Federal Platform Ecosystems to Counter Monopolists: A Value-Based Vision for the Logistics Industry

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Abstract

Today, we observe the platformization of many industries. Although most platforms fail, a few monopolists have the potential to completely transform industries and their competitive dynamics. In contrast to this, European values, e.g., democracy and freedom, aim to protect today's variety of companies and offers. This paper's goal is to protect European values and companies' competitiveness against potential monopolists. We suggest founding and governing federal platform ecosystems following the "swarm intelligence" principle where many small(er) organizations collaboratively fight off monopolists. While this is currently still a new and untested concept, we selected a use case to make it more tangible and adaptable. The government-funded project aims at a vision for the Logistics Broker (LB) – which is envisioned to become the center-piece of the German logistics industry's federal platform ecosystem. To analyze the context, role, and stakeholders we conducted a workshop study and propose an agenda for future research.

Keywords: Digital platforms, federal platforms, platform vision, logistics, design science

1. Introduction

Today, many traditional industries get overtaken by strong monopolistic platforms (e.g., Amazon, booking.com, and Uber) (Reuver et al., 2018). Only a few of these platform companies produce the services they sell on their marketplaces as they connect supply and demand in a guided, transparent, and request-based way (Asadullah et al., 2018; Guggenberger et al., 2020). Even though these platforms create enormous value, at the same time they can also create ethical concerns e.g., abusing their power and harming competition or customer welfare (OECD, 2020). For example, Amazon used non-public business data of independent sellers who sell on the Amazon marketplace for the benefit of its own retail business (European Commission, 2020a). For these reasons, big global platforms are a threat to the global economy, social welfare, national competitiveness, and sovereignty (Hermes et al., 2020)

In Europe, monopolistic platforms, such as Amazon Marketplace, Microsoft Azure, Android, iOS, or Google Cloud became increasingly important infrastructures filling the European platform gap (Evans & Gawer, 2016; Hermes et al., 2020). However, these platforms, most of which originate outside Europe, already abused their power in the past: For example, Google used its search engine's market dominance to benefit from illegal advantages with one of its own products (European Commission, 2017).

A promising approach to counteract monopolistic platforms is the concept of *federal platform ecosystems* that consists of autonomous and heterogeneous components, such as underlying services or platforms, and an ecosystem in which value creation and appropriation are distributed among federal third-party actors (Blaschke et al., 2019; Sheth & Larson, 1990). Federal platform ecosystems hold the potential to foster innovation, collaboration, fair coopetition, and the combination of resources. In contrast to single organization strategies, companies join to form a large ecosystem extending the capacity of the individual participants (Rosenberg, 2016). The approach is described as the *swarm intelligence strategy* where many (smaller) companies collaborate in a coopetitive way defending themselves from monopolists to increase their chances of fighting them off (Rosenberg, 2016).

The phenomenon of federal platform ecosystems emerges in several industry sectors, e.g., the automotive and logistics sector. In the logistics sector,

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two initiatives, the FEDeRATED project[1] and the Silicon Economy[2], aim at building federal platform ecosystems in Europe to save digital sovereignty. However, the notion of federal platforms in research is still vague and understudied. Nevertheless, researchers acknowledge the importance of new platform concepts that are in line with European values (Hermes et al., 2020; Jin, 2021). To make the concept of federal platform ecosystems tangible, we focus on the government-funded Silicon Economy project. The project aims at strengthening the European logistics industry by establishing industry-wide standards based on an open-source infrastructure consisting of reusable software-based services covering different logistics-specific functions and enabling organizations to build their services and platforms. The technical aspects are complemented by open governance structures allowing heterogeneous organizations to participate. To connect the organizations, the project provides the Logistics Broker (LB) that enables every participant to connect to the federal platform ecosystem. The vision is to create a federal platform ecosystem where logisticians are eager to join as it respects and fosters the European values. Therefore, we address the following research question:

"How to design the LB's vision to protect European values and the companies' competitiveness against potential monopolists?"

