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Corporate Sustainability in the Age of Platforms: How Impact is
Co-Created Across Ecosystems

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Abstract

Digital platforms are increasingly shaping economic exchange, cultural norms, and societal interactions, positioning them as influential actors in global sustainability transitions. However, existing research has predominantly examined platform firms through the lens of competition, innovation, and value capture, leaving limited understanding of how such firms contribute to environmental and social value creation. This research investigates how digital firms integrate sustainability into their business models and orchestrate sustainability outcomes through their ecosystems. Drawing on stakeholder theory and legitimacy theory, the study examines how firms negotiate societal expectations and co-create sustainability with interdependent actors.

A qualitative, multiple case study design was employed, analyzing sustainability reports and corporate documentation from four global platform firms, namely Meta, PayPal, Zalando, and Spotify. The comparative analysis reveals that sustainability in digital contexts depends on business model logics and varying degrees of ecosystem interconnection. The findings show that firms with low direct control over their ecosystem participants tend to mobilize symbolic governance tools and influence to pursue legitimacy. Conversely, firms whose business models involve strong complementarities or material impacts integrate sustainability more structurally by reconfiguring operations, incentivizing partner alignment, and embedding governance mechanisms into ecosystem coordination.

The study makes three main contributions. First, it demonstrates that sustainability in digital ecosystems is co-created through negotiations with partners, users, and stakeholders. Second, it expands legitimacy theory by showing that digital firms actively orchestrate responsibility through ecosystem governance. Third, it offers practical insights for managers and policymakers on how to design sustainability strategies that reflect platform dependencies and distributed accountability.

By highlighting the different ways digital firms approach sustainability, the study advances the understanding of how responsibility is enacted in the platform economy and clarifies the conditions under which digital ecosystems can enable, and not just signal, sustainable change.

Kurzfassung

Digitale Plattformen prägen zunehmend den wirtschaftlichen Austausch, kulturelle Normen und gesellschaftliche Interaktionen und positionieren sich damit als einflussreiche Akteure in globalen Nachhaltigkeitstransitionen. Die bestehende Forschung hat Plattformunternehmen jedoch vorwiegend durch die Linse von Wettbewerb, Innovation und Wertabschöpfung betrachtet, sodass bislang nur begrenzt verstanden wird, wie solche Unternehmen zur Schaffung ökologischer und sozialer Werte beitragen. Diese Arbeit untersucht, wie digitale Unternehmen Nachhaltigkeit in ihre Geschäftsmodelle integrieren und Nachhaltigkeitsergebnisse innerhalb ihrer Ökosysteme orchestrieren. Unter Rückgriff auf die Stakeholder-Theorie und die Legitimations-theorie analysiert die Studie, wie Unternehmen gesellschaftliche Erwartungen verhandeln und Nachhaltigkeit gemeinsam mit voneinander abhängigen Akteuren ko-kreieren.

Es wurde ein qualitatives, multiples Fallstudiendesign angewandt, bei dem Nachhaltigkeitsberichte und Unternehmensdokumentationen von vier globalen Plattformunternehmen analysiert wurden, namentlich Meta, PayPal, Zalando und Spotify. Die vergleichende Analyse zeigt, dass Nachhaltigkeit im digitalen Kontext von Geschäftsmodelllogiken und unterschiedlichen Graden der Ökosystemvernetzung abhängt. Die Ergebnisse verdeutlichen, dass Unternehmen mit geringer direkter Kontrolle über ihre Ökosystemteilnehmer dazu tendieren, symbolische Governance-Instrumente und Einflussmechanismen zu mobilisieren, um Legitimität zu erlangen. Im Gegensatz dazu integrieren Unternehmen, deren Geschäftsmodelle starke Komplementaritäten oder materielle Auswirkungen aufweisen, Nachhaltigkeit stärker strukturell, indem sie ihre operative Tätigkeit neu konfigurieren, Partneranreize ausrichten und Governance-Mechanismen in die Ökosystemkoordination einbetten.

Die Studie leistet drei zentrale Beiträge. Erstens zeigt sie, dass Nachhaltigkeit in digitalen Ökosystemen durch Aushandlungsprozesse mit Partnern, Nutzenden und weiteren Stakeholdern ko-kreiert wird. Zweitens erweitert sie die Legitimations-theorie, indem sie aufzeigt, dass digitale Unternehmen Verantwortung aktiv durch Ökosystem-Governance orchestrieren. Drittens bietet sie praktische Implikationen für Managerinnen und Manager sowie politische Entscheidungsträgerinnen und -träger, wie Nachhaltigkeitsstrategien gestaltet werden können, die Plattformabhängigkeiten und verteilte Verantwortlichkeiten berücksichtigen.

Indem die Studie die unterschiedlichen Ansätze digitaler Unternehmen zur Nachhaltigkeit herausarbeitet, trägt sie zum Verständnis bei, wie Verantwortung in der Plattformökonomie umgesetzt wird, und klärt die Bedingungen, unter denen digitale Ökosysteme nachhaltigen Wandel nicht nur signalisieren, sondern tatsächlich ermöglichen können.

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1. Introduction

1.1 Background

The current global landscape is increasingly shaped by overlapping crises and transformations. The biodiversity and climate emergency, the rise of nationalism and democratic decline, and the pressing calls for socioeconomic change are profoundly altering the way firms engage with their stakeholders (George and Schillebeeckx, 2022). Particularly multinational enterprises find themselves navigating a complex geopolitical environment, where the urgent need for climate action collides with resurgent protectionism and fragmented international cooperation. At the same time, the rise of Internet and digital technologies has lowered barriers to interaction, enabling unprecedented global connectivity and collaboration. While political and economic forces push toward disintegration, digital infrastructures facilitate cross-border flows of goods, services and information, allowing firms, individuals, and communities to coordinate beyond national boundaries. This transformation has reshaped the global economy, giving rise to firms whose business models differ fundamentally from those of traditional corporations.

Digitization is also revolutionizing traditional ways of value creation. This development allows for so-called economies of collective action, systems where competitive advantage is achieved through the ability to coordinate ecosystems of partners, users, and stakeholders (George and Schillebeeckx, 2022). This shift has given rise to digital firms, companies that rely their business models on digital infrastructure. Within this group, platform firms represent a distinct subset that build and govern digital infrastructures connecting multiple groups of actors. While some digital firms use the Internet solely to deliver products or services, platforms facilitate complex, multisided interactions (Loonam and O'Regan, 2022). Here, value creation no longer depends on controlling linear supply chains, but on enabling networks of interdependent actors to innovate, collaborate, and co-create. The success of such firms therefore mainly depends on their capacity to govern and sustain these ecosystems responsibly. Accordingly, this research focuses on platform firms as the central objects of analysis.

Given their scale, reach, and systemic importance, digital enterprises are increasingly expected to foster environmental and social value creation. Their digital infrastructures mediate billions of interactions, shaping not only economic exchange but also cultural norms, political debate, and consumer behavior. Digital firms are thus no longer viewed as neutral intermediaries, but as actors accountable for the outcomes their ecosystems generate. Accordingly, they are called upon to go beyond reducing their own footprints and to actively address a plethora of systemic

challenges such as climate change, inequality, protection of users' rights in digital spaces and so on.

Consequently, digital firms are emerging as setters of standards for sustainability practices in the digital age. Their influence often extends across industries, making their sustainability practices benchmarks for others. Firms such as Meta, PayPal, Zalando, and Spotify illustrate this dynamic, as their distinctive business models not only shape markets and industries but also exert cultural, social, and environmental influence, raising critical questions about their role in global sustainability challenges. As the leading global social networking platform, Meta is now at the center of several debates, which include themes such as misinformation, political influence, and data privacy, while PayPal is one of the key players in the field of digital financial services, raising questions on matters like inclusion, transparency, and the environmental costs of technologies such as cryptocurrencies. Zalando illustrates the challenges of e-commerce, particularly in fashion and logistics, where environmental and labor concerns are prominent. Spotify, as the leading streaming platform for music and podcasts, highlights tensions around issues such as creators' compensation, content moderation, and the environmental footprint of data-intensive services. Together, these cases capture diverse industries and the range of sustainability and legitimacy tensions faced by global platform firms, providing a comparative basis for analyzing how such companies align their business models with societal expectations.

1.2 Research Problem & Questions

While corporate sustainability has been extensively studied in the context of traditional MNEs, comparatively little is known about how digital firms contribute to sustainability matters. Some researchers have, for example, conceptualized platform ecosystems as meta-organizations, but noted that most research still has insufficiently explored how platforms create forms of value beyond purely economic outcomes (Kretschmer et al, 2022) or that traditional models of value co-creation may be inadequate to explain the practical challenges faced by nascent platform firms (Hawlitschek and Hodapp, 2024). Similarly, Madanaguli et al. (2023) have highlighted that existing work has largely centered on understanding the business models of digital firms, while leaving out questions of sustainability, long-term resilience and societal impact.

More generally, scholars have observed that platform research has tended to prioritize issues of competition and economic value capture (Jacobides et al., 2018; Cennamo & Santalo, 2019), with limited inquiry into how ecosystem interrelations can enable or constrain the co-creation process of social and environmental value (De Reuver et al., 2018; Yi et al., 2023). Addressing

these gaps is especially relevant as digital platforms increasingly face societal expectations to extend their value propositions beyond efficiency and innovation toward sustainability and responsibility.

Compared to traditional international companies, that operate through a pipeline process, where value is usually created and transferred in a linear way through structures such as global value chains (GVCs), digital firms orchestrate networks of complementary actors (Loonam and O'Regan, 2022). This represents a significant shift in the way value is generated. As a matter of fact, value creation in a platform context is inherently relational, reflecting what is described as ecosystem interdependence (Jacobides et al., 2018). This raises the question of how firms leverage these interdependencies to co-create social and environmental outcomes, especially considering that the literature presents a shortage of contributions on platform firms from a corporate sustainability perspective. Whereas traditional businesses may pursue sustainability by transforming internal processes, digital businesses must often negotiate and coordinate sustainability efforts with ecosystem participants whose incentives, resources, and practices are highly diverse.

To address this gap, this thesis opts for the use of stakeholder and legitimacy theories to help explain how digital firms gain acceptance and credibility when sustainability outcomes depend on multiple ecosystem actors. In this regard, stakeholder theory highlights the relational ties between platform firms and the diverse groups that shape their ability to operate successfully. Because sustainability outcomes in platform contexts are co-created across ecosystems that include several different actors, stakeholder relationships become central for assessing both opportunities and frictions in the process of value creation. Legitimacy theory further extends this perspective by emphasizing the broader societal acceptance that digital firms must negotiate to sustain their activities over time. Given the disruptive nature and global reach of platform companies, questions of legitimacy are particularly acute, as these firms are often scrutinized for their governance practices, environmental impact, and ability to align with societal expectations. Taken together, both these theories provide a framework for exploring how platform firms not only manage direct stakeholder demands but also seek legitimacy in contexts where sustainability depends on the cooperation of multiple, interdependent actors.

Therefore, this thesis addresses the following research question:

How do digital firms co-create value in their ecosystems from a corporate sustainability perspective?

This guiding question reflects the need to move beyond firm-centric analyses of sustainability, typically applied to traditional multinational companies, and to understand how value creation is distributed across networks of interdependent actors. It acknowledges that digital firms operate within ecosystems rather than in isolation, and that their sustainability outcomes are often dependent on collaboration with a wide and diverse set of stakeholders.

To unpack this overarching question, the following sub-questions are considered:

- How do digital firms approach sustainability, and what forms do their initiatives take?

This question aims at shedding light on the strategies and practices that digital firms adopt to integrate sustainability into their business models. It therefore reflects on the specific logics of different platform models in handling sustainability matters and highlights the heterogeneity of digital firms and their initiatives, showing how their sustainability pathways are shaped by the nature of their value offers and business structures.

- What opportunities and challenges emerge when sustainability is pursued through interdependent ecosystems rather than isolated corporate strategies?

This question addresses the fact that sustainable value in digital contexts is co-created through ecosystem interactions. It explores the potential benefits of this interdependence, such as the ability to leverage complementarities and resources, and foster innovation. At the same time, it considers its difficulties, such as the reliance on partners' commitments, the diffusion of accountability, and tensions between symbolic signaling and structural transformation. Understanding these dynamics is crucial to evaluate whether ecosystem-based sustainability strategies can achieve meaningful and systemic change or whether they risk remaining fragmented and superficial.

Through these questions, the study aims to advance the understanding of value co-creation in digital contexts, building on theories of the digital firm and platform ecosystems, as well as stakeholder and legitimacy theories to explore how sustainability outcomes are negotiated and distributed.

1.3 Objective & Goals

The overall objective of this study is to explore how digital firms integrate sustainability into their business models and ecosystem relationships. In the first place, this implies analyzing the sustainability strategies of selected digital firms to identify commonalities and divergences in their approaches. By examining the sustainability reports and practices of firms such as Meta,

PayPal, Zalando and Spotify, the research aims to reveal patterns as well as differences. This comparative lens allows for identifying recurring themes, while also highlighting potential unique trajectories of the chosen companies.

Another goal is to understand how ecosystem interdependencies shape the ways in which digital firms pursue environmental and social goals. Platforms operate within interdependent networks, composed of users, complementors and the company itself. The research therefore investigates how these interdependencies can enable or constrain digital businesses' ability to pursue sustainability. In doing so, the research demonstrates that sustainability outcomes are co-created rather than unilaterally produced.

Moreover, another goal that this research hopes to achieve is to evaluate the extent to which these initiatives reflect structural changes or superficial measures. This involves distinguishing between sustainability strategies that address the root causes of environmental and social issues, and those that function primarily as symbolic claims. It includes questioning whether actions pursued by the selected companies result in genuine systemic change, or whether they primarily serve to build and maintain legitimacy without altering core business practices. This objective seeks to contribute to ongoing debates on practices such as greenwashing.

This study would also like to contribute to academic debates on corporate sustainability by extending the concepts of value co-creation, legitimacy, and ecosystem governance into digital contexts. By doing so, it aims at advancing the understanding of how sustainability is shaped in contexts characterized by modularity, complementarities, and interdependence. In this way, it expands legitimacy theory by showing how digital firms construct legitimacy not only through governance processes, fairness principles, and narratives that resonate with diverse stakeholders.

Finally, this research aims at offering practical insights on how sustainability strategies can be effectively pursued considering the inherent traits of digital business models. For managers, this means designing sustainability strategies that are consistent with the firm's value offer and impact, whether infrastructural, operational or cultural. For policymakers, this study can be useful to understand the importance of tailoring regulatory frameworks to address the diffuse accountability and interdependent nature of digital ecosystems. Together, these contributions aim to bridge the gap between theory and practical application, ensuring that digital firms can meaningfully contribute to sustainability transitions.

Overall, this thesis aspires to shed light on how digital firms are becoming central actors in the pursuit of sustainability and in the negotiation of what responsibility means in the digital age. Their influence extends well beyond economic transactions, as they shape cultural narratives, regulate flows of information, mediate access to services of different kinds, and coordinate activities across vast networks of interdependent actors. By examining how firms such as Meta, PayPal, Zalando, and Spotify frame and operationalize sustainability, the study illustrates that corporate responsibility in the digital economy is neither uniform nor one-dimensional. Instead, it depends on the specific traits of business models and the nature of value creation processes. In this sense, digital firms not only reflect but also actively shape the evolving expectations of stakeholders, regulators, and society at large. Understanding their strategies is therefore essential for grasping how sustainability is co-created in ecosystems where boundaries between economic, social, and environmental domains are increasingly blurred.

1.4 Structure of Research

This study will unfold in the following way. The first chapter serves as the introduction to the study. It sets the stage by outlining the global challenges, ranging from climate change to digitization, that motivate the research and by situating the role of digital firms within these transformations. This part also identifies the research gap, emphasizing the lack of understanding of how digital platforms, given their distinct ecosystem-based business models, contribute to the co-creation of social and environmental value. Building on this, the research problem, central question, and sub-questions are introduced, followed by the objectives and goals of the study.

The research proceeds by developing the theoretical foundations of the study. It begins by defining digital firms and examining their unique characteristics, particularly their reliance on platform ecosystems rather than linear value chains. The discussion then explores how platforms generate value through mechanisms such as modularity, interdependence, and complementarities. Then, the chapter introduces the concept of corporate sustainability, paying attention to both its environmental and social dimensions and how these two manifest differently in digital contexts compared to traditional ones. A particular emphasis is placed on both stakeholder and legitimacy theory, which provides a conceptual lens for understanding how digital firms seek societal approval and credibility. Together, these sections establish the theoretical lens through which it will be possible to interpret the findings presented in the next chapters.

The next chapter describes the methodological approach chosen for the research. It explains the choice of a qualitative, case-based design, which allows for an in-depth exploration of how sustainability is enacted in diverse digital firms. The chapter details the data collection process, which relies primarily on sustainability reports and other publicly available corporate documentation, and it justifies the selection of the four case companies, that is Meta, PayPal, Zalando, and Spotify. The process of data analysis is then outlined.

The subsequent chapter presents the empirical findings of the study. Each of the four firms is analyzed in depth, highlighting their approaches to corporate sustainability across different dimensions. The chapter identifies commonalities, while underscoring key differences shaped by the firms' business models and sectoral contexts. This descriptive groundwork provides the empirical basis for the discussion that follows.

The fifth chapter moves then from description to interpretation, linking the empirical findings to the theoretical framework. The discussion first elaborates on the theoretical contributions, showing how the cases expand existing knowledge of platform ecosystems by demonstrating that sustainability, like economic value, is co-created through interdependence and complementarities. The research questions are revisited in light of the findings, demonstrating how the study advances understanding of value co-creation in digital ecosystems from a sustainability perspective. It then connects the findings to stakeholder and legitimacy theory, highlighting the diverse strategies through which digital firms seek societal approval. Practical contributions are also presented, offering insights for tailoring sustainability strategies to business models and orchestrating responsibility across ecosystems. The chapter concludes by acknowledging the study's limitations and by identifying promising avenues for future research.

Next, the sixth chapter provides the conclusion of the thesis. It retraces the entire trajectory of this research and synthesizes its main insights, reflecting on how they contribute to both academic debates and managerial practice. The chapter also reflects more broadly on the implications of the research for the role of digital firms in addressing global sustainability challenges. Finally, the last chapter contains the full list of references used throughout the thesis. By systematically documenting the sources drawn upon, this chapter ensures academic rigor and transparency.

Overall, this thesis contributes to the literature on corporate sustainability and digital business models by examining how value creation in platform ecosystems extends beyond economic

outcomes to also include environmental and social dimensions. By applying stakeholder and legitimacy theories to the context of digital platforms, the study offers new insights into how firms negotiate acceptance and credibility in ecosystems where sustainability depends on the cooperation of multiple actors. Empirically, it advances comparative knowledge through the analysis of four leading global platforms, namely Meta, PayPal, Zalando, and Spotify, illustrating different approaches to sustainability across industries. Moreover, this study highlights both common patterns and sectoral divergences, showing how responsible business practices are shaped by business models, governance structures, and ecosystem dynamics. These findings enrich theoretical debates on value co-creation and legitimacy in digital contexts by clarifying the mechanisms that digital firms use to balance economic goals with societal expectations. At the same time, this research offers guidance for managers and policymakers, emphasizing the importance of designing sustainability strategies that are consistent with the distributed, interconnected nature of digital ecosystems. In this way, the study hopes to not only contribute to academic discussions but also provide actionable insights for shaping more responsible and resilient digital business practices.

