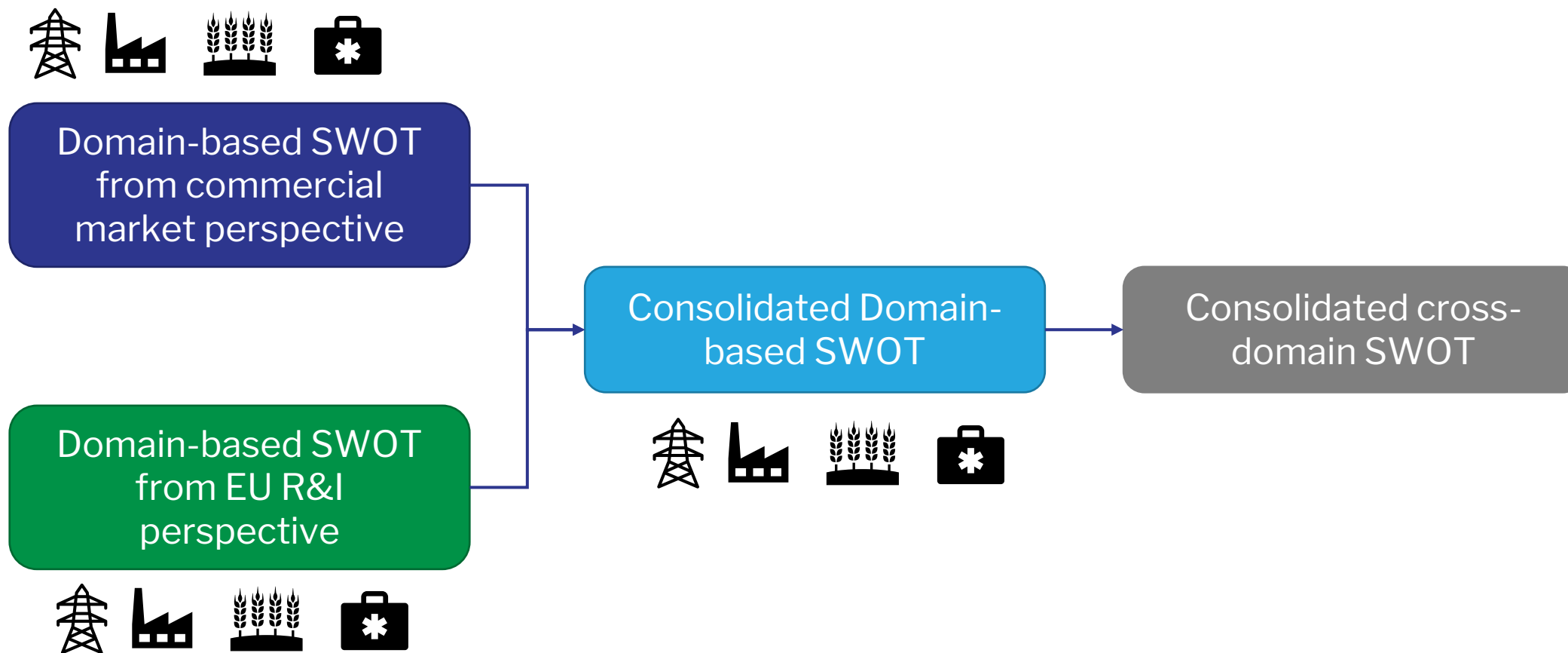
SYNERGY platform

ESTFEED platform
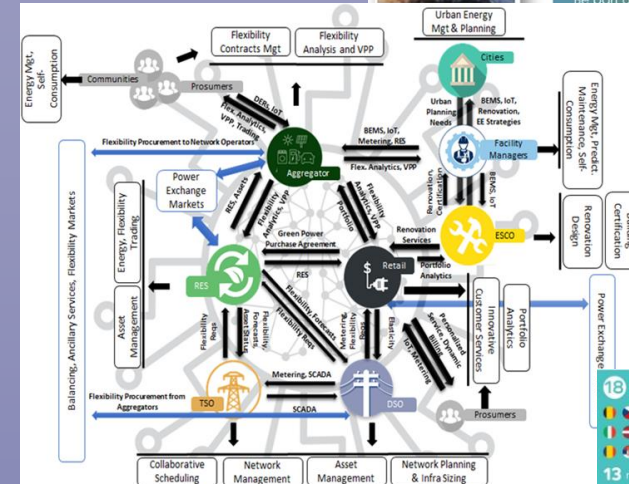
DIEMETER platform

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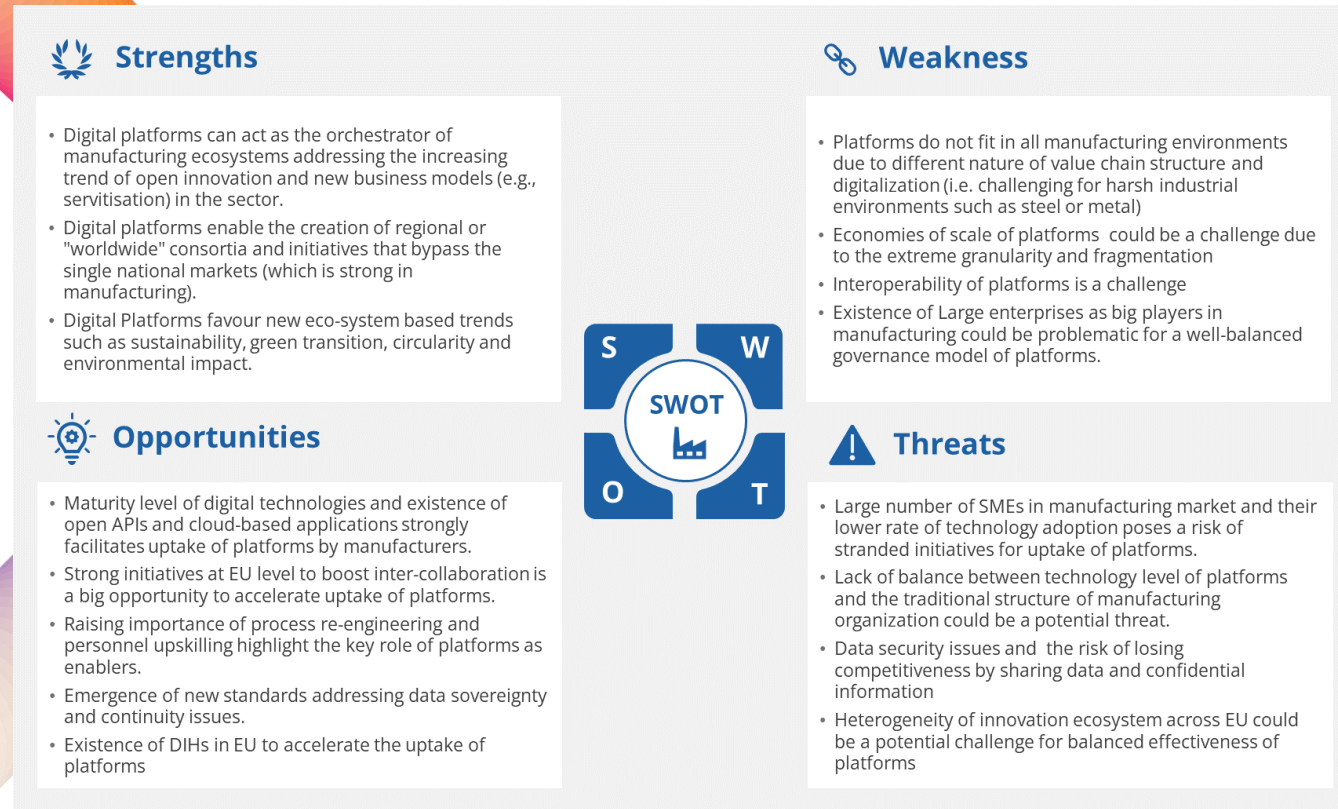
What are the specific **domain-based factors** and what are the factors that are **common across different domains?**

Methodology

Domain-based SWOT from commercial market perspective

Domain-based SWOT from EU R&I perspective

Consolidated Domain-based SWOT

Consolidated cross-domain SWOT

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Domain-based SWOT analysis

Example of manufacturing

Strengths

- Digital platforms can act as the orchestrator of manufacturing ecosystems addressing the increasing trend of open innovation and new business models (e.g., servitisation) in the sector.
- Digital platforms enable the creation of regional or "worldwide" consortia and initiatives that bypass the single national markets (which is strong in manufacturing).
- Digital Platforms favour new eco-system based trends such as sustainability, green transition, circularity and environmental impact.

Weakness

- Platforms do not fit in all manufacturing environments due to different nature of value chain structure and digitalization (i.e. challenging for harsh industrial environments such as steel or metal)
- Economies of scale of platforms could be a challenge due to the extreme granularity and fragmentation
- Interoperability of platforms is a challenge
- Existence of Large enterprises as big players in manufacturing could be problematic for a well-balanced governance model of platforms.

Opportunities

- Maturity level of digital technologies and existence of open APIs and cloud-based applications strongly facilitates uptake of platforms by manufacturers.
- Strong initiatives at EU level to boost inter-collaboration is a big opportunity to accelerate uptake of platforms.
- Raising importance of process re-engineering and personnel upskilling highlight the key role of platforms as enablers.
- Emergence of new standards addressing data sovereignty and continuity issues.
- Existence of DIHs in EU to accelerate the uptake of platforms

Threats

- Large number of SMEs in manufacturing market and their lower rate of technology adoption poses a risk of stranded initiatives for uptake of platforms.
- Lack of balance between technology level of platforms and the traditional structure of manufacturing organization could be a potential threat.
- Data security issues and the risk of losing competitiveness by sharing data and confidential information
- Heterogeneity of innovation ecosystem across EU could be a potential challenge for balanced effectiveness of platforms

S — W — SWOT — O — T

- **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 maturit**y in manufacturing SMEs
- **Data security**

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Domain-based SWOT analysis

Energy

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

Weakness
- Local nature of utilities market, heterogeny 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.

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.

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.

Agri-food

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

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.

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

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.

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

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.

Threats
- The fragmented nature of healthcare market, with stringent regulations on data use, and patient safety and complex governance models to address ethical aspects hurdles 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

Weakness

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

S	W
SWOT	
O	T

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

Threats

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

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Drivers for the adoption of digital platforms

Technology

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

Market

- Shift towards data sharing economy
- Favorable environment for uptake
- Pandemic effect

Operation and Value chain

- Operationall efficiency
- Value chain Integration
- Business resilience

Policy

- Platform economy
- Data Act
- EDIH

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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

Technology

- Data quality and interoperability
- Cloud adoption barriers

Business and Organizational Models

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

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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**.

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IOTWeek

Dublin —— June 20-23, 2022

Thank you!

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