The paper is structured as follows: After the introduction, Section 2 outlines the theoretical background, particularly focusing on European values, digital platforms, and federal platforms. Section 3 illustrates the research design. In Section 4 we describe the workshop design and results. Section 5 derives additional streams for future research before the paper finalizes with a conclusion and outlook.

2. Theoretical Background

2.1 European Values and Regulations

The European Union is based on the principles of democracy and shares the key values of human dignity, freedom, equality, and solidarity (Official Journal of the European Union, 2012). It aims at the sustainable development of Europe based on balanced economic growth and a highly competitive social market economy that promotes scientific and technological advances (Official Journal of the European Union, 2007).

In the logistics' offline market, European values are already enforced by laws increasing the transparency and the companies' responsibility throughout the supply chain (e.g. see the Directive on Corporate Sustainability throughout the Supply Chain) (European Commission, 2022b).

The transition toward a balanced and sustainable development is fostered by establishing international digital partnerships, taking into account European standards and values, aiming at a human-centric digital transformation by 2030 (European Commission, 2021). The intention is to accelerate innovation and an open, fair, diverse, democratic, and confident digital Europe (Publications Office of the European Union, 2020a). The need for digital transformation is highlighted through the evidence of monopolistic platforms that act as gatekeepers to markets, customers, and information (Publications Office of the European Union, 2020b, p. 5). To advance the European digital sovereignty, five policies including data governance (e.g., encouraging open data, developing data pools, and facilitating data sharing) and constraining platform power (making sure relevant players operating in Europe respect EU law and values, e.g., by introducing the Digital Markets Act (DMA) and Digital Service Act (DSA) are identified (Roberts et al., 2021). By establishing the DMA/DSA the EU aims to foster the presence of its values in the digital world equivalently to the introduction of the previously mentioned Directive on Corporate Sustainability (European Council, 2022) Especially among small businesses the DMA promotes effective competition in digital markets, higher innovation potentials and service quality. In addition, the reduction of the asymmetries between the gatekeepers and other platforms is expected to create a consumer surplus of 13 billion Euros by 2025 (European Commission, 2020b). Finally, the European union defines six digital rights (people at the center, solidarity and inclusion, freedom of choice, participation, safety and security, sustainability) that are fundamental to promote a digital transition shaped by European values (European Commission, 2022a).

Besides politics, also private organizations identified the opportunities and the necessity to shape digital transformation. DIGITALEUROPE, a trade organization consisting of members of the digitally transforming industries, derives three goals related to European values (DIGITALEUROPE, 2019):

- An inclusive and social Europe that promotes participation and builds trust.

[1] http://www.federatedplatforms.eu/

[2] https://www.silicon-economy.com/en/homepage/

- An innovative and sustainable Europe that brings benefits to the society at large and invests in future generations.
- A strong and united Europe that reflects European values and thrives globally in an open economy.

2.2 Digital Platforms

Most research characterizes platforms based on two predominant views (Asadullah et al., 2018): From a technological perspective, platforms are defined as the "extensible codebase of a software-based system that provides core functionality shared by apps that interoperate with it, and the interfaces through which they interoperate" (Tiwana, 2014, p. 7). The market-oriented view describes a platform as the basis for connecting and orchestrating two or more actor groups to facilitate transactions (King, 2013; Reuver et al., 2018). Fundamentally, platforms give the basis upon which third parties can provide complementary offerings, such as products, technologies, or services (Gawer & Cusumano, 2013). The interacting parties that are orchestrated on the platform form the ecosystem that is defined as "a set of actors with varying degrees of multilateral, non-generic complementarities that are not fully hierarchically controlled" (Jacobides et al., 2018, p. 2264). The key characteristic and success factor of platforms is the presence of network effects that are created by the platform ecosystem (Evans & Gawer, 2016; Reuver et al., 2018). Network effects occur when every additional user increases the platform's value for every user on the same side (direct network effects) or the other side (indirect network effects) (Katz & Shapiro, 1994; Tiwana, 2014).