2. Theoretical Background

2.1 The Digital Firm

The aim of this chapter is to establish a theoretical foundation for the study of digital firms, by examining their distinctive traits, the dynamics within their platform-based ecosystems, and the ways in which value is co-created in such environments. It explores the role of stakeholders in shaping digital ecosystems, highlighting the interplay between economic interests and social and environmental expectations. By doing so, it also introduces both the concepts of corporate sustainability and legitimacy as critical lenses for understanding how digital firms justify their role and maintain trust within increasingly complex and contested environments. Together, these theoretical elements provide the basis for the subsequent analysis, allowing a nuanced exploration of how digital firms navigate sustainability challenges and stakeholder pressures to create and sustain value across their ecosystems.

In the last two decades, the emergence of the digital economy has represented a major event in the global economic landscape, leading to the surfacing of new protagonists of the world economy, such as multinational digital firms. Exploiting the potential of digital technologies, these new business entities have benefitted from rapid growth and expansion, changing the conventional ways of thinking about value production and distribution. Central to their impact are their distinct features, which set them apart from traditional multinational companies and explain their novelty.

2.1.1 Definition & Characteristics

A digital firm is mainly defined by the central role that the internet plays in its business model. Specifically, a digital firm develops and employs a digital infrastructure for its production, operational, and delivery activities (Monaghan et al., 2020; Yang, et al., 2025). This means that this type of company uses its online presence to create and distribute a value offer that is essentially digital in nature. When such enterprises have been digital from their market launch, they are defined as born digitals.

UNCTAD (2017) divides digital MNEs into two different categories: fully digital firms and mixed firms. Full digital companies include internet platforms and providers of digital solutions. The former refers to entities operating and delivering a value offer entirely via the internet. Examples include search engines, social networks, and other sharing platforms. On the other hand, the latter comprises other internet-based enablers, such as digital payment

processors, cloud service providers, and other types of providers. Conversely, mixed firms integrate a prominent digital presence with a physical one. Such entities encompass e-commerce businesses and digital content providers. E-commerce firms are platforms where commercial transactions take place, such as internet retailers, while digital content providers are producers and distributors of goods and services in digital formats, including digital media like video, music, games, and data.

Digital firms present key characteristics that differentiate them from traditional firms. First, they make use of digital infrastructure from their inception (Monaghan et al., 2020; Yang, et al., 2025). This means that these firms usually have no legacy infrastructure prior to the digital revolution, that is, they have emerged after the rise of the internet (Birkinshaw, 2022). Another aspect is that their core activities are digital. This implies that even when a digital business has a physical presence, its core activities remain digital in nature (Vadana et al., 2019). A firm like Amazon, for example, can own warehouses to manage the delivery of physical goods to users, however, it is still deemed as a digital business as its primary mission is to provide a wide range of digital services.

Additionally, digital firms are characterized by a high level of flexibility (Monaghan et al., 2020). This is because they rely on a platform, a modular technological architecture that includes a fixed set of core components and a variable set of peripheral ones (Nambisan et al., 2019). The latter allows a high degree of customization (Yoo et al., 2010), which consequentially permits digital firms to rapidly adjust their operations based on external changes in the environment or internal strategic considerations. This high level of flexibility implies that digital businesses can also organize the firm and configure its value chain in new and innovative ways (Nambisan et al., 2019).

Furthermore, it is important to note that flexibility for these firms does not only apply to their technological infrastructure, but also to their physical one. Exactly because of their reliance on virtual technology, they invest less in physical assets and are therefore asset-light (Yang, et al., 2025). This allows for a lower need of commitment in relation to the actors present in the markets (Monaghan et al., 2020), therefore increasing the flexibility of digital firms compared to traditional MNEs. This is even more relevant considering that local responsiveness seems to be less fundamental for digital firms, as previous research has already highlighted (Hennart, 2014; Birkinshaw, 2022). As internationalization can take place and be maintained even with low levels of adaptation to local markets, digital businesses are therefore more responsive and agile. It is also important to remember that their reliance on technology allows them to learn

and implement changes faster as they engage with different markets and their actors in a more immediate way (Monaghan et al., 2020).

Another factor is that digital firms can scale up quickly (Hennart, 2014; Monaghan et al., 2020; Yang, et al., 2025). This means that they can achieve economies of scale at an accelerated pace compared to traditional brick-and-mortar businesses, which contributes to a swift expansion of their operations into global markets. As the value offer is virtual in nature, replication across international markets comes at low cost (Yang, et al., 2025). Transaction costs are also reduced (Birkinshaw, 2022). This is possible also because of automation, which digital firms capitalize on to achieve higher productivity and efficiency (Monaghan et al., 2020).

Taken together, all the above-listed features enable digital firms to internationalize early in their lifecycle and at an accelerated pace. As a result, it can be said that another of the defining characteristics of digital firms is that they are often global by default, as defined by Birkinshaw (2022).

Network effects are also an important aspect peculiar to digital firms. A network is a system of entities, which can either be individuals or organizations, that are interconnected. Such entities constitute the nodes of the system (McIntyre and Srinivasan, 2017). As already mentioned, digital firms build on a platform. From an industrial economics perspective, a platform can be described as a multi-sided market, in which networks effects arise between the different actors participating (Nambisan et al., 2019; Birkinshaw, 2022). Direct network effects depend on the size of the network itself, that is on the number of users that an individual user can potentially get in contact with: this means that the more users join the network, the higher is the value that the platform can provide to its participants and consequentially also to the potential new adopters (McIntyre and Srinivasan, 2017; Chen et al., 2019; Monaghan et al., 2020). Direct network effects are same-side effects, that is they pertain to users that are on the same side of the market (Nambisan et al., 2019). On the other hand, indirect network effects are cross-side effects, that is the actors belonging to one side of the network can benefit from the size and characteristics of those on the other side and vice versa (McIntyre and Srinivasan, 2017; Nambisan et al., 2019).

Networks effects are important because the value of the platform, and therefore the success of the digital firm that owns and provides the platform, depends on the number of the actors participating in it (Monaghan et al., 2020). This is especially the case with social networks, also defined as online platforms by UNCTAD (2017), such as Facebook, whose value increases as

more users join the network. Together with direct network effects, indirect network effects are also fundamental for the growth of a platform, as digital firms aim at facilitating and mediating the transactions between different groups of users. For example, a streaming service such as Netflix offers a wide variety of movies and programs to its subscribers, who benefit from the rich choice of contents available, whereas movie studios working with Netflix benefit from the high number of users that the platform can attract (McIntyre and Srinivasan, 2017). However, it is important to note that the size of a network is not the only necessary feature to sustain a platform, as research suggests that other aspects are also relevant, such as the strength of the relationships among the participants, the nature of the product offered by the platform, the potential cost incurred by users in switching to rival platforms, the conduct of network participants, network's heterogeneity, the platform's design and technical attributes and so on (McIntyre and Srinivasan, 2017; Chen et al., 2019). Additionally, network effects can also present some limits. For example, too many participants on one side of the market can, in some cases, diminish the willingness of other potential complementors or users to join the platform (Gawer and Cusumano, 2014).

In general, what is essential to underline is that network effects represent the result of the interdependence of the actors within the platform, a distinctive feature which differentiates digital firms from traditional ones adopting forms of hierarchical organization. As the way in which platforms' participants engage with each other and with the firm changes, as well as the role of the firm itself, research has defined this unique organizational structure as the platform ecosystem, a concept that will be the object of discussion in the following section.

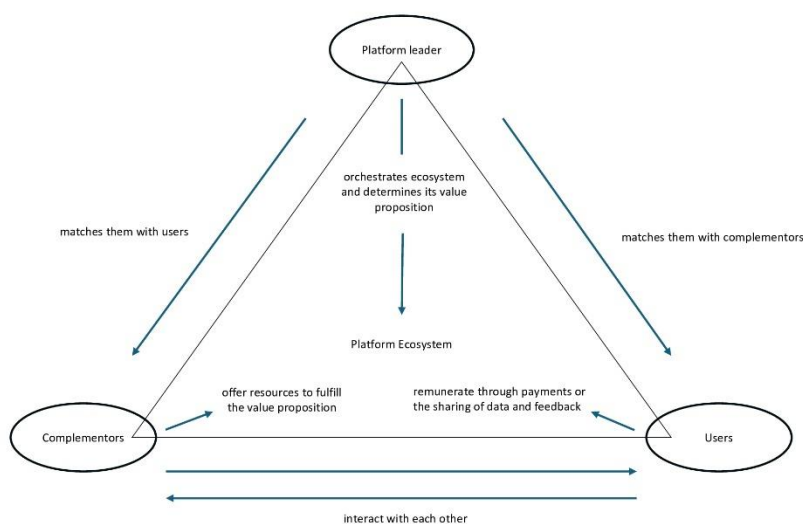
2.1.2 The Platform Ecosystem

As briefly discussed above, digital firms build on digital architecture, specifically on a platform, which characterizes the basis for the value offer rather than individual products or services. It is from this significant shift in terms of how digital companies create and deliver value that associated ecosystems can emerge. The platform constitutes the foundation where different sets of actors converge to pursue a main value proposition and where different kinds of mutual dependencies take place (Nambisan et al., 2019). The ecosystem is then the way the actors organize around such platform.

The ecosystem is given by different entities that play different roles, as either complementors or users, and collect around a platform leader, which orchestrates the ecosystem and matches the different parties during each interaction (Yi et al., 2023). The role played by the platform

leader is fundamental because it shapes the form that the ecosystem will take. The firm is in this case the architect that not only defines the goal pursued by the ecosystem, but also the roles that its members will play in it, as well as its standards, rules and interfaces (Jacobides et al., 2018; Yi et al., 2023). Figure 1 was therefore created by the author to help visualizing the platform ecosystem's structure.

Figure 1. The structure of platform ecosystems.



Source: created by the author.

A platform's architecture is the structure of its ecosystem, defining its core components, their functions, and the ways in which they interact with one another. Its hierarchical structure is given by the core of the platform and its interfaces. The architecture shapes the boundaries of the platform's future evolution, and it determines its potential to adapt and develop over time (Tiwana, 2014, Chapter 5). Its importance is due to two important functions. First, it allows the separation of the ecosystem in modular components, which can work independently. At the same time, it also makes sure these parts can work smoothly together as one unified system.

According to Jacobides et al., (2018) ecosystems constitute new ways of establishing economic relationships. In their research, which analyses the characteristics that distinguish ecosystems from other structures of economic organization, they identify modularity and coordination as specific features for their origination. As a matter of fact, the modular infrastructure allows the

coordination of interrelated actors that present a high degree of autonomy. This means that, even if the platform leader establishes the overall design of the architecture and its rules, the actors still possess a large level of autonomy, provided that they integrate with others according to the predefined standards set by the leader itself, which helps to coordinate and align all the parties. Modularity is therefore the necessary condition for coordination to arise among entities that are independent and interdependent at the same time.

The importance of this property lies also in the fact that it allows for scalability. In this context, scalability is the ability of the ecosystem to rely on a greater or lesser number of entities, while preserving his efficiency and performance level (Tiwana, 2014, Chapter 7). As a matter of fact, modularization permits new members to join the ecosystem with minimal disruption. This results in an increased variety of complements and users within the ecosystem and distributed innovation, thanks to the different capabilities that a set of diverse and loosely coupled parties can bring independently to the ecosystem. In this way, incremental and modular innovations are made possible, so that ecosystem's members can introduce innovation while keeping the core platform and interface standards intact. The result is therefore that many complementary innovations emerge in parallel, which reduces both transaction and coordination costs, making decentralized innovation not only feasible but efficient. The ability to be quickly scalable and foster innovation enhances also the platform's capacity to adapt over time (Tiwana, 2014, Chapter 5). These architectural advantages are particularly significant for digital firms, who must coordinate globally dispersed actors without the benefit of physical proximity or embedded relationships. Nevertheless, this aspect alone is not sufficient for ecosystems to function; coordination also happens through complementarities, which explain the interdependencies of the different parties within the ecosystem.

Complementarities can be explained as two or more entities that hold more value when combined than when isolated (Teece, 2017). There are two types of complementarities specific to ecosystems: unique complementarities and supermodular complementarities. Unique complementarities refer to the distinctive interdependencies between elements, where the value of one element is significantly enhanced or even enabled by the presence of a specific counterpart. This implies some level of co-specialization (Nambisan et al., 2019). Supermodular complementarities can be explained, on the other hand, as the relationship between two items, where the increase in one enhances the value of the other.

Such phenomenon is at the base of network effects (Jacobides et al., 2018). Both complementarities are non-generic, that is they require a specific structure of relationships to

generate value, which leads to the creation of the ecosystem. Such an ecosystem allows for complementarities to take place and be coordinated without being vertically integrated. This indicates therefore a change from vertical integration, where the firm controls the whole value chain, towards horizontal specialization, as highlighted by Birkinshaw (2022). Moreover, the type of complementarity shapes both the roles of the actors and their relationships within the ecosystem (Nambisan et al., 2019). Such relationships are, as a matter of fact, standardized for each role (Jacobides et al., 2018). On one side, participants provide complementary products or services by leveraging the platform's interface. These users play the role of complementors. On the other side, there are users who are willing to consume these products or services and use the platform to do so (Yi et al., 2023). Acting between an intermediary between these two sets of actors, the platform leader mediates and monitors their interactions and transactions.

While complementarities create opportunities for joint value generation, they also introduce structural interdependencies that can potentially become bottlenecks when all actors fail to innovate or coordinate effectively. In their work, Adner and Kapoor (2010) try to understand what challenges ecosystem members must face when the platform company introduces a successful innovation in the market. In particular, the authors emphasize that the location of such challenges poses different limits to the platform for creating value. Issues at the upstream level directly hinder a firm's ability to develop or deliver its product. These are production bottlenecks that block value creation at the source. On the other hand, challenges located downstream restrict the customers' ability to experience the full value of the offer. These are consumption bottlenecks that affect adoption, usage, and perceived utility, limiting the ability of customers to capture the value of the product offer. In the context of platform ecosystems, this means that the success of an innovation depends not only on the ability of the company to solve its internal development challenges, but also on the capability of ecosystem members to innovate or adapt accordingly. In this case, interdependence becomes a bottleneck when the slowest actor determines the overall pace of ecosystem progress. For digital firms, success hinges on how effectively they can orchestrate innovation across their ecosystems. This makes platform governance central to managing these bottlenecks.

In this sense, the Apple's App Store offers a good example of how a platform leader can strategically balance complementor innovation with strict governance mechanisms to manage interdependencies, reduce frictions, and preserve long-term value creation within a digital ecosystem. As a platform, the App Store facilitates interactions between a pool of third-party app developers and end-users. Developers innovate by creating different apps, while Apple

provides the underlying operating system and digital infrastructure. This system, enabled by modular platform architecture, has been especially successful in supporting massive scalability and diversity of offerings. At the same time, it also implies a high level of interdependence. As a matter of fact, the user's experience depends on the quality and reliability of apps developed outside Apple's direct control. This creates the risk of ecosystem bottlenecks. For example, downstream constraints can arise if apps of poor quality are launched on the platform, which can degrade the platform's overall credibility and user trust.

For this reason, Apple implements a rigorous controlled governance model. To support third-party developers Apple provides comprehensive software development kits, APIs, and design guidelines to ensure interoperability and consistency across apps (Apple, 2025a). In this way, Apple supports innovation while preventing technical and design-related fragmentation. Even before getting listed in the App Store, an app must pass through Apple's strict review process. This ensures compliance with Apple's guidelines on safety, performance, payment, design and privacy matters (Apple, 2025b) and minimizes the potential risk for negative externalities that can be caused by harmful or substandard apps, thus avoiding downstream bottlenecks. To encourage developers to collaborate to the ecosystem overall value and develop high-quality and safe products, Apple uses app store labels, such as the Editor's Choice (Apple, 2025c), to signal trustworthiness and guide consumer choices, while also supporting better alignment between ecosystem complementors and end-user expectations. All these efforts show Apple's efforts to mitigate frictions that can arise because of complementors and how the firm tries to proactively manage risks that could delay user adoption and stall ecosystem-wide innovation.

As illustrated through this last example, this structure of multilateral interdependence requires thus the platform leader to design mechanisms and rules to manage and coordinate such relationships. Platform governance and design are, however, not only essential for enabling effective collaboration among ecosystem participants but also to establish how the ecosystem will create and appropriate value.

2.1.3 Value Creation in the Ecosystem

At a general level, past research has identified three elements that define the structure of an ecosystem, such as actions, actors and architectures (Hein et al., 2020). These items are said to explain how the different members engage with the value proposition and contribute to the creation of value. Activities describe those specific tasks that determine in which way value will be created, that is the value proposition. Actors are those who undertake such activities.

Complementors offer the resources, either in the form of products or services, that contribute to the fulfilment of the value proposition. On the other hand, users benefit from such offers and contribute by remunerating them through payments or the sharing of data and feedback. These interactions define the architecture, in other words the technology where the two sides interact.

Regardless of the individual value propositions that different digital companies pursue, every platform aims at bringing together actors that otherwise would not have interacted with each other, by facilitating their interaction through matchmaking mechanisms or search functions, that allow users to easily find partners to transact with. The premise here is that, to create value, coordination of several co-specialized actors is needed (Li et al., 2019).

Coordination is identified by multiple scholars as one defining feature of platform ecosystems. Kretschmer et al. (2022) underline especially the importance of the role played by the platform leader in this regard. In the context of ecosystems, the platform leader exercises its authority through the ownership of the architecture, which the ecosystem builds on. The firm possessing the infrastructure has the power to decide who can join the ecosystem (by determining the degree of openness of the interface), the rules to participate and the allocation of payoffs (Parker et al., 2017; Chen et al., 2022; Kretschmer et al., 2022). This is a critical function as the platform has therefore the power to exclude members, a mechanism to enforce adaptation, limit opportunistic behavior and filter out low-quality complementors. This system aims to make sure that complementors will align their actions with the interests of the firm (Chen et al., 2022).

The extent to which the firm gives access to complementors and users is therefore a crucial decision, that presents both positive and negative implications. If a more open interface can encourage more actors to join and therefore lead to value creation through network effects, undesired consequences may also take place as the risk of low-quality members entering the platform is higher (Gawer and Cusumano, 2014; Chen et al., 2022). By controlling access, the firm also controls the output; as already mentioned, platform value is created by helping users and complementors to engage in exchanges. To do so, complementors need to offer attractive products or services, and customers must fulfill their commitments. The platform leader uses therefore mechanisms, such as feedback systems, to push all sides to align their behavior and their performance to platform's goals (Chen et al., 2022). For example, a platform like Airbnb offers to both hosts and guests the chance to rate their experiences and share opinions about each other, therefore discouraging misbehavior and inappropriate practices.