Strong and positive network effects facilitate the "winner-takes-all" phenomenon as users will tend to converge on one platform (Eisenmann et al., 2006). The phenomenon describes platforms that strive for absolute dominance in their market. Once they reach market leadership, it is almost impossible for competitors or state-sponsored platforms to dethrone the dominant monopolistic platform (Srnicek, 2017). Also, many platform markets can be served by a single platform so that the winner of the battle will most likely "take all" (Eisenmann et al., 2006). Monopolistic platforms apply aggressive strategies, such as platform envelopment, exclusion strategies, or mergers and acquisitions to enter new markets and to prevent potential future competition (Baker, 2021; Hermes et al., 2020). As a result, monopolistic platforms, such as Amazon, Apple, Facebook, or Google, hold the power to dictate terms, upend entire sectors, and oppress smaller rivals (Durkee, 2021). The online e-commerce platform Amazon, for example, is continuously building up its own logistics infrastructure, acquiring new organizations from competitors, and expanding into new markets (e.g., voice technology or cloud services) (Durkee, 2021; Hermes et al., 2020; Koch, 2019).

Therefore, new forms of platforms, that are more compatible with the previously mentioned European values, are needed to ensure fair competition. As a counter-proposal, we suggest the concept of federal platform ecosystems to help Europe move towards a self-sufficient platform economy respecting European values.

2.3 Federal Platforms

On a basic level, federal platforms can be characterized by the concepts of federal architecture and federal networks (Blaschke et al., 2019; Heimbigner & McLeod, 1985). Federal architecture refers to a collection of independent but cooperating systems that enables cross-organizational process coordination (Amend et al., 2021; Heimbigner & McLeod, 1985). Early research reports on federal architecture in the case of cooperating database systems consisting of possibly heterogeneous components that "are autonomous yet participate in a federation to allow partial and controlled sharing of their data" (Sheth & Larson, 1990, p. 189). Recent papers analyze blockchain technology in the context of federal architectures to enable and facilitate the coordination of cross-organizational processes (Amend et al., 2021). Regarding digital platform ecosystems, federated networks are referred to as an ecosystem type that "enact[s] open-loop systems in which value creation and appropriation is distributed among federated third-party actors. These actors intentionally co-innovate with other external third-party actors to extend the capabilities and market reach of their mutual digital platform." (Blaschke et al., 2019, p. 580). Together, the concepts of federal architectures and federal networks lay the foundation to describe federal platforms from a technological and economical perspective that is consistent with the dichotomous view of platforms in literature (King, 2013; Reuver et al., 2018; Tiwana, 2014). Therefore, we propose the following integral definition for a federal platform and its underlying ecosystem based on (Blaschke et al., 2019; Sheth & Larson, 1990):

A federal platform consists of autonomous and heterogeneous components, such as underlying services or platforms, and an ecosystem in which value creation and appropriation is distributed among federal third-party actors.

3. Research Design

Our research stems from the Silicon Economy that aims at enabling and digitalizing the European logistics industry and its existing companies. The support is threefold: First, it designs, implements, and offers logistics-specific OS components. Second, it supports logistics companies in identifying and designing suitable business models. Third, it aims at initiating, connecting, and federating the European logistics' industry through a federal platform ecosystem - via the LB. The goal is to prevent the European logistics industry from eventually getting overtaken by a monopolistic platform acting as the "winner-takes-all". To make this goal a reality we decided to take a step back to carefully analyze the need, benefits, and lever of federal platform ecosystems in the context of the logistics industry and the European values. This initiated the research and led to our research questions.