This creates a mutual accountability system, in which trust is built through digital reputations. High ratings become a valuable signal that influence search visibility, booking likelihood, and eligibility for the Superhost status. In this way, the feedback system functions as a powerful governance tool that aligns users and complementors' behavior, and particularly that of hosts, with platform objectives around quality and reliability. Airbnb has also introduced creative ways to promote trust and support sustainability within its ecosystem, by rewarding hosts who implement environmentally responsible practices and providing tips on how to make hosts' listings more eco-friendly (Airbnb, 2021). Such efforts get underlined and incentivized through guest reviews, which frequently highlight sustainable features of their stays, therefore building a self-reinforcing loop between feedback, sustainability, and economic benefit. Hosts who demonstrate environmental responsibility, and are acknowledged for this by guests, can thus gain higher visibility and booking potential.

Airbnb's feedback system serves therefore as a tool for coordination and governance, guiding actors toward platform-aligned outcomes while preserving their autonomy. In this way, Airbnb allows guests to evaluate and reward such practices, thus encouraging hosts to voluntarily align with preferred social norms. The platform's rating system becomes a mechanism for soft enforcement, where sustainability is driven through market incentives and peer validation. In this sense, the feedback system not only sustains coordination and quality control within the ecosystem, but projects also values that resonate with society as a whole.

An implication is that, on a digital platform, human interaction is more and more automated (Monaghan et al., 2020). Continuing the example of Airbnb, trust mechanisms built through reputation ratings replace in person trust-building processes to the point that even sharing a living space with a stranger becomes acceptable in a very short amount of time. Platforms use also automated mechanisms to detect potential fraudulent behavior and either discourage or penalize it. On several platforms, users and complementors that often receive low ratings can get their accounts suspended or even removed, because such participants could cause damage to the reputation of the platform. Misbehaviors can be of different kinds, going from sharing false information and using inappropriate language to attempting to circumvent the platform and interact directly to avoid transaction fees owed to the platform. The platform leader can thus implement technical features to monitor communication (Chen et al., 2022). In the case of Airbnb, for example, users can only communicate with hosts by using the platform chat and cannot receive their private contacts until they place a booking.

These control mechanisms exercised by the platform can then limit users and complementors' autonomy, discouraging them from joining the platform or remaining in it. However, it is the promise that more value can be created in the platform ecosystem rather than outside of it that convince different actors to be part of the ecosystem (Kretschmer et al., 2022). Chen et al. (2022) argue that there are two reasons that explain why asset owners may accept to partially give up on their freedom to the platform leader. First, the latter owns critical digital assets, not only the digital infrastructure, but also relevant information and competencies. Secondly, the gains that complementors expect to receive from this cooperative relationship are anticipated to be higher than the costs of getting in the market on their own.

Additionally, the platform owner may create a series of incentives to push complementors to become part of the ecosystem (Chen et al., 2022; Kretschmer et al., 2022). For example, the platform leader can share resources to help complementors to develop their value-generating activities. In this way, the platform leader can support the development of complementors' capabilities, which eventually can turn into higher returns (Chen et al., 2022). Companies like Google or Apple, for example, share APIs for third-party developers to design and develop complementary products that can be then sold published on their platforms (Parker et al., 2017).

The platform can also provide information related to its interface or its users to encourage the entry of complementors in its ecosystem. For example, the platform leader may share information on what offerings or investments may yield higher success and therefore higher returns. Airbnb provides on hosts' personal pages several tools to help them set competitive prices for their listings and manage efficiently their availabilities based on the data collected by the platform on similar listings (Airbnb, 2025). The objective is to stimulate complementors to concentrate resources in a way that can improve the overall process of value creation and meet platform goals (Chen et al., 2022).

This, however, introduces a deeper tension in platform governance. While platforms must orchestrate and coordinate the activities of independent actors, this often creates frictions between exerting control and encouraging innovation. As Gawer (2021) explains, platform leaders manage these tensions through what the author defines as boundary-setting decisions that determine firm scope, platform sides, and digital interfaces. These structural boundaries are meant to act as strategic levers that define how platform firms govern resources, actors, and data flows in ways that both enable and constrain innovation. Boundary decisions in terms of platform sides and interfaces especially affect the form that the ecosystem will take. Choices over sides are determinant to establish their number and composition, therefore settling the

amount and type of members allowed to get access to the platform. Incorporating multiple sides can amplify cross-side network effects and expand the scale of the platform. However, increasing the number of sides also heightens the complexity of managing the ecosystem. It can introduce tensions among members with differing, and sometimes conflicting, interests, which can lead to suboptimal solutions and hinder the platform's capacity to pursue innovation successfully, as it must constantly balance competing expectations. The design of interfaces also plays an important role in innovating. As a matter of fact, interfaces define how different modules connect and interact, establishing their limits, while also governing how ecosystem members communicate and coordinate with one another. In this case, innovation depends on the degree of openness of the interface, as it extends the capacity of innovating beyond the boundaries of the platform firm through access to a broader pool of external expertise and decentralized diverse knowledge.

In this sense, Gawer (2021) especially highlights the importance of APIs, tools that serve as boundary resources to facilitate distributed innovation while preserving control. As a matter of fact, the platform leader must be able to attract a broad and diverse base of complementors and users and at the same time ensure their behavior aligns with the platform's standards. For example, Amazon Marketplace is a prime case of a platform that has successfully scaled by opening its ecosystem to a vast group of external sellers, while simultaneously maintaining tight governance over its behavior. This service expands the range of Amazon's offerings and accelerates innovation by enabling substantial cross-side network effects. Nevertheless, the company needs to make use of various control mechanisms, like seller performance metrics, review systems, and strict rules on counterfeit goods, pricing policies, and fulfillment standards to guarantee quality, consistency, and user trust (Amazon, 2025). These rules are standardized protocols that enable innovation, while allowing for both coordination and control. However, as Gawer (2021) also explains, excessive control over interfaces and ecosystem participation can stifle generativity. For instance, Amazon's use of seller data to launch competing private-label products demonstrates how expanding platform scope into its platform side members' domains can discourage innovation and erode trust.

For digital platforms, the tension lies therefore in balancing openness and control. The goal is to foster an environment conducive to external innovation without compromising platform's standards and incurring risks. As the degree of openness and inclusiveness change as the life cycle of the platform advances, finding an equilibrium between innovation and control is a dynamic process in which boundaries are not fixed, but constantly reshaped through strategic

decisions about access, data, participation rules, and the distribution of control over the value generated within the ecosystem.

The platform may also confer different degrees of autonomy to complementors for managing their activities, by for example decentralizing decision-rights on setting prices, letting them promote their offerings as well as allowing their own personalization of the platform's interface. In this way, complementors can pursue their interests more effectively, while at the same time contributing to the overall process of value generation (Chen et al., 2022). By being a less restrictive form of organization, ecosystems also allow for more flexible participation and possibility to enter and leave easily the ecosystem (Kretschmer et al., 2022). Participants' roles are also flexible and interchangeable, contrasting with the fixed roles of employees in traditional firms. Moreover, the platform leader may also offer rewards to complementors: this is especially true for those platforms like social networks, that base their value offer on the generation of contents and knowledge sharing, for which complementors usually do not receive pecuniary gains, like payments. In this context, platforms like Instagram or TikTok can decide to add paid features that provide a financial incentive to complementors to promote their participation and encourage their creation of high-quality content (Chen et al., 2022).

For the platform leader, incentives remain mostly indirect, because they pertain interactions among the members of the ecosystem (Kretschmer et al., 2022). By enabling members to interact and create value for each other, the platform itself is also able to capture some of that value, may it be under the form of pecuniary gains, data or information. So, as much as the platform leader plays an essential role in the ecosystem by providing the infrastructure and the basis to build an ecosystem, the members of the ecosystem are also essential for the ecosystem to exist and create value, as platforms cannot function without complementors and users.

This is why the platform leader must reassure its members that its efficient way of coordinating the two sides will bring them higher returns than those that they could make outside of the ecosystem (Li et al., 2019; Kretschmer et al., 2022). This is crucial as actors in the ecosystems enjoy a high degree of autonomy and take decisions independently, even if still within the rules and standards set by the platform leader. Even if the latter has the power to decide what actors can do and how returns are going to be distributed, it is still up to members to determine if and how they will make their contribution (Kretschmer et al., 2022). The modularity of the architecture further contributes to organizing activities in a more independent manner. The relationships that result from such level of autonomy are therefore loosely coupled ones (Li et al., 2019; Hein et al., 2020; Yi et al., 2023). Moreover, it is not possible for an ecosystem to

create value if complementary co-specialized components are not present (Li et al., 2019). As a matter of fact, supermodularity allows for the activities of one member to make another one have more value. The more complementary assets there are in the ecosystem, the greater will be therefore its value. Complementors and users will be more inclined to join and stay if the ecosystem contains supermodular complementarity.

All the aspects mentioned above lead thus to an important consideration about ecosystems: the locus of value creation remains outside of the platform, while the locus of control of such process is kept within the platform (Parker et al., 2017; Li et al., 2019; Altman et al., 2022). As already explained, it is the reliance on the activities of actors external to the digital firm and not contractually bound to it that generates actual value. On the other hand, the role of the firm is limited to organizing such activities and exerting control over them.

Taking into account this difference is fundamental because of the implications that it may have on the way digital firms shape their approach to corporate sustainability. For such enterprises, depending on autonomous and loosely coupled members for creating value poses a challenge, as they find themselves in the special position of experiencing a high degree of reliance on a group of greatly diversified entities which they exercise no direct control over. Understanding then what exactly corporate sustainability consists of in the context of platform ecosystems and how the digital firm manages its relationship with stakeholders to build social legitimacy is discussed in the next subchapter.

2.2 Corporate Sustainability

Like all firms, digital businesses are also expected to address pressing global issues. Because of their size and exposure, companies operating at the international level face particular public scrutiny and are pressured to offer solutions to problems that they are often perceived to be contributing to. Despite this, some authors believe that multinational enterprises may also be in a special position to bring positive change at the global level, as their transnational nature can overcome limitations specific to countries, such as inadequate regulations (Zaheer, 2024).

At a general level, corporate sustainability is a multifaceted and evolving concept that reflects the ever-growing societal expectation that firms integrate environmental, social, and economic considerations into their strategic and operational decisions. The first most widely accepted definition appeared in 1987 in the Brundtland Report published by the World Commission on Environment and Development. Here, sustainable development is about progress that fulfills the essential needs of current populations, while also ensuring that future generations retain the

resources and opportunities necessary to satisfy their own needs (World Commission on Environment and Development, 1987). Such definition puts the focus therefore on the need to ensure the durability of human society, but, as argued by Chang et al. (2017), also presents a certain level of vagueness, which has led to the development of several different definitions.

In particular, an attempt to operationalize the concept of corporate sustainability has been made by Elkington in 1997, who created the framework of the Triple Bottom Line (Chang et al., 2017). In this approach, Elkington identifies three different dimensions, that is a social, an environmental and a financial one, thus advocating for the simultaneous pursuit of economic prosperity (profit), environmental stewardship (planet), and social equity (people). Under this model, companies are then expected not only to generate financial returns but also to mitigate environmental harm and contribute positively to society.

A key perspective in this field has also been advanced by R. Edward Freeman, who presented a stakeholder theory, which suggests that a company's long-term success relies on its ability to build and sustain positive relationships with a wide range of stakeholders and not only with its shareholders. Such view rejects the notion that a firm's primary objective is to maximize only value for shareholders, advocating instead for a more inclusive approach that emphasizes delivering value to all parties affected by the organization's activities (Chang et al., 2017).

More recent views on corporate sustainability have underlined its strategic importance. For example, Baumgartner and Rauter (2017) argue that corporate sustainability must be treated as a strategic management issue, with organizations identifying environmental and social impacts as part of their core strategic process. In this view, firms are not only economic actors but also actors responsible for ecological and social systems. A sustainability-oriented strategy therefore involves aligning internal operations with broader sustainability goals, such as the SDGs, as defined by the United Nations.

Introduced in 2015, the United Nations Sustainable Development Goals (SDGs) provide a comprehensive framework for addressing the most pressing global challenges, ranging from climate action and responsible consumption to poverty alleviation and gender equality. Comprising 17 goals and 169 targets, the SDGs serve as a universal blueprint for sustainability, explicitly calling on businesses to contribute to the creation of a more equitable world. For firms, the SDGs represent both a moral imperative and a strategic opportunity, offering a roadmap to align corporate sustainability initiatives with globally relevant issues (Scheyvens et al., 2016). Rather than treating sustainability as a matter of compliance, firms that integrate the

SDGs into their operations often report improvements in stakeholder trust and long-term value creation (Van Zanten and Van Tulder, 2018).

As mentioned above, the inherent characteristics of digital firms make them global by default and therefore expected to assist in solving current world problems by adopting a sustainable approach throughout all their operations. Here, the concept of corporate sustainability can then be understood as a way of generating long-term value for stakeholders by integrating economic, environmental and social considerations into the firm's daily activities (Hahn et al. 2015). Additionally, Meuer et al. (2020) specify that corporate sustainability places importance on the role that firms have in supporting or harming the systems in which they are embedded in. The following section will then explore what this concept implies in the context of digital firms.

2.2.1 Corporate Sustainability in the Digital Firm

While bringing together different sets of actors and assets to create economic value, the digital firm becomes also responsible for creating social value. The unique organizational structure of platforms posits specific issues to the meaning of sustainability for digital enterprises.

From an environmental perspective, challenges are significant for digital firms, because of the carbon footprint associated with the infrastructure they rely on, such as data centers and communication networks. Traditionally, digital companies have been perceived in a favorable light, as they have revolutionized communication and work practices, contributing to reducing the impact of human activities on the environment. Nevertheless, Belkhir and Elmeligi (2018) show through their research that the energy consumption of ICT infrastructure, namely data centers, is considerably on the rise and currently represents almost half of the total emissions produced by such sector. According to the authors, if current trends persist, the ICT sector's contribution to global greenhouse gas emissions could grow from 1.6% in 2007 to over 14% by 2040, surpassing some of the traditionally highest-emitting industries. This study shows how a significant share of this footprint stems from data centers, that are central to the functioning of cloud-based platforms. These facilities consume massive amounts of electricity to power computational processes and maintain cooling systems for server stability. This situation therefore undermines the notion that digital firms are inherently sustainable and highlights a growing disconnect between perceived and actual environmental performance, that digital companies are expected to address.

However, as much as platform firms are required to intervene in this regard, their ecosystem structure adds complexity to environmental accountability. Because a platform's operations

depend on a large network of users and complementors, energy use and environmental impact are diffusely distributed across the ecosystem. For example, large volumes of user-generated content and real-time services generate processing demands that are invisible to users yet significant in environmental terms. This reinforces the notion that sustainability in digital ecosystems is the outcome of coordinated ecosystem-wide practices. Hence, it becomes crucial for platform leaders to orchestrate sustainability across their networks, encouraging complementors to engage in practices that enhance social value in the environmental sense. In this regard, the environmental sustainability of digital platforms depends not only on technological innovation but also on how well platform leaders govern and align their ecosystems toward shared sustainability goals.

This need for orchestration extends beyond environmental concerns. Managing sustainability within platform ecosystems also involves addressing broader dynamics between ecosystem members, particularly in the social domain, where trust, responsibility, and values are harder to enforce. As previously mentioned, a platform is usually populated with members that are loosely coupled. As they engage in value-creating activities with each other, they all are responsible to a certain extent for the environmental and social sustainability of the ecosystem. However, as the platform leader possesses only limited control over participants' behavior, this may signify a higher risk of friction between platform's members (Yi et al., 2023). Complementors of social networks, such as TikTok or Facebook, can, for example, engage in hate speech, such as discriminatory and offensive discourse against specific social groups, therefore harming the social dimension of the platform.

In this context, technological tools, such as artificial intelligence, are expected to play a central role in managing social sustainability in the platform environment. In digital ecosystems, AI-driven content moderation systems offer to digital companies a scalable and dynamic response to harmful behaviors, such as fake news, cyberbullying, and online harassment (Kaplan and Haenlein, 2020). This is especially relevant for social media platforms, on which a large amount of content is uploaded daily, which can make traditional moderation approaches insufficient. A notable example is YouTube's content moderation system, which leverages machine learning algorithms to automatically detect and remove videos that violate its community standards. Nevertheless, it must be noted that YouTube combines these mechanical mechanisms with human reviewers for more nuanced cases, showing that a hybrid model is often necessary to navigate the contextual complexity of online discourse (YouTube, 2025). As a matter of fact, AI technology still struggles with understanding context, cultural nuances, or irony, leading to

the removal of non-problematic content or, on the other hand, allowing harmful content to stay online. Additionally, over-reliance on opaque algorithms can raise concerns about censorship, lack of transparency, and accountability. These limitations highlight that algorithmic solutions alone are insufficient to ensure sustainable behavior within digital ecosystems. Therefore, this aspect presents a challenge for the platform leader, who must therefore utilize a system of rules and policies to encourage members' sustainable behavior.

In this regard, Lin et al. (2024) identify two factors that predict the behaviors of members of the ecosystem: the system of rewards and punishments implemented by the platform leader and reputation mechanisms. The authors underline how the members of an ecosystem are characterized by bounded rationality and could engage in harmful behaviors for the collective, despite being part of an interdependent structure. By providing selective incentives, the firm can guide the behaviors of the participants and help resolve the tension between individual members' interests and collective ones. In this way, the platform leader promotes responsible behavior at the platform-wide level. At the same time, the reputation of the platform is the product of both the platform leader and its stakeholders' actions and interactions. This is, for example, achieved through reputational mechanisms within the platform, such as ratings and feedback that complementors and users provide about each other. The negative behavior of either one of the two sides can spill over to the media and produce negative media attention, which in return can harm both the reputation of the platform and the one of its individual members. The potential losses that negative media coverage can solicit pushes therefore all members to behave responsibly. These two district mechanisms underline therefore an important aspect of corporate sustainability for digital firms, that is that achieving sustainability at the platform-level is a process of co-creation of social and environmental value, achieved by the collective effort of all its stakeholders.

Nevertheless, one of platforms' unique challenges highlighted by Yi et al. (2023), as already briefly noted, is the one of friction between its participants. Finding a balance among different actors can be difficult as promoting the sustainable performance of one set of members could damage other participants' interests and incentivize their opportunistic behavior. The authors believe therefore that the sustainable performance of the ecosystem is not the simple sum of members' individual sustainable actions. This is because frictions can generate externalities on internal and external stakeholders. Externalities can either enhance or impair the sustainable performance of an ecosystem in a way that can be greater or less than the actors' individual performances combined. So, for example, if the platform leader is able to leverage the assets

and capabilities of ecosystem's actors in a prosocial way, this can cause social synergies and positive externalities that make the sustainability of the platform greater than the combination of the actions of the singular parties. It is therefore the task of the platform leader to reduce negative externalities by discouraging frictions and to enhance positive externalities by supporting synergies. The former will reduce social value co-creation, while the latter will increase it.

What makes the ecosystem structure even more complex is also the interconnectedness of its members. As discussed, actors possess bounded rationality, resulting in issues for collective action (Chen et al., 2022; Lin et al., 2024). This means that actors may pursue different goals given their different self-interests. Following this logic, participants of a platform's ecosystem may also have interest in different social issues. Participants can demand other actors to engage in pro-social behavior, but at the same time they must also satisfy the requests of other actors for pro-social actions. If, for example, some actors perceive the requests for pro-social behavior as going against their personal interest, this can cause collective action problems, hindering the chance of achieving higher levels of sustainable performance for the ecosystem as a whole. The interdependence of actors and the different kinds of externalities that their interactions create are then the two elements that influence how social value is created in the context of platforms and make the pursuit of corporate sustainability for the digital firm especially challenging.

An additional layer of complexity arises from the structural differences among digital MNEs, particularly in terms of whether they operate with or without a prominent physical presence. As mentioned earlier, there is a clear distinction between firms with a fully digital identity and those that integrate an online presence with a significant physical one. In particular, the lack of material visibility of fully online businesses can present unique aspects in terms of how such firms can address sustainability expectations. For example, the absence of physical presence can make it more difficult for stakeholders to form trust-based evaluations of a firm's behavior and intentions. Unlike companies like Amazon, that owns warehouses, or Netflix, that possess its own studios, fully digital enterprises do not have a physical point of contact through which stakeholders can assess their operations, ethical standards, or societal contributions.

For this reason, their processes can be viewed as opaque, creating information asymmetries between the platform leader and the ecosystem members. As Cennamo and Santaló (2019) point out, every platform ecosystem must face a tension in generativity, which is the result of a higher fragmentation within the ecosystem as this keeps growing. Because users' needs and preferences are diverse, the platform needs to attract a pool of heterogeneous and specialized

complementors to address such variety. However, as the base of complementors increases, the diversity in the value that they provide also grows. This is due to the fact that, to foster growth and innovation, the platform leader tends to avoid limiting users and complementors access and participation in the ecosystem. Because of this, contributions can be unfiltered and uncoordinated, leading to free-riding issues, where some members can exploit the reputation of the platform and the efforts of other members' value-enhancing activities to capture greater value than they are collaborating to create. This can result thus in a damage to the reputation of the platform ecosystem, since it is the perceived quality of the complementors that users interacted with that builds users' sense of the average quality of the platform.

This represents a challenge especially in fully digital ecosystems, where members rarely engage face-to-face and trust must be therefore built entirely through digital interactions, system reputation, and platform governance mechanisms. Without physical oversight, it becomes difficult for the platform leader to monitor and enforce socially responsible behavior. This leads to information asymmetry, where users cannot clearly assess the value provided by the complementor before the interaction. Moreover, the heterogeneity of complementors in digital-only ecosystems increases the variance in how actors interpret and respond to social and environmental expectations. As Cennamo and Santaló (2019) note, this growing diversity leads to fragmented value perceptions and can erode collective credibility when contributions do not align with shared goals. Fully digital businesses may be therefore especially in need of strong coordination and incentives mechanisms to ensure alignment among ecosystem participants, promote consistent pro-social behavior, and safeguard the platform's overall legitimacy in the eyes of stakeholders. The lack of physical presence in fully digital firms can thus intensify the generativity tension, making it harder to align ecosystem members around shared social values and increasing the firm's exposure to moral hazard and trust deficits in sustainability discourse.

Building on the importance of interconnectedness, Ricart et al. (2020) identified three different elements of platform sustainability, which they use to create a framework that has the goal of ensuring the successful management of platform stakeholders. In their research, they analyze the resistance to platforms coming from external stakeholders rather than internal ones. As a matter of fact, the authors recognize that, in a digital platform, stakeholders' interdependence is more pronounced since it is a multisided context. Therefore, the relationship that the firm has with one set of stakeholders will also influence its way of connecting with other groups of stakeholders because of network effects. That is why the authors call for a relational approach to joint value creation that takes in consideration all stakeholders when designing the structure

of a platform, since the exclusion of some stakeholders can generate negative externalities and hinder social value-creation. To achieve this goal, the authors emphasize the need to build an inclusive social value proposition, which takes in consideration all stakeholders and reinforces the reciprocation between the firm and stakeholders. Lastly, the need to have mechanisms to ensure coordination is also highlighted. These three elements are all considered key to develop social value that can be sustained over time and to promote the wellbeing of the ecosystem and of all its stakeholders.

2.2.2 Stakeholders of the Digital Firm

A stakeholder is an individual or a group that can impact or be impacted by a firm's activities. This means that these different actors can either support or hinder a firm's ability to achieve its organizational goal (Frynas and Yamahaki, 2016). For this reason, enterprises aim at creating positive relationships with their stakeholders, and at catering to their needs, to be able to keep operating successfully (Lock and Seele, 2017). Therefore, pressures from different stakeholders influence directly or indirectly corporate's actions (Frynas and Yamahaki, 2016).

In the context of a platform, stakeholders are all the entities that have a stake in the processes and operations regarding its governance (Gorwa, 2022). Scholars have proposed different ways of classifying stakeholders in the platform's ecosystem, emphasizing the dynamics of power and interdependence that shape the relationships among digital firms and their stakeholders (Lock and Seele, 2017; Papaevangelou, 2021; Gorwa, 2022; Lin et al., 2024).

At the platform level, two groups of stakeholders can be identified within the ecosystem: users and complementors. These two groups represent the internal stakeholders of the ecosystem. Complementors are the individuals and organizations that offer complementary assets on the platform. They play a fundamental role as they are needed to attract users to the platform and stimulate positive network effects. Users can be instead defined as those actors that demand and consume the assets offered by complementors in exchange for a monetary remuneration or the sharing of data. Like complementors, users are also vital for the platform to exist and be successful, as the higher the number of users the greater network effects will be. Especially in the context of platforms, the strength of network effects must not be underestimated because it is the key factor to achieve high levels of market concentration, which often lead to winner-takes-all outcomes (Cutolo and Kenney, 2021). Because of this, complementors and users are stakeholders that the platform leader must pay particular attention to. At this level, Yi et al. (2023) identify a first category of sustainability issues that can take place. Such problems are

caused by platform activities and pertain actors within the ecosystem. They are mainly social frictions between participants and or between participants and the platform leader.

Applying the notion of keystone actors proposed by Iansiti and Levien (2004), the central role of the platform leader can be better understood. Borrowing this concept from biology, the authors explain that keystone species are those whose impact in their natural environments is way larger relative to their abundance. In this same way, keystone firms for the authors are those that enhance the overall health and productivity of their business ecosystems. Rather than maximizing short-term gains or dominance, keystone firms focus on increasing the value generated by the entire ecosystem. They do this by ensuring a stable environment, reducing barriers to innovation for others, and offering core services or platforms upon which other members can build.

In the context of digital firms, the platform leader does not only participate in its ecosystem, but it actively shapes and sustains it. By fostering stability, enabling collaboration, and encouraging value creation, the platform leader performs a coordinating function that is critical to ecosystem success. This means designing governance mechanisms not just to mitigate conflict, but to actively promote the prosperity of all participants, which entails a long-term vision of shared value creation.

For complementors, a relevant concern can be power asymmetries. Because the firm owns the digital space that complementors occupy, it has control over the technical components of the platform, such as data, APIs and algorithms, determining the specifications of complementors' participation. Moreover, the platform leader is also responsible for setting the system of rules and principles that regulate and govern the ecosystem (Cutolo and Kenney, 2021). This power imbalance can then result in a perceived lack of fairness for complementors (Karanović et al., 2021). Issues can include an unfavorable commission structure, unilateral changes of terms of participation, a unilateral and opaque management of algorithms from the platform leader or information asymmetries. The high amount of data that the platform leader is able to collect through complementors' activities can also represent a risk, as the proprietary firm can decide to use the collected insights to launch rival services and products, like the cases of Amazon and Microsoft show (Cutolo and Kenney, 2021). From a social standpoint, algorithms and platform's rules can perpetuate biases and inequalities against complementors. As platform workers are not formally employed through a contract, they can suffer precarious work conditions and lack of legal protections (Etter et al., 2019; Karanović et al., 2021).

For users, lack of transparency or control over personal data is a relevant issue. Ethical matters can include privacy violations, collection of data without clear understanding and permission from users, manipulation through targeted advertising, discrimination, surveillance, a loss of control on how data will be shared and an overall lack of accountability over ethical handling of such data (Martin, 2015; Etter et al., 2019). From an environmental point of view, platform firms' algorithms may encourage overconsumption, while every interaction can contribute to the energy consumption of data centers, leading to a relevant digital carbon footprint. Algorithms can also perpetuate bias and inequalities against marginalized groups (Lambrecht and Tucker, 2019), while social media has been shown to contribute to mental health issues, such as depression and distorted self-image (Keles et al. 2020). Other concerns may comprise poor content moderation and prioritization of engagement over truth, which can cause an over exposure to misinformation, hate speech, and harmful content (Vosoughi et al., 2018).

On a second level, the platform firm should pay attention to those issues arising in the external environment that can influence its ability to achieve its organizational goals (Yi et al., 2023). Here, the interested stakeholders may be investors of the platform company, its employees, regulators, NGOs and media outlets.

By allocating financial capital, investors hold significant influence over governance matters and their expectations shape how platform businesses balance economic growth with social and environmental imperatives. Activist investors may withdraw investment if the firm is perceived as socially or environmentally irresponsible or if the platform company is found to engage in practices of greenwashing (Zaheer, 2024). However, investors can also play the opposite role and pressure the platform firm to pull back from some of its initiatives targeted at the social and environmental spheres, like the cases of Meta, Amazon and Google depict (Cheung, 2025; Sherman, 2025).

Employees of the platform are also important stakeholders, whose well-being and motivation can directly impact the achievement of the platform's goal. Issues here may be more similar to those faced by more traditional businesses, such as a lack of inclusion and diversity in the workforce, the need for a healthy work-life balance and the enforcement of health and safety policies. Some matters could be, nevertheless, more specific to digital firms, considered that employees in this field, for example, are reportedly more at risk of experiencing burnouts (Bradford, 2018).

Regulatory bodies also represent a crucial stakeholder whose actions can significantly impact a company's operations and overall strategy. Regulators can intervene to hinder monopolistic behavior to ensure fair competition (Rahman-Jones, 2025), like the US Department of Justice did by suing Google with the accuse of owning an illegal advertising monopoly. Some platforms may face backlash related to their labor practices, that can exploit precarious work and foster unfair employment practices (Etter et al., 2019; Cornelissen and Cholakova, 2021). Concerns over inadequate data protection and surveillance practices can also lead regulators to step in, like in the case of the heavy fines received by Meta for GDPR violations in the EU (Satariano, 2023). Other issues may include requests for increasing content moderation and control over misinformation and harmful content, as well as transparency of platform algorithms, matters that the EU has, for example, targeted through the recent Digital Services Act. Moreover, tax avoidance of platforms has also been the focus of regulatory bodies in the last few years, and several countries have started to introduce digital services taxes to solve the issue of platforms paying little taxes in the areas they operate.

NGOs and other civil society organizations can also target digital firms by expressing their concerns over a wide range of issues, such as labor rights, data privacy, digital inclusion, digital carbon footprint and greenwashing practices. Such organizations can impact digital companies by conducting campaigns aimed at damaging their reputation, by boycotting and lobbying, and their influence is given by their capability of attracting public attention to specific matters (Lock and Seele, 2017).

As previously discussed, media outlets can also be influential stakeholders as they can harm the reputation of a company through negative media coverage (Lin et al., 2024), shape public perceptions, prompt activism and influence regulatory interventions. Media outlets can act as amplifiers of social frictions and catalysts for government regulation. As a matter of fact, media narratives can magnify and support disputes between the platform and its complementors or local communities, by for example reporting the claims of Uber drivers during their strikes (Turnndige, 2025) or the complaints of Pittsburgh residents over AirBnb (Sheehan, 2025). Such stories not only have the power to bring public attention to issues that can cause reputational damage to the company, but also have the power to formalize the concerns of these groups of stakeholders and engage others as well, such as NGOs and regulators (Ricart et al. 2020).

At a third level, Yi et al. (2023) identify those issues that may arise as a result of the emergence of the digital economy and relate to the problems that society face at a wider level. In this category, society as a whole can be identified as a relevant stakeholder. At this stage, digital

firms can be held accountable for issues that go from the preservation of democracy, poverty reduction and humanitarian crises, to energy consumption and cybersecurity. An example of this can be found in the way Airbnb decided to use its capabilities and resources to contribute to the resettlement of Ukrainian refugees following the Russian invasion of Ukraine in 2022 (Mintah and Elmarzouky, 2024). On a similar note, the introduction of ride-sharing platforms such as Uber and Lyft was found to reduce car accidents caused by drunk driving (Greenwood, and Wattal, 2017). Conversely, dating apps like Tinder were found to foster the spread of sex transmitted diseases, which can cause concerns of public health (Kelsey, 2015). To provide more clarity, the following table summarizing key stakeholders, their roles, and sustainability concerns was created by the author (Table 1).

Table 1. Key Stakeholders in Digital Platform Ecosystems and Their Sustainability Concerns.

Stakeholder Group	Role in Platform Ecosystem	Key Sustainability Concerns
Complementors	Provide complementary assets, services, or products; essential for generating user demand and enabling network effects.	• Power asymmetries with platform leaders (Karanović et al., 2021) • Unfair commission structures and opaque algorithm management • Precarious labor conditions, lack of legal protection (Etter et al., 2019; Karanović et al., 2021) • Algorithmic bias and discrimination • Risk of being displaced by platform's leader own products and unfair

		competition (Cutolo & Kenney, 2021)
Users	Demand-side actors who consume, engage with, or pay for services; drive engagement and platform growth.	• Data privacy and lack of control (Martin, 2015; Etter et al., 2019) • Exploitative advertising practices (Lambrecht and Tucker, 2019) • Exposure to misinformation and hate speech (Vosoughi et al., 2018). • Digital overconsumption and environmental footprint • Mental health risks, discrimination (Keles et al. 2020)
Investors	Provide capital and shape strategic priorities; influence sustainability through expectations and activism.	• Pressure for short-term returns vs. long-term ESG commitments • Risk of divestment due to greenwashing or poor ESG performance (Zaheer, 2024). • Pushback on sustainability

		investments (Cheung, 2025; Sherman, 2025)
Employees	Internal workforce responsible for operations, development, and innovation.	• Burnout risk in high-performance tech culture (Bradford, 2018) • Need for diversity, equity, and inclusion • Work-life balance and psychological safety
Regulators	Governmental bodies that oversee compliance, competition, and ethical practices.	• Antitrust interventions (Rahman-Jones, 2025) • Content moderation and algorithm transparency • Privacy laws (Satariano, 2023) • Labor protections (Etter et al., 2019; Cornelissen and Cholakova, 2021) • Tax fairness
NGOs and Civil Society	Advocate for ethical, environmental, and social issues affecting communities.	• Digital inclusion and access • Labor rights advocacy • Environmental footprint and carbon accountability

		• Campaigning against greenwashing (Lock and Seele, 2017)
Media Outlets	Inform public opinion, spotlight controversies, and shape reputational perceptions.	• Amplify stakeholder concerns (Lin et al., 2024) • Influence regulatory responses (Ricart et al. 2020) • Highlight social frictions
Wider Society	Indirect stakeholder impacted by platform activities and externalities.	• Cybersecurity • Democracy protection (Mintah and Elmarzouky, 2024) • Digital inequality • Mental and public health impacts (Greenwood, and Wattal, 2017; Kelsey, 2015) • Contribution to SDGs

Source: created by the author.

In this regard, it can be useful to consider the contribution that digital firms can make to wider society through the lens of the UN Sustainable Development Goals (SDGs), as they represent a comprehensive and universal framework for sustainability issues. Thanks to their capacity to quickly internationalize and become operative in multinational markets, digital firms can be considered to be in an optimal position to address grand challenges that extend across national borders and affect the entire world (Montiel et al., 2021). Recent research also discusses the capability of platform businesses to accelerate the SDGs (Isensee et al., 2025), thanks to their

potential of promoting resources accessibility and equity, sustainable consumption habits and better resource management (Bisultanova, 2023).

In particular, the platform economy could contribute to Goal 8 on decent work and economic growth, as platform businesses can facilitate job creation, enabling individuals to monetize skills and services flexibly. Companies like Fiverr and Uber can lower entry barriers to employment, and marketplaces like Alibaba and Etsy can support micro-entrepreneurship and small businesses. Naturally, platform enterprises can address Goal 9 on industry, innovation, technology and infrastructure, as digital platforms are innovation-driven and can play a pivotal role in creating resilient digital infrastructure, especially in developing regions. The possibility of democratizing access to markets, services, and information can provide a contribution to Goal 10 on reduced inequality. As already mentioned, the platform economy can facilitate access to employment, while social media can possibly empower marginalized communities by giving them global visibility and bringing awareness and attention to their struggles. The sharing economy can make a significant difference with Goal 12 on responsible consumption and production, since it promotes access to underutilized assets and resources rather than ownership over them. Consequentially, promoting new consumption patterns allows also to target Goal 13 on climate action. Finally, Goal 17 on partnerships for the goals addresses the need to develop multi-stakeholder relationships, that platform businesses are in the ideal position to build given their ecosystem nature. The pervasiveness of the digital infrastructure that they rely on and their multisided structure make them potential enablers of collective action towards SDGs. Building on these contributions to global goals, digital firms also leverage such efforts as a way to legitimize themselves, demonstrating therefore alignment with widely shared societal values and expectations. In this context, supporting the SDGs is both a moral imperative and a pragmatic approach to embedding digital firms more acceptably within society and gaining legitimacy.

2.2.3 Legitimacy of the Digital Firm

Legitimacy can be defined as the broad perception that the activities undertaken by a business are acceptable, appropriate and aligned with the values, beliefs and norms held by society. According to legitimacy theory, companies need to be socially accepted to prevent disapproval and disfavor that could hinder them from achieving their organizational objectives (Frynas and Yamahaki, 2016). Firms and society are therefore bound to each other through a form of social contract and if this contract gets broken, the firm's survival gets threatened. This means that, in

the long term, the existence of the enterprise depends on the legitimacy that society confers on it (Gilbert et al., 2024; Zaheer, 2024).

To ensure this, firms need to continuously align their actions with societal expectations to find and receive legitimacy. It must be then highlighted that the source of this legitimacy is external to the company, as it is given by groups outside of the firm. Because of this reason, legitimacy theory can be seen as an extension of stakeholder theory. If the latter focuses on the interests of specific groups of society, the former looks at the expectations of society as a whole. The need for legitimacy is especially fundamental for companies that operate globally as they are more visible and therefore exposed to societal scrutiny (Frynas and Yamahaki, 2016). Digital firms, through the ability to exploit network effects, can also internationalize quickly and build a dominant position in their markets. In particular, large platform firms may be able to control access to a market, its structure and business practices, as well as a large amount of users' data (De los Reyes and Scholz, 2023; Gilbert et al., 2024). Moreover, digital firms usually are based on a disruptive business model, which industry regulations are not appropriate for. Because of all these reasons, platform firms can face legitimacy struggles.