We follow *Hevner's three-cycle view* (Hevner, 2007) which proposes to connect and integrate the *relevance*, *design*, and *rigor cycles* (see **Figure 1**). This approach belongs to design science research and supports the design of an artifact. Artifacts are generally known to guide the users in focusing on the relevant parts by abstraction (March & Smith, 1995). In our case, the aim is to derive the *vision of the LB*. It is the foundation to align all involved stakeholders and derive suitable requirements and implementation strategies. A vision should emphasize a distant ideological objective that includes the values, hopes, and ideals of an organization and related stakeholders (Yukl, 2013). Yukl notes that "a vision should be simple and idealistic, a picture of a desirable future, not a complex plan with quantitative objectives and detailed action steps" (Yukl, 2013, p. 100). In addition to this vision, the workshop study approach can also be viewed as an artifact. It can be adopted by other industries or projects aiming at federal platform ecosystems which need to design a suitable vision.

As no commonly accepted vision of the LB exists, this paper aims at deriving one to support its design and implementation (relevance – step 1). Then, we define the paper's method (design – step 2). Based on existing literature and project experience we analyze today's understanding of federal platforms (rigor – step 3). For that, we search the literature for "federal platform", "federated platform", and "federated ecosystems". Unfortunately, today neither much research in this direction nor successful industry examples exist. In addition, we also study "vision" and "vision design". Here, we especially found vague action guides and frameworks which do not fit our purpose 1:1. Thus, we design a new workshop study customized to the research's needs (design – step 4). We select the workshop format to ask, guide, and evaluate the participants in an interactive setting as it is commonly done in IS research and DSR (Ørngreen & Levinsen, 2017; Thoring et al., 2020). This is particularly valuable to collect multi-step derived insights.

Then we conduct the six workshop studies (relevance – step 5). For that we select six workshop participants who all work or worked on the government-funded project. Together, they cover the following functions: Chief of LB, Lead Software Architect, CEO of an Open-Source Foundation, Community Manager, Product Owner IT project, and Assistant Professor with business model expertise. We decided to do the workshops with one expert at a time

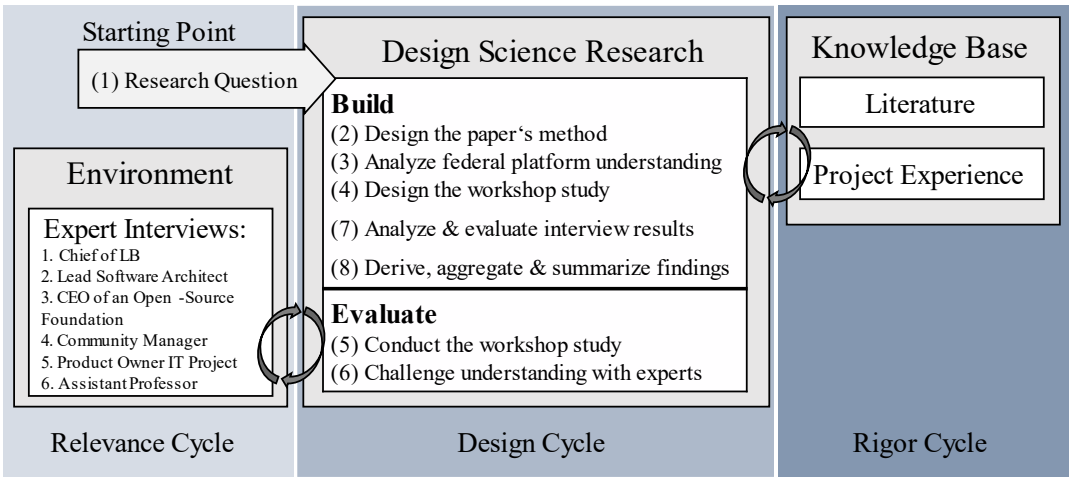

Figure 1. DSR Method (see Hevner's 3-Cycle View).

to ensure that they do not bias, but rather complement each other's findings.