Gilbert et al. (2024), for example, emphasize the role that some digital firms play as gatekeepers of information. By highlighting that platforms can gather large amount of data on users behaviors, demographics and preferences and use such insights to tailor messages to specific audiences, the authors argue that digital firms are greatly responsible for mobilizing and informing a lot of users, therefore making them political actors (Lindman et al., 2024). Such power can, however, be questioned by stakeholders, as digital firms are not organizations intended to foster political participation or social welfare. This is especially true considering that the business practices of digital firms are often criticized for deviating from the expectations of stakeholders. The lack of regulations that can capture and address the practices of platform firms adds even more complexity to the issue of how to gain and maintain long-term legitimacy for these companies.

As a matter of fact, legitimacy is a nuanced construct that possesses different facets. Suchman (1995) identifies three distinct dimensions of legitimacy. At a pragmatic level, legitimacy is the perception that the activities of a company are useful and functional. At a cognitive level, the firm is considered legitimate if it can align its activities with the cognitive and cultural models of stakeholders. Finally, the alignment of a firm with societal values and ethical norms makes it legitimate from a moral standpoint. Researchers have therefore focused on how digital firms manage to build legitimacy in a way that encompasses all its dimensions.

Garud et al. (2022), for example, uses the case of Uber to study how digital platforms can build legitimacy despite the fact that their business model does not conform to industry regulations. In their study, the authors emphasize how fundamental it is for platforms to gain legitimacy as they depend on external actors, such as complementors and users, to make the platform function and to initiate network effects. This is achieved mainly by building cognitive and pragmatic legitimacy when the firm first enters the market. However, as the company grows and expands, its lack of moral legitimacy can be accentuated, because of the negative externalities that emerge due to its business model. The inadequacy of regulations to address such issues can aggravate the perceived lack of legitimacy, especially if the firm competes with traditional businesses in industries where strong regulation is already in place, like in the case of Uber. In this context, the mismatch between the laws in place and the platform firm is even more evident as the legislators try to force the digital firm to adapt to existent rules, since, in the view of regulators, the company offers the same solution of the rival traditional businesses.

To solve this legitimacy gap, digital enterprises can self-regulate to fill the regulatory void. Through self-regulation, companies decide autonomously their standards of behavior as a form of soft law, which goes beyond the existing regulations (Gilbert et al., 2024). Companies can therefore use codes of practice, corporate sustainability initiatives or informal agreements to self-regulate. However, as Cusumano et al. (2021) discuss in their research, companies may not always be willing to self-regulate. By analyzing multiple instances of both non-digital and digital firms attempting to self-regulate, they conclude that firms can be reluctant to adopt self-regulation when the immediate costs are perceived as substantial, particularly when such changes could weaken network effects or threaten short-term profitability. In these cases, the potential for reduced user engagement or slower growth often discourages proactive self-regulatory efforts. This is why the authors argue that firms tend to self-regulate more when they perceive a concrete risk of becoming the target of government intervention. Even if adopting stricter internal policies might negatively impact short-term revenue or growth, the prospect of binding external regulation often motivates firms to act preemptively to maintain greater control over the rules that govern their operations. This is especially true when issues concerning public health, safety and fraud are at hand, since such matters have higher chances of triggering governmental action. Moreover, different sides of the platform may be impacted differently by self-regulation efforts. The extent to which incentives are aligned between these different groups thus significantly influences the likelihood of self-regulation. Some regulatory measures may impose greater costs on one group while offering benefits to another and this could be the cause of friction in the ecosystem. Despite all the challenges that self-regulation can present to

digital firms, the authors argue that the decision not to self-regulate can be counterproductive. When companies decide to act primarily out of self-interest, they engage in behaviors that can compromise critical shared assets for their business. In the case of digital platforms, that shared asset is the trust of their ecosystem members. This trust is the driving force behind the global digital economy which facilitates commerce, communication, and the free flow of information. When platforms undermine this trust through opaque practices, data misuse, or unchecked harmful content, they risk degrading the very foundation that supports their long-term viability and success.

A prominent example of the limitations of self-regulation in digital platforms is the case of Uber and its labor practices. Uber has been for a long time at the center of public attention for the ambiguous employment status of its drivers, which has put them in unfair working conditions. For years, Uber has positioned itself as a technology company rather than a transportation provider, arguing that its drivers are independent contractors rather than employees. This classification has allowed Uber to bypass traditional labor protections such as minimum wage laws, health benefits, and the right to unionize (Padin, 2019). In response to growing criticism and legal challenges, Uber launched several self-regulatory initiatives, such as offering in-app tipping, limited insurance coverage, or access to certain benefits for drivers (Uber, 2018). This is consistent with the arguments that Cusumano et al. (2021) present in their research: digital platforms tend to adopt self-regulation when they face credible threats of government intervention. However, workers' rights association have argued that these efforts have been superficial and designed more to forestall formal regulation than to address the core issues of precarious work and power asymmetry between the platform and its drivers. Such concerns have been even more validated by the fact that Uber was found to invest heavily in lobbying efforts and public campaigns to limit public regulation or to significantly influence it (Chan, 2022). In this case, promising a limited set of benefits to its drivers are viewed by Uber's critics as concessions made to appear responsive without fully committing to structural labor reform.

This case may then suggest that self-regulation can function as a strategic tool for platforms to delay, weaken, or avoid external constraints. At the same time, it also highlights the tension between short-term business interests and the pursuit of social legitimacy. Yet, legitimacy is also earned through active and inclusive engagement with stakeholders. The level to which the groups affected by the firm's activities are included in the decision-making of the company legitimacy process and the extent that the firm is willing to converse with these stakeholders determine its success to morally legitimize. Through inclusion, the firm acknowledges the effect

that its innovations can have on different groups of society and intends not only to target them through its legitimacy strategies, but also to make them a part of the legitimacy process itself (De los Reyes and Scholz, 2023). However, the chance of gaining legitimacy depends also on the type of dialogue that the company engages with stakeholders. The firm can ask stakeholders to share their opinions to take into consideration their positions in its decision-making process. At a higher level of inclusion, stakeholders can be part of the process of choice itself through either negotiations or deliberations. In negotiations, the firm and stakeholders bargain to reach an agreement which can satisfy the interests of all the parties. Deliberations take the process of inclusion further, by allowing stakeholders to not only limit themselves to negotiating, but also to debate with each other, develop their views, solve conflicts and exchange ideas. In a similar way, Suzor et al. (2018) have suggested that platform firms may gain moral legitimacy through their ability to enable principles of legitimate governance. In this sense, the authors point out the importance of observing the rule of law and being transparent, as well as promoting the participation of multiple stakeholders in the process of taking decisions, while Frynas and Yamahaki (2016) mention sustainability reports as a relevant tool used by firms for legitimization purposes.

Legitimacy can then be considered the result of a dynamic process that digital platform firms must continuously negotiate and uphold. As these firms often disrupt established industries, they face heightened scrutiny from a broad range of stakeholders. The capacity to scale rapidly, exert market power, and accumulate vast amounts of user data positions them not only as commercial actors but also as pivotal holders of economic opportunity, public discourse, and social influence (Lindman et al., 2023). In such a position, maintaining legitimacy becomes both more critical and more complex.

To sustain societal acceptance over the long term, platform firms must seek to establish pragmatic, cognitive, and moral legitimacy. This entails not only proving their functional value to users and complementors but also aligning their business models with societal expectations and norms. Self-regulation can offer a partial response to the limitations of existing legal frameworks, which often lag behind innovation. However, without genuine stakeholder engagement and transparency, such efforts risk failing. Therefore, the inclusion of diverse voices through participatory processes can serve as a foundation for moral legitimacy. Ultimately, digital firms must move beyond compliance to foster trust, demonstrate accountability, and co-create the social value that reflect their growing societal impact in the evolving digital economy.

This chapter has thus laid the theoretical lens necessary to critically assess the sustainability and legitimacy challenges that digital firms must face in the current interconnected, rapidly evolving business environment. By integrating stakeholder theory, legitimacy theory, and the platform ecosystem literature, the chapter has aimed to offer a multidimensional view of the dynamics shaping corporate responsibility and public accountability in the digital economy.

This chapter has outlined the core attributes that characterize digital firms, highlighting their reliance on digital infrastructure, platform-based models, and scalable value creation. Digital firms operate within complex digital ecosystems, leveraging internet technologies to deliver services and facilitate interactions. Their defining features include high levels of operational flexibility, asset-light structures, accelerated internationalization, and the ability to harness network effects for rapid growth. These capabilities not only allow digital firms to achieve global reach early in their lifecycle but also to adapt swiftly to changing environments. Importantly, network effects underscore the deep interdependence among ecosystem participants, reinforcing the need to understand digital firms not as isolated entities, but as central actors within a broader ecosystem.

Digital firms do not simply offer products or services; they create digital environments in which diverse actors interact, innovate, and co-produce value. These interactions are enabled by modular and scalable architectures, which allow loosely coupled yet interdependent actors to collaborate without formal hierarchies. As platform leaders, digital firms orchestrate this coordination by designing rules, governance mechanisms, and interfaces that balance openness with control. Through matchmaking, resource-sharing, feedback systems, and technical boundaries, platform owners guide behavior, stimulate innovation, and manage ecosystem-level risks and dependencies. However, the locus of value creation lies largely outside the firm, even as the locus of control remains within it. This shift has profound implications for how digital firms approach sustainability and legitimacy, particularly as they depend on independent actors to deliver the platform's value proposition. These interdependencies, marked by flexibility, complementarities, and loose coupling, require new governance strategies and ethical considerations.

The nature of digital businesses poses therefore unique sustainability challenges. Because of their multisided structure, they mediate between various groups of stakeholders, each with distinct expectations, resources and needs. Complementors and users represent the core internal stakeholders of the platform, while external actors such as investors, regulators, media, civil society organizations, and society at large add further layers of complexity. What distinguishes

platforms from traditional firms is that they act not merely as producers or service providers, but as orchestrators of interactions within vast and loosely coupled ecosystems. These ecosystems are marked by asymmetric dependencies, fragmented responsibilities, and complex network effects. As discussed through the work of Yi et al. (2023) and Cutolo and Kenney (2021), such a structure makes it more difficult for the platform leader to directly enforce responsible behavior among participants, necessitating a reliance on indirect mechanisms like governance structures, algorithmic rules, incentive and reputation systems.

Building on this, the chapter introduced the role of the platform leader as what Iansiti and Levien (2004) describe as a keystone actor within digital ecosystems. Keystone actors play a central role in fostering cooperation and maintaining the health of the overall ecosystem. As Tiwana (2014) and Adner and Kapoor (2010) have shown, the value created by an ecosystem depends on how well interdependencies are managed and aligned. For digital platforms, this implies that sustainability cannot be achieved in isolation, but it must be co-created through deliberate coordination and alignment of incentives across ecosystem stakeholders. This idea reaffirms the centrality of governance and architecture in digital platform design. Therefore, the way platform firms structure access, participation, control, and value distribution shapes sustainability outcomes in fundamental way.

Environmental sustainability emerged as an important aspect of the operations of a platform. As highlighted by Andrae and Edler (2015), the digital sector's carbon footprint, particularly from data centers and cloud infrastructure, continues to grow. This reality challenges the common narrative of digitalization as inherently eco-friendly and necessitates greater transparency and accountability around the environmental costs of digital services. Moreover, platform firms must extend sustainability practices to ecosystem actors. The sustainability challenge is thus both direct and indirect.

As digital firms rely on loosely coupled relationships with users, complementors, and other stakeholders (Li et al., 2019; Hein et al., 2020), the orchestration of sustainability outcomes becomes a shared responsibility. As Yi et al. (2023) emphasize, this configuration can create friction among participants, where promoting sustainability in one area may unintentionally impose constraints on others. Thus, social and environmental performance are not the mere sum of individual efforts, but a co-created dynamic shaped by both positive and negative externalities.

The challenge of aligning autonomous actors toward shared social and environmental goals is exacerbated in fully digital ecosystems, which often lack physical touchpoints that facilitate trust (Chen et al., 2022). Without tangible signals of responsibility, users and stakeholders may find it harder to evaluate the ethical standards or contributions of a platform. This opacity of digitality, as some scholars have named it (Cennamo & Santaló, 2019), increases the need for robust governance frameworks that compensate for the absence of face-to-face accountability and material visibility.

Moreover, as Ricart et al. (2020) argue, digital firms should adopt a relational approach to value creation, recognizing that multisided network effects mean that decisions affecting one group inevitably impact others. Inclusive governance models that consider external stakeholders are essential to mitigate reputational risks and foster the legitimacy of the platform's sustainability claims. This includes building social value propositions that align with the interests of all ecosystem members and reinforcing them with strong coordination mechanisms.

The role of keystone actors in such ecosystems, as articulated by Iansiti and Levien (2004), is central to these dynamics. Rather than dominating the ecosystem for short-term gain, platform leaders are expected to enhance the health and resilience of the system by offering infrastructure, facilitating innovation, and ensuring the well-being of all participants. This responsibility is especially critical in contexts where interdependencies generate systemic risks, such as misinformation, labor precarity, data misuse, or environmental harm (Cutolo & Kenney, 2021; Martin, 2015; Lambrecht & Tucker, 2019). Keystone firms must, therefore, design governance structures that are both adaptive and inclusive, capable of responding to rapidly shifting societal expectations.

Corporate sustainability in digital platform ecosystems therefore cannot be isolated from the broader ecosystemic context in which value is generated. As Tiwana (2014), Adner and Kapoor (2010), and Gawer (2021) all highlight, the structural features of platform ecosystems create unique challenges and opportunities for firms expected to integrate social and environmental goals into their business models. The orchestration of sustainable outcomes thus becomes a core strategic function, essential not only for mitigating risks but also for securing the social license to operate in an increasingly complex and scrutinized digital economy.

Digital platforms often face legitimacy gaps due to their novel business models, regulatory ambiguity, and their acquired socio-political power (Gilbert et al., 2024; Lindman et al., 2024). These characteristics make it more difficult for such firms to align with traditional rules and

stakeholder expectations. Initially, digital firms often secure pragmatic and cognitive legitimacy by offering functional value and technological innovation. However, as they scale, their moral legitimacy is often called into question, especially when negative externalities become highly apparent (Garud et al., 2022). Regulatory gaps further intensify the risk of legitimacy loss, making self-regulation a viable option.

Self-regulation emerges as a strategic, often reactive, mechanism for digital firms to fill regulatory voids and stave off governmental intervention (Gilbert et al., 2024; Cusumano et al., 2021). However, as the Uber case illustrates, such efforts may lack substance and can be perceived as superficial attempts to preempt more robust public regulation (Padin, 2019; Chan, 2022). While companies may implement selective benefits or minor reforms under public pressure, these initiatives often fall short of addressing structural inequities. Crucially, self-regulation is more likely to occur when the threat of external regulation is credible (Cusumano et al., 2021). Furthermore, the fragmented nature of digital ecosystems means that regulatory changes may affect different sides of the platform asymmetrically, risking friction and divergent interests among users, complementors, and the firm itself.

Legitimacy must thus be co-created through participatory governance. Firms gain moral legitimacy not only by avoiding harm but by proactively including affected stakeholders in meaningful dialogue (De los Reyes & Scholz, 2023). Suzor et al. (2018) further suggest that platforms can enhance legitimacy by adhering to principles of good governance, such as transparency, rule of law, and multi-stakeholder inclusion. This is fundamental as digital firms, due to their infrastructural centrality and societal reach, are no longer neutral enablers of commerce and communication. They increasingly act as gatekeepers of opportunity, discourse, and public values (Lindman et al., 2023). As such, their legitimacy depends not only on legal compliance or market power, but also on their ability to embed themselves in societal frameworks of fairness and responsibility.

As this research proceeds to examine empirical cases and different efforts of sustainability in digital firms, the insights collected in this chapter serve as a fundamental theoretical lens. Such knowledge offers a solid base to further investigate how digital firms pursue sustainability, in which ways they attempt to balance innovation and growth with legitimacy and accountability, and what forms of stakeholder inclusion they pursue. In the following chapters, these themes will be explored through analyses of sustainability reports, governance practices and firm-level initiatives.

3. Methodology

3.1 Background

This research makes use of a qualitative comparative case study approach. There are multiple reasons for this choice. First, a comparative case study is especially well-suited for investigating complex phenomena within real-world contexts (Runfola et al., 2017). As a matter of fact, a key strength of qualitative case study lies in its ability to uncover and explain the complex link between a phenomenon and its contextual setting. As the topic under examination has not been extensively investigated so far, the study is exploratory in nature. A comparative case study is therefore appropriate, since it is a method that focuses on exploring, describing, and theorizing about phenomena by identifying similarities and differences, as well as common patterns, across multiple cases. This method provides a structured way to organize and interpret the data, offering detailed and meaningful insights (Braun and Clarke, 2006; Fereday and Muir-Cochrane, 2006).

A comparative case study approach allows to go beyond the specific characteristics of individual cases by recognizing the common features of a phenomenon. According to Knight (2001), the main goal of comparative case studies is to produce generalizable insights that span across different cases. In this context, generalizability refers to the ability to extract patterns and principles that apply beyond the specific cases under examination. While individual case studies provide detailed and in-depth insights, comparing multiple cases offers the chance to identify shared elements and divergent factors that can refine or challenge existing theories (Knight, 2001). As Braun and Clarke (2006) also state, this is a method that focuses on identifying themes or patterns across an entire dataset, rather than limiting the analysis to individual data items. In a similar fashion, Mackieson et al. (2019) affirm that thematic analysis is about extracting recurring ideas or underlying meanings within the data, allowing researchers to make sense of the phenomenon under study.

Comparative analysis involves identifying both commonalities and differences among selected cases. This approach is not only descriptive, but also interpretive, and helps to clarify complex relationships (Fereday and Muir-Cochrane, 2006). As a matter of fact, Castleberry and Nolen (2018) underline the importance of interpreting the data as a way to reach conclusions, that are accurate, fair and credible. By taking into consideration multiple perspectives, it is possible to reach a deeper understanding of the phenomenon being studied (Knight, 2001). The use of

comparative logic helps to examine the conditions under which certain phenomena occur and the mechanisms that explain differences across multiple settings.

In this sense, Takahashi and Araujo (2019) argue that case studies should be chosen based on their capability of being effectively representative of the investigated topic. Effective representation implies that the selected cases should capture the key characteristics, dynamics, and variations of the phenomenon under study, so that the insights drawn are meaningful and relevant beyond the individual case. Cases should thus be deliberately chosen to represent specific aspects of a phenomenon. For comparison, researchers must identify configurations that either share a common context but differ in outcomes or display similar outcomes within varied contexts. This allows for the identification of critical factors that contribute to different or similar results. In the context of this research, firms from different contexts were chosen to infer the presence of underlying mechanisms or principles that operate consistently across settings. Selecting the right cases is essential for comparison, and the value of the comparative method lies in its ability to highlight meaningful contrasts or commonalities. Additionally, qualitative case studies allow for the integration of diverse data sources, offering a deeper and more nuanced understanding of the object of study (Runfola et al, 2017).