The workshops address the European values, the as-is, and the to-be analysis to identify the current gap in logistics. Based on this context understanding and revealed gap the workshop participants are asked to define federal platforms and the five key elements for success. These set the basis for defining the LB's vision in one sentence. While designing the workshop study we also pre-defined our answers for each workshop step. These answers are meant to be challenged by the participants after each workshop step and to complement their findings (relevance – step 6). Once all workshops are conducted, we analyze and evaluate the workshop results (design – step 7). Based on all six workshops we aggregate the answers to derive one final LB vision and summarize all findings (design – step 8). We present the workshop outline, participants, and results in the next chapter.

4. Towards a Federal Platform Ecosystem in Logistics

4.1 Workshop Execution

We conducted six digital workshops. The workshops took place in online meetings and lasted about 60 minutes each. Each workshop was conducted with two or more interviewers to ensure that all relevant information gets captured. All workshops followed the same ten-step workshop concept:

1. Name the most relevant (digital) values for society and economy.
2. Choose the five most relevant values in logistics.
3. Define today's logistics industry as-is.
4. Adjust our pre-defined as-is analysis.
5. Define the concept "federal platform ecosystem".
6. Define your to-be vision for the logistics industry.
7. Adjust our pre-defined to-be analysis.
8. Name the five key elements of the LB.
9. Specify your vision of the LB.
10. Please provide feedback on the workshop.

The workshop's goal was to derive a holistic value-based platform vision. First, the participants named the most relevant (European) values in the logistics context. Then, they had 15 minutes to fill in the pre-designed as-is analysis table defining their understanding of today's state of the logistics industry. The table consists of four subdivisions (social, economic, legal, and technological) derived from the PEST analysis and three rows (status quo, satisfaction, and challenges). In step 4, the participants reviewed our pre-filled analysis and supported, suggested modifications and/or deletions of our findings.

The second half of the workshop focused on the vision of the LB. To ensure the vision's context fit, it emphasized the design of a desired to-be analysis with four subdivisions (federal, economic, legal, and technological) and three rows (future goals, opportunities/benefits, and challenges/risks). We adapted the social category to "federal" to intensify our focus on shared and open aspects. Afterward, the participants evaluated our pre-defined findings and suggested modifications. Based on the participant's understanding of their own and our (pre-)defined as-is and to-be analysis gaps they defined their vision for the LB.

4.2 Workshop Results

To be in line with Yukl (2013) and provide a vision that includes the values, hopes, and ideals of the project's stakeholders, the participants choose the five most important values in logistics from a given list. In all workshops, the participants named "digital sovereignty", "solidarity and inclusion", and "sustainability" as the most important values. Followed by the values "data protection" and "freedom". The values were used as the basis to derive an idealistic and desirable view of the LB as a prototype for federal platform ecosystems.

The workshop revealed that today's logistics companies struggle with a negative reputation e.g., employees face hard working conditions making the logistics sector an unattractive employer. Furthermore, one interviewee explained that there are "over one million logistics companies in Europe" leading to a high fragmentation of the logistics industry causing high pressure and fierce competition. Even large logistics companies hold only small market shares. Therefore, platform solutions from external providers are met with suspicion as the companies fear negative effects on their business and dependence on platform providers. Moreover, logistics companies are struggling with aging technological systems and missing budgets for innovation making it difficult to join external systems. Another reason for the lack of progress in digitalization is the poor data quality and the complexity of data protection as the fear of losing intellectual property to external parties prevents companies to join a platform. In summary, the participants see great potential in the logistics sector for future innovations. However, they also agree that logistics faces several challenges that need to be addressed in order to enable digital transformation and to enter the platform economy. A federal platform ecosystem is considered a desirable solution to address

the logistics challenges. The Silicon Economy aims at creating a federal ecosystem based on the LB that provides governance and architecture infrastructure for it. Next, the potentials, risks, and future vision of a LB are described by the participants based on the PEST framework. **Table 1** summarizes the workshop's outcome.

Table 1: Findings of the Workshop Study

Political 	• Digital Sovereignty • Legal framework to facilitate cooperation • Smart Contracts • Digital products embracing European values
Economic 	• Cross-company and flexible service bundles • Standardized pricing and payment structures • Fair value creation and sharing • Shared costs and risks
Social/Federal 	• Managerial openness (e.g., open strategy) • Counteracting monopolistic structures • Fair and inclusive participation • Consortium or community as governing instance
Technological 	• Technological Openness (e.g., open source) • Standardized basic components and interfaces • Interoperability • Collaborative development

In the *political* category, the aim to counteract monopolistic platforms to secure digital sovereignty was highlighted. The interviewees argue that it is particularly important that companies develop own competencies and infrastructures. For example, IT infrastructures should be established locally to secure digital sovereignty. Furthermore, the interviewees see politics in need to establish legal frameworks that enable open and fluid ownership structures to facilitate cooperation. Specifically, in Europe, data is strictly regulated by the data protection regulation and ensures "humanity in a digital world" as stated by one interviewee. However, some regulations slow down innovation and cooperation in Europe. For example, one interviewee mentioned the need to adapt current legal frameworks to a digital world. On the other hand, the interviewees see the need of creating digital products following European values. Therefore, the LB is designed in a way that the values of democracy, freedom, ethical governance, and trust are secured in the resulting federal platform ecosystem.

Next, in the *economic* category, one of the desired outcomes is to offer, compare, and use a wide variety of services that can be flexibly combined across different companies. Furthermore, the LB acts as the intermediary instance to autonomously manage the services offered by the participants in the federal platform ecosystem. As margins in logistics are relatively small, logistics companies avoid joining platforms as they fear a price war. Therefore, the LB offers standardized pricing regulations and payment structures. One participant mentioned the goal of fair value creation and sharing amongst the platform actors. Finally, the participants highlighted the advantage of cooperation to share costs and risks by implementing and operating a federal platform using the LB.

Regarding the *social* category, the insights of the to-be analysis show that a single logistics organization is not likely to overcome the described challenges on its own due to the lack of resources and its small market shares. Thus, a federal platform ecosystem acts as a neutral instance that unites the fragmented market and enables it to enter the digital world. An interviewee stated that a federal platform ecosystem should ensure fair and inclusive participation enabling SMEs as well as large companies to interact equally. The federal platform ecosystem is governed by a consortium or community that prevents monopolistic structures and motivates external participants to join. To enter the federal platform, companies must embrace a certain managerial openness to establish shared governance structures and processes, such as open strategy. The category is particularly important as the values of digital sovereignty, participation, and freedom were often addressed by the interviewees. Therefore, the social (synonymously *federal*) factor should be given special attention in the implementation of the LB as center-piece of the federal platform ecosystem. The participants agree that the LB's biggest goal is to counteract potential monopolistic platforms.

The last dimension consists of *technological* aspects. The technological infrastructure, such as basic components and interfaces, is open source to secure interoperability amongst the participants. This has the advantage that the LB can be integrated into existing local infrastructures. Also, participants can work collaboratively on open-source components enabling several open-source potentials, such as high quality or lower costs. As a result, the LB connects local services and organizations through the open-source infrastructure to a federal platform ecosystem. However, organizations need a certain digital maturity to use the services of the LB. In summary, the participants' shared technological idea of the LB is described as follows: A federal platform on which standardized and secure services can be searched, compared, and booked.

Still the major challenges enabling the LB need to be addressed. For example, increasing the LB's

acceptance and organization's readiness to connect with the LB. This is important as the threat of monopolists can only be mitigated if a critical mass of existing organizations participates. To ensure fair conditions it is important that small logistic companies are not overrun and threatened by large companies. Another critical issue is to design governance structures ensuring that the LB itself cannot turn into a monopolist.