It must also be noted that one of the main contributions that a comparative case study approach can offer is its potential for theory building. As Eisenhardt and Graebner (2007) point out, theory building from case studies is a way for constructing theoretical frameworks based on empirical data. Instead of verifying pre-existing hypotheses, the goal here is to develop constructs and propositions that emerge from the observed relationships among different cases. This inductive process is especially suitable for research areas where current theories are insufficient or new perspectives are needed. In a similar way, Runfola et al. (2017) also explain that this method is particularly useful when empirical knowledge is limited and theoretical frameworks are underdeveloped. As the topic of how global digital companies co-create social value in their ecosystem is still new and under researched, knowledge around it is still being developed. Each case can therefore offer evidence that either supports or challenges the evolving theory. When multiple cases replicate certain patterns or relationships, the resulting theory is considered more robust and generalizable (Eisenhardt & Graebner, 2007). It is also possible to clarify constructs and relationships more clearly, as selecting multiple cases facilitates the identification of accurate definitions and pertinent levels of abstraction. For these reasons, multiple-case studies provide a stronger foundation for theory development compared

to single-case designs, since they better allow to replicate, contrast with, and extend the emerging theory.

In this case, sampling involves selecting cases specifically because of their potential to inform the development of theory. This could mean choosing cases that are likely to produce similar results, or outlier cases that might challenge existing assumptions (Eisenhardt & Graebner, 2007). This strategic selection enhances the explanatory power of the research and helps identify the conditions and mechanisms that underpin the phenomenon of interest, while also providing empirical evidence that validates or challenges theory.

For the scope of this research, the strength of the comparative case study method lies in its ability to balance deep understanding and generalizability. As Knight (2001) emphasizes, statistical approaches may not always capture the complexity of certain phenomena. Similarly, Castleberry and Nolen (2018) also emphasize that thematic analysis enables researchers to investigate the themes present in the data with a level of depth that quantitative methods often cannot achieve, while offering flexibility to interpret and contextualize these insights throughout the analysis process. Since the goal of this study is to explore how the process of sustainable value co-creation takes place in an ecosystem structure, through the relationships and interactions that stakeholders have with each other and with the platform firm, a comparative case study appears to be a suitable approach for broader theoretical exploration.

To apply this comparative approach effectively, it was therefore essential to select cases that capture a broad range of digital platform dynamics and stakeholder interactions. The following section describes then the sample and the data collection process that was used to investigate these diverse settings.

3.2 Data Collection & Sample

To conduct this research, a sample of four different firms was selected. Such companies serve as cases for comparative analysis and were picked up because of their potential to contribute to creating new insights. Following the classification provided by UNCTAD (2017), which has been discussed in the previous chapter, one firm per category was chosen to showcase different types of digital realities. Pure digital players, such as Meta and PayPal, were taken as examples of a pure internet platform and of a digital solution provider respectively. As case of an e-commerce platform, Zalando was selected, while Spotify serves as an example for a digital content company.

Each selected firm reflects a broader set of tensions that relate to the phenomenon under investigation, namely, the ability of global digital companies to align their business models with societal expectations for sustainable and legitimate practices. Meta, for example, is not only the largest social networking company in the world, but also a central actor in global debates over misinformation, political influence and data privacy. PayPal embodies the expansion of digital financial services and its associated issues of inclusion, transparency, entrepreneurship and environmental costs linked to emerging technologies such as cryptocurrencies. Zalando captures the sustainability challenges in e-commerce ecosystems, particularly in sectors with high environmental footprints like fast fashion, as well as the social implications of working conditions in logistics. Spotify, as the dominant player in music and podcast streaming, reveals the complexities of balancing creators' compensation, content moderation, and environmental impacts tied to the increasing demand for data-intensive streaming services.

These businesses were picked by considering several criteria. First, it was important to opt for digitally native companies that operate on a global scale. For comparative purposes, firms from different industries were chosen. The distinction made by the UNCTAD, that differentiates different types of firms in the digital economy, also served as a guiding principle to pick up examples that could capture the variety of the realities present in this field. Moreover, the high level of visibility of all these firms makes them an appropriate choice to study how each of them engages with a broad network of stakeholders that extends worldwide. Because of their relevance, all four firms have been subject to public debates, providing material for analyzing legitimacy pressures. Another aspect is that each company regularly produces sustainability reports, which ensure comparable data for thematic analysis. Moreover, these firms operate in industries subject to varying levels of regulation, offering a way to explore how regulatory bodies impact self-regulation and legitimacy strategies. This is especially true considering that all four firms are market leaders in their respective sectors, meaning that their practices are likely to influence industry norms, regulatory responses and public opinion.

Secondary data, such as corporate sustainability reports, articles from media outlets, press releases, NGOs reports and relevant information available on the websites of the selected firms, served as material for this research.

Meta

Meta Platforms, formerly Facebook, is a multinational digital firm that offers social networking and advertising solutions. It owns social media platforms and communications services that

include Facebook, Instagram, WhatsApp, Messenger and Threads. As reported on its website, Meta's mission is to shape the future of how people connect and the technology that enables it (Meta, 2025a). Through an ecosystem of developers, advertisers, content creators, and over three billion monthly active users worldwide, Meta's proclaimed goal is to empower people to build community, by leveraging networking platforms to enable connection, content creation, and economic opportunities across industries.

With a reported revenue of \$164.50 billion in 2024, Meta generates an overwhelming amount of such revenue (around 97%) through advertising (Meta, 2025b). This high level of reliance on advertising underlines the strategic importance of a large and attractive user base in driving a multitude of advertisers on Meta's platforms. This is especially true considering that Facebook is the social media platform with the highest number of active users worldwide, which exposes Meta to a high degree of public scrutiny and to a strong need to justify its position of power and influence over how communication and information is created and consumed at a global level every day. For example, in 2016 more than 90 million photos and videos were posted daily on Instagram and 40 billion texts were sent on WhatsApp every day (Lee, 2016). Such data reveal therefore how much the platforms provided by Meta are part of the daily life of an extremely high number of people around the world.

It is then not surprising that the company is under ongoing attention over pressing issues such as spread of misinformation and fake news. As a matter of fact, the recent decision of Meta to renounce to the use of independent fact checkers to ensure the accuracy of posts published on Instagram and Facebook has raised concerns over risks of political disinformation from advocacy groups such as the Union of Concerned Scientists (Gordon-Rogers, 2025), and worries from the Harvard School of Public Health about the spread of fake news on science and health matters (Roeder, 2025). In a similar fashion, Amnesty International also expressed criticism over Meta new policies, by reminding that previous lack of content moderation on Facebook contributed to ethnic violence in countries such as Myanmar and Ethiopia (Chow, 2025), while a report from the advocacy group Avaaz has shown the role played by relevant Facebook pages on fueling the misinformation that led to the riots on the US Capitol in 2021 (Bergengruen and Perrigo, 2021).

Meta has justified its decision as a way to allow more speech on their platforms and provide a more personalized experience to political content, by moving to community notes and offering users more options to select the amount of political content they want to see on their feed (Kaplan, 2025). According to the company, excessive content moderation risks infringing on

free speech, especially in politically sensitive contexts, highlighting how striking a balance between moderation and democratic discourse is complex. Despite the concern raised by such choice among several advocacy groups, there have also been some who reacted positively to Meta recent changes to its content moderation policy, such as the Foundation for Individual Rights and Expression, which has praised Meta's decision as a favorable change to improve the state of free expression on social media (Weiss, 2025). Moreover, the high number of posts that get published every day on Meta social media platforms makes it difficult for the company to monitor and eliminate all misinformation in real time. The practicality of such operation is therefore difficult to ensure given its scale.

Other controversies faced by Meta include repeated accusations of mishandling users' data, which resulted in multiple fines for the company, issued especially by EU regulatory bodies. In 2023, the European Data Protection Board fined Facebook €1.2 billion for the transfer of EU user data to the US, which violated the GDPR, followed a year later by the Irish Data Protection Commission, that issued a fine of €251 million for the data breach of 29 million of Facebook users (Reuters, 2024). Following these events, Meta has reacted to regulatory interventions by making public commitments to updating privacy policies and aligning with evolving regulatory frameworks. Such efforts have included investments of more than \$8 billion in programs to enhance privacy, to hire new personnel specialized in privacy matters, to develop better risk prevention, incident management and third-party oversight (Meta, 2025c). In this way, Meta hopes to create and promote a culture of privacy (Protti, 2025). More recently, the use of Meta users' data for the training of its AI raised concerns, eliciting backlash from advocacy groups (Chee, 2025). However, the intention of Meta to offer a more innovative and personalized experience through the enhancements to its apps allowed by AI has also been met by positive feedback by other associations, which see it as a way to improve the experience of users on social media platforms (USAI, 2025).

Serious concerns surrounding the energy consumption of its data centers have also hit Meta. Recently, authorities in Louisiana have questioned the environmental impact of the new AI data center of Meta on the area (Calma, 2025). In Spain, the plan of the firm to build a big data center has alarmed the local communities over concerns on water shortages that this project could cause (Marr and Boyce, 2025). Huge investments by Meta on AI technology position the company to growing pressure related to environmental worries, as estimates from Goldman Sachs (2024) show that AI usage will drive data center power demand up to 160% by 2030. On the other hand, it must be noted that the amount of screen time spent by the average person is

on the rise and mainly driven by social media activity (Sweeney, 2025), so that it could be argued that increases in the investments of data centers are a mere response to a higher demand for Meta services. In light of these challenges, it is therefore increasingly important to examine how Meta responds to its various stakeholders' demands and keeps fostering co-creation of social value with its ecosystem members.

PayPal

PayPal Holdings is a digital company facilitating seamless and secure online transactions. With over 400 million active consumer and merchant accounts in more than 200 markets, the firm offers a range of different digital payment solutions, which, according to the company, make transferring money, conducting sales, and shopping simple, safe and personalized (PayPal, 2025a; PayPal, 2025b). Its ecosystem includes merchants, private users, technology partners and financial institutions, which all rely on PayPal's API, payment rails, and fraud protection infrastructure.

In 2024, the company registered \$31.8 billion in revenue, of which around 90% is due to the fees that it charges to customers and businesses to complete transactions (PayPal, 2025c). In 2023, 25 billion payments were processed through PayPal and tens of millions of transactions took place on the platform everyday (PayPal, 2025d). This is possible thanks to its base of users, which is the biggest in the world. Like most platform businesses, PayPal therefore also depends on external actors to create economic and social value, facing the challenge of coordinating such a big network of loosely coupled members.

In a similar fashion to Meta, concerns over the environmental sustainability of its data centers also touched PayPal. As reported by the IMF, crypto mining and data centers currently account for almost 1% of global emissions and their footprint is only expected to grow (Hebous and Vernon-Lin, 2024). This is especially relevant for PayPal, as the firm is making significant efforts to support the usage of crypto in its circuit (Stein Smith, 2024), resulting in an increase of the impact of crypto-related emissions on its overall carbon footprint (Michel, 2024). However, as in the case of Meta, it must be acknowledged that the integration of crypto offerings is largely in response to evolving consumer and market demand (Macheel, 2025). Thus, disabling such features might marginalize users seeking financial inclusion through decentralized currencies (Wang, 2024).

In the last few years, PayPal has also been under criticism for excluding Palestinians in the West Bank and Gaza from using its services, despite offering them to Israelis, including those with

settlements in the West Bank. This choice has been deemed discriminatory by members of the US Congress and NGOs (McGreal, 2023), which called out the company for non-adherence to international law practices. This issue is especially relevant as it strikes at the heart of one of PayPal's publicly stated core values, that is the one of financial inclusion (PayPal, 2025e). Other controversies comprise the increasing number of frauds targeted towards PayPal users, cyber security failures and changes in data sharing policies. These issues altogether have raised worries over privacy protection of PayPal users and their personal data by policy makers, NGOs and consumers, as well as concerns over opaque policies from the company on these matters (Moise, 2024; Stempel, 2025; Winder, 2025). At the same time, PayPal in these last years has made efforts to proactively mitigate this issue, by advancing fraud detection systems and two-factor authentication, by creating rapid-response cybersecurity teams, and by investing in user education efforts aimed at raising awareness of fraud, phishing, and scam prevention (PayPal, 2025f). This has shown the firm's ongoing commitment to user safety.

Zalando

Zalando SE is a German e-commerce platform specializing in fashion and lifestyle products. Active in 25 markets all over Europe, Zalando serves a base of 51 million active final customers, by connecting them with a network of more than 6000 partners (Zalando, 2025a). The firm defines itself as a meeting point for brands and retailers to connect with millions of consumers, enabling a wide-ranging ecosystem collaboration that includes a vast net of logistics partners (Zalando, 2025b). Beyond simple retail, Zalando's strength lies in its ability to take care of warehousing, delivery, returns, and digital marketing for a large network of partnered brands.

In 2024, the company registered 251 million orders and concluded the year with a revenue of €10.6 billion, which it generates by combining a wholesale retail model, where Zalando buys items at wholesale prices and resells them at retail prices, keeping the difference as profit, with a partner program, in which Zalando earns commissions on sales made through its platform. Additionally, Zalando offers value-added services, which generate further income by providing logistics, warehousing, and targeted advertising to partner brands. These services help partners optimize their reach and performance within Zalando's ecosystem, while reinforcing Zalando's central role as digital infrastructure provider. Its ecosystem's profitability is thus closely tied to its ability to attract and retain partners, expand customer engagement, and grow service-based revenue streams that complement sales.

Being active in the fashion industry, Zalando has faced scrutiny over its marketing practices, that have been accused of encouraging overconsumption and fostering waste, especially considering that half of orders are returned and not all items are resold, ending up in landfills or to incineration plants (Symons, 2023). However, Zalando flexible return policy can also be seen as a consumer-centric feature, that has the goal to empower customers and allow them to find more suitable products, reducing dissatisfaction and waste in the long term. Moreover, the company has shown in the last years an active commitment to address such issue, for example by shortening the return window for customers, by optimizing products' presentation on its website and by introducing a technological size advisor (Zalando, 2025d). Sustainability claims from the firm have also been challenged. Notably, the European Commission flagged potential greenwashing in Zalando's sustainability labels, prompting the firm to remove misleading product flags after it was found to use sustainability icons on its website to promote products as environmentally friendly without sufficient evidence (European Commission, 2024).

Like other competitors in the e-commerce business, also Zalando has been questioned over the working conditions in its warehouses, which has led to several tensions with German trade unions over the years. In 2014, an undercover report brought under light the difficult labor conditions of Zalando warehouse workers, who were subject to high performance pressure, excessive monitoring and lack of rest (Toussaint, 2014). Years later, the firm was again under public scrutiny after it was accused of using a performance management system in which employees were ranked based on peer reviews, fostering a competitive and stressful work culture (Faragher, 2019). Introducing technological tools to track operational activities, on the other hand, can also be seen as a simple attempt by Zalando to manage large-scale logistics operations that inevitably require performance monitoring to maintain efficiency and safety across massive supply chains, with the goal of achieving higher levels of optimization. As a matter of fact, this is one of the areas in which Zalando focuses its efforts the most (Zalando, 2025e). More recently, trade unions have again opposed the company over its denial of including employees in the collective agreement, which would guarantee them a higher wage, resulting in repeated strikes (Ersen, 2024). Given these challenges, it becomes crucial to understand how Zalando navigates and manages the diverse pressures from its stakeholders as part of its broader sustainability approach and efforts to maintain legitimacy within its ecosystem.

Spotify

Spotify is a digital content platform offering on-demand streaming for music, podcasts, and audio content. Launched in 2008 in Sweden, Spotify changed the way music is consumed, by shifting consumer habits from owning music to accessing it through streaming. Its declared mission is to allow millions of creatives to live off their art and to offer audiences around the world the chance to discover and enjoy such art (Spotify, 2025a). Through its platform, Spotify enables creators to monetize, advertisers to target, and users to consume millions of hours of content daily.

Recording a revenue of €15.67 billion in the last year, Spotify is today the most popular audio streaming subscription service in the world and counts over 100 million songs, almost 7 million podcasts, and around 350,000 audiobooks for its users to enjoy. Over the years, it has created an ecosystem of artists, podcasters, advertisers, business partners, third-party app developers, and 678 million monthly users, whose 268 million are premium subscribers (Spotify, 2025a), distributed in 184 markets. Its revenue is mainly generated through a premium subscription program, which allows users to access Spotify library ad-free. Such premium service accounts for 87% of all its revenue, while the rest is given by advertising (Spotify, 2025b). It is interesting to note that Spotify achieved its first full year of profitability only in 2024 (Weatherbed, 2025), as the high costs of licensing music and content acquisition made it challenging for the firm to achieve such goal sooner.

Like other digital companies, one of Spotify's main challenges is to respond to concerns about the impact of its data centers on the environment. Data shows that people stream more music each year, with total streams nearing 5 trillion worldwide in 2024 (Tencer, 2025). The energy consumption required to satisfy such demand is leading to an inevitable increase in carbon emissions. For example, a 2019 research found that streaming music today causes more greenhouse gas emissions compared to music consumption in the 2000s (Blistein, 2019; Fleming, 2019), highlighting the hidden environmental costs behind music streaming. More recently, another interesting report has showed that Spotify streams of the American pop singer Taylor Swift alone produce an amount of carbon emissions equivalent to over 20,100 US households in a year (Wilkes, 2025). Nevertheless, this does not take away from the fact that, although streaming has an environmental cost, it represents a valid alternative to more environmentally damaging forms of music consumption like the manufacturing, packaging, and shipping of CDs and vinyl, which also has substantial carbon footprints. Rather, the issue is more complex and increasingly tied to the scale of streaming consumption. As already mentioned, while streaming allows for reduced material waste, its growing popularity has led

to an ever-increasing demand for data storage and transmission, requiring large-scale server infrastructure that consumes significant energy. In this light, the core problem may lie less in the format itself and more in patterns of overconsumption. As the volume of streaming continues to grow year by year, the cumulative energy required to support this behavior is also escalating accordingly, putting additional strain on digital infrastructures. This suggests that tackling the environmental footprint of streaming should go beyond technological efficiency improvements and consider the behavior of consumers as well. Educating users about the hidden environmental costs of their listening habits could therefore play a crucial role in solving this issue.

Another controversy that has put Spotify under the spotlight over the years is the issue of fair remuneration to the artists sharing their music on the platform. This problem first received worldwide attention after artists Thom Yorke and Taylor Swift decided to withdraw their music from the app to protest artists only getting between \$0.006 and \$0.0084 per song play (BBC News, 2013; Ellis-Petersen, 2014). In response to such accusations, Spotify underlined that it pays rights holders and not artists directly and has therefore no control over the individual contractual terms that artists have with their labels. However, doubts over how the business model of Spotify reinforces the already weak financial position of many musicians stayed. In 2024, Spotify revealed to have paid \$10 billion in royalties to artists (Alpert, 2025; Arunasalam, 2025), which represents the largest payout ever made to the music industry in a single year. Nevertheless, the news was met with a lot of criticism coming from industry associations, that pointed out how such claims underplay the extremely low amount of money that artists, and especially songwriters, receive from Spotify, and the questionable practices operated by the company to reduce royalty payments (Carman, 2024; National Music Publishers' Association, 2025; United Musicians and Allied Workers, 2025).