However, if the greatest challenges can be solved, a competitive counter-proposal to monopolistic platforms arises which is described in the LB's vision. To create a desirable and value-based vision, we merged the results of the European values (step 2), the to-be analysis (step 6), and the vision (step 9) to provide an idealistic yet simple picture of the LB. The quintessence of the participant's vision was the conceptualization of an inclusive platform ecosystem that allows everyone (primarily companies, but also non-profit organizations, and individuals) to participate. The LB is intended to simultaneously position the European values and strengthen its companies' competitiveness in logistics. To achieve this, the federal platform ecosystem's strategy is comparable to the swarm intelligence strategy of fishes where survival within a (collaborating) swarm is significantly more likely than independently. Similarly, the LB's strategy builds on swarm intelligence ensuring not to offer any attack surface to potential monopolists (see **Figure 2**).

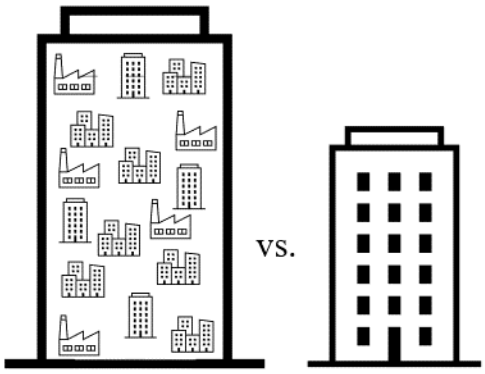

Figure 2: Federal Platform Ecosystem Vision – Adopting the Swarm Intelligence

Thus, its vision can be best described as *"One platform from all for all: Together, because we want, can, and must to ensure our survival"*.

5. Proposed Research Agenda

In the following, we propose a research agenda further exploring the context, role, and success criteria of federal platform ecosystems. We address the research directions via the four categories of PEST.

5.1 Political

Ideally, the new ecosystem and collaboration structures are also supported by supportive legislation nudging companies towards joining. This would accelerate attracting a critical mass significantly. Possible research questions are:

- How can legislation support federal platform ecosystems?
- Which defence strategies are needed to protect the values of a federal platform ecosystem?
- Which defence strategies/contracts/laws can prevent monopolization of federal platform ecosystems?

5.2 Economic

At the beginning of this paper, we identified that digital platforms can transform industries and turn them into winner-takes-all markets. To strengthen the position of currently established logistics companies we pledge for a federal platform ecosystem enabling complementing effects and co-opetition. This democracy, freedom, and openness-driven approach following the idea of "together we are stronger than potential monopolists" enables and strengthens European values and companies. However, up until now, these are just assumptions. As federal platform ecosystems come with great investments it needs to be ensured that industry and its companies will benefit from it. This translates into a long-term cost-benefit ratio where the opportunities outweigh the threats. Potential research questions are:

- What are the success criteria ensuring that federal platform ecosystems add value for industries?
- How can users share value among each other?
- What are potential incentives or barriers to join?
- Which (new) business models are possible?
- Which role do business models take in the development of federal platforms?

5.3 Federal (Social)

The federal dimension has two facets. First, is the impact of federal platform ecosystems on society. This includes e.g., competitive companies and solutions better fitting the European values. Second, the ownership structure of the federal platform ecosystem influences whether companies trust and join it. Here, research questions of interest could be:

- How to prevent that owners (could) turn federal platform ecosystems into monopolists?
- Should the federal platform ecosystem act as a centralized (e.g., neutral instance) or decentralized (e.g., peer-to-peer) governance infrastructure?
- How can federal platform ecosystems gain trust?
- What impact do federal platform ecosystems have on society?

5.4 Technological

Once the conditions are refined the federal platform ecosystem can be built. The development comes with several technological challenges as the federal platform ecosystem's success is based on enabling and supporting a variety of stakeholders and their unique needs. Potential research questions are:

- What are the relevant technological requirements for the development, implementation, operation, and maintenance of federal platform ecosystems?
- Should the LB have a centralized (e.g., LB as meta platform) or decentralized (e.g., many LBs as infrastructure) platform architecture?
- How can standardization be ensured in a federal platform?
- How does a trusted development environment for working collaboratively look like?

5.5 Discussion

Federal platform ecosystems remain a relatively new and unexplored research field. Our results contribute to this understudied field; however, further research needs to be done to concretize and implement the vision of federal platform ecosystems. Our research agenda aims at reducing this gap by precisely addressing aspects that determine political/legal frameworks, economic/managerial structures, and technological specifications embedded in a social context (see section 5.1-5.4). Each research question includes a plethora of potential underlying questions that could vary depending on their contextualization (e.g., industry, geographical location, competitive situations). However, a general overview is given in the next section that describes contributions, limitations, and outlook.

6. Contributions, Limitations & Outlook

This paper provides the vision of a federal platform ecosystem as counter-proposal to the predominant monopolistic platforms observed in practice. Monopolistic platforms tend to dominate whole industries once they reach market leadership. In Europe, monopolists, such as Amazon, Apple, Facebook, or Google have become increasingly important infrastructures (Durkee, 2021; Hermes et al., 2020; Koch, 2019). However, most of these platforms are incompatible with European values as demonstrated by several anti-trust laws or cartelization (Baker, 2021; European Commission, 2017, 2020a). Therefore, our paper presents a more compatible approach by answering the research question on "*How to design the LB's vision to protect European values and the companies' competitiveness against potential monopolists?"*. To answer the research question, we analyze one government-funded project developing the LB. The LB is intended to design the first federal platform ecosystem in the logistics sector. For this, we follow Hevner's three-cycle view (Hevner, 2007) based on design science research to conceptualize the LB's vision. Due to the sparse research on federal platforms, we conduct six independent workshops to generate empirical insights. The findings of the workshop study highlight the need for a federal platform ecosystem based on fair participation and open structures to secure the competitiveness and digital sovereignty of the European logistics industry. Summarized the vision of the LB is described as "one platform from all for all: Together because we want, can, and must to ensure our survival". As the topic of federal platforms is still in its infancy, we derive a research agenda proposing further research avenues.

This paper shows the following **research limitation**: We focused on federal platforms excluding similar concepts, such as "open platforms" or "decentralized platforms" as most projects in practice use the term "federated" or "federal" (e.g., see Federated or Silicon Economy) to describe their platform ecosystems. Thus, we aimed at addressing particularly the conceptual white spot "federal platforms" in research. Also, we only focused on one case, the LB for the logistics industry, limiting our focus on one project and one industry. Other researchers might derive a different conceptualization of federal platforms. Therefore, a further multi-case study analyzing different sectors would benefit from a more holistic view of the topic.

Our paper provides several managerial and scientific contributions. In terms of **managerial contributions** we propose an alternative to monopolistic platforms that could benefit not only the logistics sector but also related ones, such as manufacturing or automotive. The concept of federal platform ecosystems is interesting for industries that are already in a monopolistic stage ruled by a single organization and the ones still highly fragmented consisting of many competing companies. Thus, other

practitioners might use the vision of the LB as a blueprint to derive federal platform ecosystems that support European values and ensure the digital sovereignty as well as the competitiveness of each participant. Furthermore, practitioners can use the research agenda to shape new platform ecosystems benefiting their value creation.

Regarding **scientific contributions**, our research can act as a starting point for analyzing further projects aiming at federal platform ecosystems and contributing to the literature. As the research on federal and open platforms is still limited, we provide the first conceptualization of federal platform ecosystems. Our results can act as a guideline to systematically describe federal platform concepts based on a PEST analysis. Furthermore, our research provides an integral view of societal aspects in Information Systems research by integrating European values as the basis for creating visions of digital artifacts. An integrated view in further research is particularly important in light of the recent crises, which highlight the pitfalls of becoming too dependent on single companies or states (Simeu, 2021). Finally, our research agenda sets the foundation for further research on federal platform ecosystems integrating political, economic, social/federal, and technological aspects.

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