This debate is, however, quite nuanced. While it is undeniable that Spotify contributes to exacerbating the precarious financial position of many artists, the root of the problem arguably lies in the structure of contracts that artists sign with their record labels. These agreements are often heavily weighted in favor of record labels and are still structured in a way that does not account for the differences in revenue that the rise of streaming has created. In the streaming era, the revenue split has remained largely unchanged. This also explains why it is mainly artists and sector associations, and not record labels, that publicly challenge Spotify's model, as record labels have little incentive to change such system. As the revenue distribution system was never updated to reflect the realities of digital music consumption, it can be argued that Spotify, while

being an enabler of this unfair model, it is not fully responsible for it, though its acquired market power and central role in the music industry give it significant potential to influence and possibly reform these dynamics (Pohl, 2025; Peirson-Hagger, 2025).

After adding podcasts to its library, Spotify started to also receive backlash over its lack of a strong content moderation policy. In 2022, hundreds between doctors and scientists published an open letter to Spotify accusing the company to allow mass misinformation about Covid-19 vaccines on its platform, after its most popular podcaster, Joe Rogan, was found to repeatedly spread fake news and make anti-vaccine claims (Yang, 2022). Criticism over lack of control on content raised again recently, when 200 fake podcasts were found on Spotify to publicize the sale of opioids without medical prescription, causing public authorities to call out the platform (Dorman, 2025).

With the recent rise of AI, industry associations and researchers have also raised concerns over algorithmic bias, which can enforce discrimination against disadvantaged groups in society. As a matter of fact, research has shown how Spotify algorithms reproduce gender inequalities, favoring male artists over female ones (Monroy Iglesias, 2018). More recently, the decision of Spotify to patent speech recognition technology to suggest songs based on the emotional state of listeners (Savage, 2021) has also provoked the disapproval of digital civil rights associations (Access Now, 2023), putting again into question how the platform uses its users' data.

Having defined the sample and highlighted some of the key challenges faced by the selected firms, it is important to describe the methodological approach used to interpret this material, which is introduced in the next subchapter.

3.3 Data Analysis

The comparative case study will be conducted through thematic analysis. Thematic analysis is a method in qualitative research, widely used to uncover and interpret patterns or themes within textual data. This method facilitates a structured and systematic approach to identifying underlying meanings across large volumes of qualitative material. Through the organization, analysis, and description of recurring themes, thematic analysis provides both depth and clarity, making it especially useful when examining complex issues, such as sustainability communication within corporate reports (Nowell et al., 2017).

At its core, thematic analysis involves identifying patterns across a dataset and interpreting these for their conceptual and contextual significance. Naeem et al. (2023) describe this as a process that enhances the research's analytical depth while remaining adaptable to the unique

demands of each study. Unlike hypothesis-driven methods, thematic analysis aligns with an inductive approach, where themes and insights emerge organically from the data itself, which makes it especially suitable for exploratory work, where the aim is to generate theory rather than test it.

A key strength of thematic analysis lies in its flexibility (Braun and Clarke, 2006). It can be adapted to different types of research questions and data formats, while still ensuring that findings are richly detailed and analytically rigorous. According to Nowell et al. (2017), thematic analysis also serves to illuminate varied perspectives, draw attention to both shared and divergent experiences, and reveal insights that may not have been anticipated at the beginning of the study.

To ensure its trustworthiness, the process must be conducted in a transparent manner. This includes clearly documenting all stages of analysis so that others can assess the coherence, and validity of the findings. Trustworthiness in this context is evaluated through criteria such as credibility, transferability, dependability, and confirmability (Nowell et al., 2017). A study is credible when it captures and represents the intended messages and values expressed within the analyzed documents. It can be considered transferable when the findings can be applied to other analysis, and dependable when the research process is coherent, logical, and well-documented. By demonstrating that the themes identified are firmly grounded in the data and not simply the product of the researcher's own bias and views, the confirmability of the study can be proved.

Thematic analysis also allows for meaningful inferences about the organizations that created the reports, the content itself, and its intended audience, that is its stakeholders (Tate and al., 2010). In the context of sustainability reports, this means that it is possible to examine not only what organizations state, but also how these communications reflect their identity and their mission, as well as they are intended to shape stakeholder perceptions.

Thematic analysis therefore offers a robust, flexible, and transparent approach for examining qualitative data, making it particularly suitable for analyzing corporate sustainability reports. It supports the discovery of both explicit and implicit themes, encourages analytical rigor, and makes it possible to draw meaningful insights into how companies communicate their values, address stakeholder expectations, and construct legitimacy through sustainability discourse.

This study will follow a six-phased approach, as explained in Nowell et al. (2017). The first step involves familiarizing with the data, by delving into the content of the reports with the goal of identifying themes preliminarily (Naeem et al., 2023). Braun and Clarke (2006) recommend

researchers at this stage to get immersed in the data. This requires engaging deeply with the data through multiple readings, approaching the text actively with the goal of uncovering recurring patterns and significant insights. Afterwards, initial codes are extracted. Coding implies selecting significant excerpts from the data and labeling them with words or short sentences that reflect relevant themes or issues. This requires careful consideration of the data and to decide on which characteristics to focus and how to simplify them. That means that an effective code is one that seizes the richness of the phenomenon and spots core elements associated to the research question (Boyatzis, 1998). Coding is then an integral part of the analytical process, as it is the responsibility of the researcher to organize data in a meaningful way (Braun and Clarke, 2006).

At this point, codes will be organized in groups whose role is to provide identity and meaning to elements that keep recurring in the data. This leads to the formation of themes, relevant concepts emerging from the data which connect the latter to the research question. The goal of finding themes is to capture the patterns and relationships between codes and group them in meaningful clusters. In simpler terms, codes at this stage get analyzed and grouped into broader themes that capture the essence of the data. As Braun and Clarke (2006) report, a theme is supposed to reflect a significant aspect of the data in relation to the research question and to indicate a recurring pattern of meanings within the dataset. It is important to also note that the significance of a theme does not rely on how often it appears within the dataset, but on its ability to reveal insights that are crucial for addressing the overarching research question. Moreover, themes are expected to emerge both at a surface and a deeper level. In this sense, Braun and Clarke (2006) distinguish between themes at a semantic or latent level. At the semantic level, only the surface meaning of the data is considered, whereas an analysis at the latent level implies identifying the underlining ideas that condition the semantic content. This means that the analysis of data should go from their mere description to their interpretation. In the context of this research, themes will be created through inductive analysis, which allows to process the data openly, without trying to fit it into a pre-existing framework or aligning it with prior assumptions. An inductive approach involves deriving themes directly from the data, ensuring that the patterns and interpretations emerge organically rather than being shaped by pre-existing theories or frameworks (Patton, 1994). This approach is especially indicated for this research that has an exploratory scope.

Subsequently, codes need to get revised. At this stage, coded data associated with each theme are revised to assess if they form a coherent and meaningful pattern. The validity of individual

themes is evaluated to ensure that they accurately capture the meanings present in the data in a comprehensive way. Some themes at this point may be merged or discarded if they are found to be overlapping, while new codes can be introduced if relevant data are identified that were not captured by existing labels. Once the process of codes' revision is completed, themes get defined and named in a way that intends to seize their essence. The goal in this phase is to uncover the underlying significance of the selected data, that is why they matter and what they reveal about the research question. This requires critically examining the meaning behind each theme and exploring how individual themes interact or contrast with one another to build a coherent interpretation of the dataset (Braun and Clarke, 2006). Finally, the last step involves producing an analysis that presents a clear and well-structured narrative, whose goal is to capture the core meaning of the data both within individual themes and across the themes as a whole. Here, the analysis must lead to conclusions that address the research question and the overall objective of the study (Castleberry and Nolen, 2018).

In practice, the thematic analysis for this study will be conducted manually using a systematic process. Manual coding involves closely reading and annotating the sustainability reports by hand to organize and manage the data. This process begins with marking the documents, highlighting relevant excerpts, and assigning codes that capture the meaning of those excerpts. In the first phase of the coding process, text from the reports is copied and pasted on an Excel table and the relevant codes are extracted and reported on an adjacent column. Particular attention is given to recurring language and elements that relate to the central research question. For instance, terms like “carbon neutrality,” “data privacy,” “labor standards,” or “stakeholder engagement” may be coded, as all these issues are usually common among digital businesses. At this point, codes are organized in groups in which all the elements share an identity and a recurring pattern, from which themes can start to be identified. At a broader level, themes like “building communities”, “making an impact”, “responsible business practices” and “climate action” may emerge. Particularly, because digital firms build their value proposition through technological infrastructure, themes that connect sustainability with technological progress may be found. Moreover, themes that enhance the process of value co-creation may also come to surface, as ecosystem collaboration represents a defining feature of these businesses.

To maintain analytical rigor, each phase of coding will be documented through detailed memos to help track the decisions made during the analysis. For example, when a new theme is developed or an existing one is merged or removed, a memo will record the rationale for the change, supported by examples from the data, to ensure transparency and dependability of the

findings. Moreover, to enhance credibility and confirmability, data excerpts will be consistently linked back to the codes and themes they support. Selected quotes from the sustainability reports will be used to illustrate each theme in the final write-up, ensuring that interpretations are grounded in the material.

4. Findings

Meta

Meta's report provides an overview of the firm's vision, business activities, and commitment to responsible innovation in the year 2023. As a leading global technology company, Meta develops platforms and products that help people connect, build communities, grow businesses, and emerging technologies such as virtual reality. With operations spanning more than 90 cities and 21 data centers worldwide, Meta positions itself at the forefront of advancing AI, building the metaverse, and creating long-term value for people, businesses, and societies. As stated, the report shows how the firm realizes its long-term vision "to build general intelligence, open source it responsibly and make it widely available so everyone can benefit". (Meta, 2024, p.4).

The report revolves around seven different themes: Responsible Governance, Human & Civil Rights, Environmental Sustainability & Climate Action, AI & Privacy, Content Moderation & Online Safety, Workforce, DEI & Employee Development and Supply Chain & Responsible Sourcing. Meta wants to unlock potential for positive impact through its services, allowing people to connect worldwide, enabling them to share ideas, support one another, and drive meaningful change. Meta emphasizes the importance of conducting business in a responsible, ethical, and transparent way to earn and maintain the trust of stakeholders globally. This implies that the company should create, design and improve its products with safety, inclusivity, and user well-being in mind.

Responsible Governance

Meta positions governance as the foundation of legitimacy, emphasizing ethical conduct, transparency, and accountability as prerequisites for stakeholder trust. Its Board of Directors and Audit & Risk Oversight Committee monitor ESG-related risks, like cybersecurity, regulatory exposure, and ethical compliance, supported by a dedicated team that facilitates sustainability oversight. This layered structure illustrates how Meta seeks to gain legitimacy by ensuring stakeholders that its decision-making processes align with formalized accountability systems.

- Compliance, Ethics & Integrity

Meta describes compliance and ethics as mission-critical, embedding them across managerial practices and employee behavior. The company's universal Code of Conduct sets expectations

on integrity, anti-corruption, and responsible decision-making. Internal mechanisms like the Compliance and Ethics Hub, a third-party Speak Up hotline, and annual training programs put these values into practice. These initiatives reveal how Meta translates normative expectations into routinized governance practices to show internal discipline and responsiveness to external scrutiny.

- **Transparency & Accountability**

Transparency is emphasized through the publication of government data request reports and the public disclosure of Meta's tax policy, reflecting attempts to preempt regulatory criticism and project openness. The firm's engagement in policy dialogues and participation in trade associations further illustrate its intent to shape, rather than merely follow, the formation of norms in the digital space. However, the company's political involvement through MetaPAC, a political action committee that supports candidates across the political spectrum based on alignment with business interests, may signal a tension between the pursuit of influence and the aspiration to appear neutral and accountable.

Human Rights & Civil Rights

Meta positions the protection of human and civil rights as central to sustaining legitimacy and user trust in its global operations. The company articulates its responsibility not only to uphold international norms but also to embed rights-based principles into the design and governance of its technologies. By linking rights protection to its corporate mission, Meta frames them as both an ethical and strategic foundation for responsible digital governance.

- **Human Rights**

Aligned with the UN Guiding Principles on Business and Human Rights, the firm's Corporate Human Rights Policy guides operations, products, and value chains. Annual Human Rights Reports and collaborations with organizations like Business for Social Responsibility identify priority areas, including freedom of expression, privacy, equality, child protection, and health, informing product development and impact assessments in sensitive contexts. Evaluations like the one of Meta's role in Israel and Palestine (Meta, 2025d) reveal an effort to address the complex social risks that accompany the global reach of its platforms. Meta's integration of human rights into its governance architecture seems to signal an attempt to move from the reactive crisis management approach that has characterized the firm in the past, toward a more anticipatory, systemic one. It positions therefore the company as a shaper of digital rights

governance, responding to growing expectations for accountability in how its technologies mediate public discourse and individual freedoms.

- **Civil Rights**

In a similar way, civil rights commitments are incorporated into training, policy enforcement, and product design. This includes shaping policies and enforcement processes, collaborating with law enforcement on safety issues, while guarding against misuse of Meta technologies and supporting product teams with frameworks that promote fairness and inclusion. Meta attempts to also apply civil rights principles in developing AI and emerging technologies and encourage civic engagement by helping people access reliable information. These initiatives demonstrate Meta's efforts to align its technological and algorithmic systems with principles of social justice, positioning civil rights as both an ethical framework and a risk management tool. However, they also expose the ongoing challenge of balancing open expression with the prevention of misuse, which continues to test Meta's governance integrity.

Environmental Sustainability & Climate Action

Environmental sustainability is a central element of Meta's operational strategy.

- **Sustainability in Data Centers**

The firm's data centers, its most resource-intensive assets, are central to its environmental strategy. Meta's approach integrates principles of energy efficiency, renewable sourcing, and circularity to mitigate the ecological footprint of its expanding digital infrastructure. New-generation data centers are designed with advanced dry-cooling systems to minimize water use and are increasingly optimized for AI workloads, reflecting an awareness of the emerging environmental pressures linked to automated technologies. Across all operations, Meta has matched 100% of its electricity use with renewable energy through wind and solar projects, which makes it the company with the largest renewable energy portfolio in the US.

- **Water Usage**

Water management is another stated priority. The company has committed to becoming water positive by 2030, returning more water to the environment than it consumes through its operations. Such goal illustrates a move from mitigation to regeneration. Restoration projects, such as reforestation and watershed rehabilitation in operational regions, extend Meta's environmental influence beyond its direct footprint.

AI & Privacy

AI and privacy matters are considered two aspects that are at the heart of Meta's products and processes.

- **Responsible AI**

Artificial intelligence has become more and more central to Meta's products and services. AI supports personalization, content moderation, and the detection of misinformation. However, recognizing AI's risks, Meta emphasizes responsible development, risk assessment at all stages, strong safeguards, and tools to guide developers.

- **Privacy & Cybersecurity**

User privacy and data security are central to design. Tools include customizable privacy settings, end-to-end encryption, two-factor authentication, and secure data storage. These measures integrate ethical, legal, and technological safeguards and sustain ecosystem participation by ensuring that diverse stakeholders remain engaged, compliant, and confident in the platform's governance.

Content Moderation & Online Safety

Creating a safe community has been one of the top priorities at Meta. The company provides therefore resources through its Safety Center to help users navigate issues like mental health, child safety, harassment, and risks affecting particularly vulnerable groups, including women, LGBTQ+ users, and minors (Meta, 2025e).

- **Content Governance**

Meta's Community Standards define acceptable behavior and content, covering issues from violence and harassment to privacy violations (Meta, 2025f). Enforcement relies on AI-driven monitoring and human oversight, complemented by an independent Oversight Board, a group of experts and civic leaders that reviews high-impact cases. These practices demonstrate how Meta operationalizes content governance as a strategic tool to maintain legitimacy, ensuring both compliance and trust across its user and regulatory ecosystem.

- **Misinformation Management**

Meta has moved from a model based on third-party fact-checking to a community-driven one with the introduction of Community Notes, a feature on Facebook, Instagram, and Threads that lets users add context to posts that might be misleading or unclear. Starting in the US, the notes

are now created and rated by users, giving people additional information to help them decide what to trust or share (Meta, 2025g). This participatory approach illustrates how Meta is trying to leverage user engagement to co-create informational integrity, balancing the mitigation of harmful content with empowerment of its ecosystem participants.

- **Community Wellbeing**

Meta integrates technological, social, and policy mechanisms to enhance user safety. Tools include content filters, parental controls, AI interventions to flag harmful behavior, break reminders, and advertising restrictions for teens. Such initiatives highlight how Meta integrates technological, social, and policy mechanisms to sustain ecosystem participation, ensuring that platform safety, user trust, and ethical responsibility are mutually reinforced.

Workforce, DEI & Employee Development

Meta emphasizes that achieving its mission requires an inclusive, innovative culture where employees have fair opportunities to grow and contribute meaningfully to both the company and its user communities.

- **People's Engagement & Development**

Meta gathers employee feedback through surveys, pulse checks, and Q&A sessions to shape culture and career growth. Talent programs, such as Meta University internships and rotational initiatives, provide hands-on experience and technical training, while ongoing feedback and competitive benefits support retention.

- **Diversity, Equity & Inclusion**

By building a workforce that reflects the diversity of the communities that Meta serves, the firm believes that it can innovate faster and solve problems better. Growth and belonging are supported through mentorship programs and employee groups that connect people across interests, backgrounds, and skills. Inclusion is also a value that shapes Meta technologies. The firm collaborates with diverse communities through its Equity Co-Design Lab, and Inclusive Product Councils helps review and shapes new programs to ensure they work for everyone.

Supply Chain & Responsible Sourcing

Meta's Responsible Supply Chain program spans hardware production, technology sourcing, and consulting, requiring all suppliers to comply with clear standards, which are reported in statements such as the Responsible Business Alliance Code of Conduct, the Anti-Slavery

Statement, and the Responsible Minerals Policy. This approach highlights how Meta extends its governance and sustainability practices beyond internal operations, using its supply chain to reinforce ethical standards, reduce reputational risk, and sustain the trust of stakeholders within its global ecosystem.

In sum, Meta’s governance systems, human rights commitments, and transparency initiatives serve as mechanisms to demonstrate accountability and maintain stakeholder trust. Overall, its initiatives seem to show a shift from reactive compliance toward more proactive ecosystem stewardship. Nevertheless, tensions remain between these aspirations and its business model, which continues to heavily depend on engagement maximization and targeted advertising. To summarize the identified key themes and core practices of Meta, table 2 was created by the author.

Table 2. Summary of Meta’s Key Findings.

Themes	Core Practices
Responsible Governance	• Strong ESG governance architecture. • Transparency reports. • Ethics training. • Political engagement via MetaPAC.
Human & Civil Rights	• Human Rights Policy aligned with UNGPs. • Collaboration with independent organizations for human rights protection. • Civil and human rights integrated in AI and product design (Meta, 2025d).
Environmental Sustainability & Climate Action	• Net zero operations since 2020. • 100% renewable electricity. • Water-positive goal by 2030.
AI & Privacy	• Responsible AI framework. • Open-source development. • Huge investments in privacy. • End-to-end encryption.
Content Moderation & Online Safety	• AI-based moderation (Meta, 2025f).

	• Oversight Board. • Community Notes (Meta, 2025g). • Tools for mental health and youth protection. • Advertising restrictions.
Workforce, DEI & Development	• Employee feedback systems. • Inclusion programs. • Mentorship and rotational training.
Supply Chain & Responsible Sourcing	• Supplier audits. • Clear standards exemplified by statements on responsible sourcing, slavery and responsible business (Meta, 2024).

Source: created by the author.

PayPal

PayPal’s sustainability report (PayPal, 2025g) presents a multi-faceted view of its progress and efforts, in regard to what the company defines as its global impact, in the year 2024. As stated by the firm, “at the heart of our 2024 Global Impact Report is a deep commitment to the communities we serve” (PayPal, 2025g, p. 5). The report is organized around four different focus areas, such as Employees, Workplace Culture & Organizational Practices, Social Impact & Community Engagement, Responsible Business Practices & Governance and Environmental Sustainability.

PayPal articulates a mission to revolutionize commerce globally, emphasizing secure, simple, and personalized digital payments that are accessible across several channels. Its offerings are designed to simplify commerce experiences and support the financial management needs of users. The firm operates as a two-sided platform serving millions of consumers and merchants worldwide. Sustainability priorities are framed as opportunities, positioning them as integral to long-term stakeholder value creation.

Workplace Culture & Organizational Practices

Employees are positioned as central to PayPal's mission. As recognized by the firm, "at PayPal, empowering employee growth isn't just a priority — it's essential to our success. We aspire to provide employees with the support, tools, and experiences they need to develop and grow their PayPal careers" (PayPal, 2025g, p.8). In comparison to Meta's governance-heavy and technology-driven model, PayPal's approach is more internally focused, positioning workforce engagement and inclusion as key levers of legitimacy and innovation.

- Inclusion, Belonging, & Diversity

PayPal's diversity strategy centers on integrating the notion of belonging into organizational structures. Eight global Employee Resource Groups (ERGs) operate under a unified "Synergy" structure, which fosters cross-cultural dialogue and leadership opportunities, particularly for underrepresented groups in technology. This approach operationalizes inclusion as a collective process of network-building and mutual support, aligning internal diversity with the company's global customer base.

- Employee Engagement & Listening

Engagement efforts included introducing short surveys and increasing their frequency. This allows the company to get insights into employees' sentiment to support community-building and monitor their responses to organizational changes. These allow a two-way communication system and function as tools of internal accountability.

- Wellness, Benefits, & Pay Equity

PayPal presents a holistic wellness framework encompassing physical, financial, and emotional well-being. Initiatives of virtual therapy, crisis relief funds, sabbatical programs and flexible parental leave are proof of the effort to treat employee welfare as part of long-term corporate responsibility.

Social Impact & Community Engagement

PayPal's social impact strategy aligns with its business model, emphasizing financial inclusion and community resilience as pathways to universal participation in the digital economy. Unlike Meta, which focuses on governance and transparency to shape digital ecosystems, PayPal's approach is centered on access, empowerment, and partnership-driven capacity building.

- Support for Small Businesses & Entrepreneurs

Small- and medium-sized businesses are recognized as critical economic contributors. In 2024, PayPal enabled approximately \$3 billion in loans and cash advances, while collaborating with community development financial institutions to extend financing opportunities beyond its internal programs. This model highlights that resilience is built by PayPal through partnerships combining the financial infrastructure offered by the firm with community trust networks.

- **Women & Next Generation Entrepreneurship**

Through collaborations, like the Cherie Blair Foundation for Women, the firm mentors women entrepreneurs in developing regions to help scale micro and small businesses. Additionally, youth-focused programs mobilize employees as mentors for young students, nurturing early-stage entrepreneurial skills and promoting intergenerational innovation.

- **Nonprofits & Crisis Response**

The company leverages its infrastructure to facilitate nonprofit fundraising and rapid disaster response, which include partnerships with Volunteer Florida and the American Red Cross. Fee waivers and direct contributions support urgent relief, reflecting a transactional yet impactful form of engagement. While these initiatives enhance PayPal's social legitimacy, they remain primarily focused on financial enablement rather than systemic, long-term change.

Responsible Business Practices & Governance

- **Ethics & Transparency**

PayPal fosters a Speak Up culture through open reporting channels, anti-corruption training, and public disclosures of political activity. Participation in the United Nations Global Compact and the publication of the Joint U.K. and Australia Modern Slavery Statement show alignment to international standards to reinforce legitimacy. Yet, limited transparency around lobbying and advocacy activities reveals a selective application of its openness principle.

- **Risk Management & Resilience**

Through its Enterprise Risk Management and Resiliency Program, the company systematically identifies, evaluates, and mitigates risks to ensure operational continuity. This approach shows a sustainability model rooted in ensuring system reliability rather than ecosystem influence, a contrast to Meta's external governance emphasis.

- **Responsible Supply Chain**

Given PayPal's digital business model, its supply chain mainly involves technology, consulting, and office services. Suppliers are expected to adhere to PayPal's Third-Party Code of Conduct & Ethics, addressing labor, human rights, and environmental standards. However, the limited scale of this network constrains PayPal's ability to exert broad transformative impact.

- **Data Governance & Cybersecurity**

Data management follows privacy-by-design and transparency principles, with AI systems supporting fraud detection, standardization, and quality assurance. Cybersecurity tools like Fraud Protection Advanced and Dispute Automation enhance resilience and customer trust, positioning privacy protection as both a regulatory requirement and a strategic asset.

Environmental Sustainability

Environmental sustainability is framed as essential to business resilience. The main priorities are to reduce greenhouse gas (GHG) emissions, use low-carbon energy, and manage natural resources efficiently throughout its operations.

- **Operational Emissions**

PayPal has a goal of reaching net-zero GHG emissions by 2040. It offsets all the energy used in its data centers through renewable generation. Yet, influence over indirect emissions remains limited: in 2024, only 46% of suppliers aligned with PayPal's GHG reduction targets. This gap reveals the constraints of sustainability strategies built around voluntary supplier engagement rather than enforceable standards.

- **Natural Resource Management**

Given its digital business model, PayPal's environmental footprint is modest. Efforts focus on water efficiency in offices, recycling programs, and responsible IT hardware disposal. It seems that these actions reflect a contained approach that does not aim at transforming ecological impact.

To sum up, PayPal's sustainability approach reflects a program rooted in operational efficiency, community empowerment, and organizational resilience. In particular, it emphasizes internal culture, stakeholder trust, and inclusive financial access. Its initiatives center on empowering employees and entrepreneurs and ensuring business continuity, but its impact on systemic issues, such as supplier emissions, seems to remain limited. Table 3, created by the author summarizes the key themes and core practices found in PayPal's report.

Table 3. Summary of PayPal’s Key Findings.

Themes	Core Practices
Workplace Culture & Organizational Practices	• Employee Resource Groups. • Programs for talent development. • Employees’ surveys. • Wellness programs of different kinds.
Social Impact & Community Engagement	• Support for SMEs. • Partnerships for supporting women and youth entrepreneurship. • Nonprofit and crisis response. • Partnerships with NGOs
Responsible Business Practices & Governance	• Programs of risk management and resilience. • Responsible supply chain practices. • Cybersecurity and fraud-prevention programs.
Environmental Sustainability	• GHG reduction and net-zero target. • Renewable energy offsets. • Water efficiency programs. • Employee-led initiatives (PayPal, 2025g).

Source: created by the author.

Zalando

In its report, Zalando recognizes the current scrutiny that the fashion industry is facing for its environmental footprint and social impact. For the company, this represents both a challenge and a responsibility. Its goal is therefore not only to lessen its impact, but also to play a leading role in shaping a more sustainable and inclusive future for the industry (Zalando, 2025f). As stated by the firm, “we are ready to step up and embrace our role as an enabler - acting as a catalyst, convener, and connector to drive progress among customers, brand partners, manufacturers, innovators, regulators, and our employees.” (Zalando, 2025g, p.2).

The report highlights Zalando's commitment to collaboration: by working with customers, regulators, partners, and industry peers, it aims at facilitating the transition toward a more sustainable and fair fashion ecosystem. In the words of Zalando, "where we have direct control — our platform, operations, and private labels — we act decisively on topics from materials to human rights. Where our influence is indirect — such as with third-party brands or emerging innovators — we use our central position in the European fashion ecosystem to enable progress through partnership, standard setting, and policy advocacy." (Zalando, 2025g, p.2).

The report develops around five different themes: Environmental Policy, Workforce Wellbeing, Rights & Inclusion, Inclusive & Trustworthy Consumer Experience, Responsible Supplier Management & Compliance and Political Engagement.

Environmental Policy

Zalando is committed to minimizing its environmental impact across all aspects of its business and has concentrated considerable efforts to promote sustainable practices across the fashion value chain.

- **Climate Change Mitigation & Adaptation**

Zalando targets net-zero emissions in operations and private labels by 2040, and across its entire value chain by 2050. Its focus lies on renewable energy use, logistics efficiency, and supplier engagement. This ambition mirrors Meta's net-zero goals but differs in scale, as most emissions occur outside Zalando's control, making supplier collaboration central but also a major constraint on effectiveness

- **Pollution & Chemical Management**

Chemical management is a core environmental challenge for the fashion industry. Through its Restricted Substances List, Zalando enforces strict limits on hazardous materials in products and processes. Like Meta's governance approach, Zalando uses standard-setting to influence industry norms; however, enforcement across its complex supplier tiers remains a persistent challenge.

- **Water Management**

In 2024, Zalando introduced its first Water Management Policy, recognizing water as a key strategic resource. While its direct operations are not water-intensive, indirect dependencies

through textile production are substantial. The policy promotes efficiency and pollution control but lacks measurable reduction targets, leaving a gap between ambition and implementation.

- **Resources Use & Circular Economy**

Circularity is positioned as both a moral commitment and competitive asset. Zalando advances circular design, resale, repair and take-back programs, and has introduced a Pre-owned shop, reusable packaging, and use of recycled materials. By replacing plastic mailing bags with paper alternatives and introducing recyclable packaging, Zalando extends circularity principles across its network.

- **Waste Management**

Most waste produced originates from packaging, with textiles representing only 0.26% of the total, largely redirected to outlets or donations. With 96.6% of total waste recycled, Zalando demonstrates a strong management policy. However, this success reflects efficiency within its logistics system rather than fundamental reductions in production volumes.

Workforce Wellbeing, Rights & Inclusion

Zalando places people at the center of its responsibility approach, reflecting its position in a labor-intensive industry. Its workforce includes a wide variety of functions such as finance, HR, marketing, and operational staff in logistics centers and customer care. The firm also relies on third-party contractors whose working conditions are influenced by its operations. Compared to PayPal and Meta, Zalando's focus on social protection and inclusivity reflects its position within a historically labor-intensive sector.

- **Fair Labor Standards**

Zalando safeguards employee rights through union representation, works councils, and a European Works Council to ensure cross-border dialogue. Its Health, Safety, Security, and Environment policy aligns with EU standards, emphasizing safety in logistics operations. Supply chain partners must comply with human rights and labor requirements under the UN Guiding Principles and the Fair Wear Foundation, though indirect influence over working conditions remains limited.

- **Workforce Wellbeing & Social Benefits**

Zalando promotes a supportive culture rooted in fairness, flexibility, and work-life balance. Benefits include childcare assistance, emergency backup care, and return-to-work programs.

Mental health and wellbeing are supported through the Employee Assistance Programme, offering multilingual counseling to employees and relatives. Such initiatives illustrate a people-centered logic that frames social welfare as both ethical duty and retention strategy.

- Workforce Diversity & Inclusion

The firm aims at creating an accessible and inclusive workplace. This includes, for example, a disability inclusion action plan, covering office accessibility, allyship programs, employee-led resource groups and inclusive recruitment. The firm is also interested in fostering diversity in leadership and talent processes. Women in Tech Steering Committee and the TripleSteps are, for example, programs which foster female advancement through mentoring and coaching.

Inclusive & Trustworthy Consumer Experience

Zalando is committed to ensuring a safe, inclusive, and representative shopping experience for all its consumers. This commitment is reflected in the way the company curates its assortment, communicates sustainability information, and safeguards customer data. By focusing on representation, transparency, and privacy, Zalando seeks to build lasting consumer trust while ensuring that its platforms remain accessible, credible, and secure.

- Assortment & Representation

Zalando fosters diversity through inclusive product curation and brand partnerships. Initiatives include adaptive fashion for people with disabilities, extended sizing, unisex collections, and campaigns representing ethnic, LGBTQIA+, and religious communities. These actions are proof of a broad commitment to social inclusion, as inclusion is increasingly seen not just as social responsibility, but also as a driver of market relevance and innovation. However, ensuring that this inclusion extends consistently across its vast network of brands and suppliers remains a key challenge, as many partners operate under varying cultural and regulatory contexts.

- Information Accuracy

Sustainability claims are verified through third-party standards, risk-based audits, and partner documentation. Communication guidelines maintain compliance with EU consumer laws and are meant to be used as a tool to prevent greenwashing. Such practices reflect an attempt to institutionalize credibility and protect consumer trust at a time when sustainability claims in fashion are increasingly scrutinized.

- Privacy & Data Protection

Data privacy is considered essential for building consumer trust and maintaining regulatory compliance. Zalando privacy and security framework is based on compliance with the EU GDPR and supported by an Information Security Management System which ensures data integrity and reduces risks of cyber incidents.

Responsible Supplier Management & Compliance

Zalando's procurement processes include transparent contracting, negotiation, and approval workflows overseen by legal and compliance functions. Suppliers are monitored through risk assessments and adherence to the Code of Conduct. Sustainability integration is central, with suppliers bound by obligations under the German Supply Chain Act, covering human rights, environmental protection, and chemical compliance. A standardized framework helps ensure consistent engagement, data collection, and performance monitoring across the supply base. In comparison to PayPal and Meta, Zalando operates under greater regulatory pressure, reflecting the fashion sector's exposure to complex global supply chains and high reputational risk. Yet, despite these controls, true leverage over upstream production practices, as already highlighted, is constrained by the company's limited direct control beyond tier-one suppliers.

Political Engagement

A Public Affairs team is organized centrally, overseeing regulatory engagement across the EU and covering topics such as technology regulation, taxation and sustainability legislation. Guided by principles of neutrality and transparency, the firm explicitly refrains from political donations but engages in lobbying. Compared to Meta's more assertive regulatory activity, which aims at shaping norms around digital ecosystems, Zalando is more compliance oriented. Its refusal to make political donations reflects an intention to maintain distance from direct political influence, while its lobbying activity shows that it still seeks to shape policy outcomes, albeit through institutional and industry channels rather than overt political financing.

Zalando's sustainability approach reflects an effort to institutionalize responsibility across a complex value chain. It positions the firm as both a facilitator and standard setter within the fashion ecosystem in Europe, using its platform power and influence to diffuse sustainable and inclusive practices among partners. However, its reliance on partner compliance highlights the limits of its direct influence in driving systemic change. Key insights are summarized in Table 4, created by the author.

Table 4. Summary of Zalando's Key Findings.

Themes	Core Practices
Environmental Policy	• Use of renewable energy. • Net-zero targets. • Chemical management as stated by Restricted Substances Lists. • Water Management Policy. • Circular economy practices, such as pre-owned shop, recycled materials, take-back, repair). • Introduction of recycling packaging.
Workforce Wellbeing, Rights & Inclusion	• Union representation, works councils, EU Works Council. • Diversity and inclusion programs, like Women in Tech and TripleSteps. • Childcare assistance, emergency backup care, and return-to-work programs. • Mental health programs.
Inclusive & Trustworthy Consumer Experience	• Adaptive fashion, extended sizing, unisex collections, inclusive campaigns. • Third-party verification of sustainability claims. • GDPR compliance for privacy issues. • Communication guidelines to prevent greenwashing.
Responsible Supplier Management & Compliance	• Transparent contracting, risk assessments, social audits. • Adherence to German Supply Chain Act for human rights, environmental protection, and chemical compliance.

Political Engagement	• Lobbying for regulation compliance. • Transparent reporting. • No political donations (Zalando, 2025g).
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Source: created by the author.

Spotify

Spotify's 2024 Report reflects the company's dual commitment to creativity and responsibility, highlighting how innovation is coupled with an ongoing drive toward equity, environmental sustainability, and ethical governance. As the world's leading audio streaming platform, with 675 million monthly active users across 184 countries, Spotify leverages its scale to create meaningful connections between artists, creators, and listeners. Spotify aims at leveraging its global reach to act as a platform for diverse voices, while striving to reduce its environmental footprint and strengthen its internal culture of inclusion.

The report is structured around four themes: Climate Action Strategy, Equity, Diversity & Inclusion in the Workplace, Community Impact and Responsible Business & Transparency. In defining its priorities, Spotify places the needs of its community stakeholders at the forefront in a way that, as the report states "as Spotify grows, so too does our commitment to fulfilling our mission by constantly improving, evolving, and providing even more for the artists, creators, authors, fans, and employees at the heart of our global community" (Spotify, 2025c, p.7).

Climate Action Strategy

In 2024, Spotify's climate strategy focused on two main objectives: working towards achieving net-zero GHG emissions by 2030 and using its platform to engage and raise awareness among its global community of listeners and creators. Unlike the companies presented above, whose climate focus is largely operational, Spotify combines operational decarbonization with public awareness campaigns.

- Net-Zero & Sustainability in Operations

Spotify aims to reach net-zero emissions by 2030, focusing on the areas with the highest impact. Reduction measures include cloud optimization, supplier sustainability assessments, low-waste productions, and greater use of renewable electricity. However, the company notes that over

97% of its emissions are indirect, reflecting a limitation in controlling its full environmental impact. To address this, Spotify collaborates with initiatives such as Ad Net Zero, an industry association committed to reduce the impact of creating and running advertising, and DIMPACT, a project that explores ways to reduce the environmental footprint of digital media, demonstrating an industry-oriented approach to reducing value-chain emissions.

- **Storytelling & Engagement for Climate Action**

In addition to operational measures, Spotify uses its platform to raise awareness and mobilize climate action. How We Fix This, climate-focused podcasting, and the Sounds Right initiative illustrate efforts to integrate climate storytelling, environmental awareness, and conservation fundraising into cultural and creative formats. This approach highlights a distinctive feature of Spotify's sustainability model: leveraging its platform and audience reach to drive ecosystem-wide engagement rather than focusing solely on internal operational change.

Equity, Diversity & Inclusion in the Workplace

At the core of Spotify's culture lies a commitment to equity, diversity, and inclusion within its organization. Compared to Meta's governance-based approach to inclusivity and Zalando's equality programs rooted in labor and fairness, Spotify's approach is culture-oriented, treating inclusion as a creative asset that fuels innovation.

- **Workforce Inclusion & Equity**

Spotify is committed to building a workforce that reflects the diversity of its global community. In 2024, Spotify expanded its Equity, Diversity & Impact Hub to centralize training across the employee lifecycle. Initiatives such as Inclusion Filters, Management@ for new leaders, and Inclusive Leadership workshops promote empathy, bias mitigation, and psychological safety. Recruitment and internal mobility processes are supported by the AI-driven talent platform Echo, connecting employees to projects and mentorships globally, while annual pay-equity reviews and internship programs strengthen fairness and diverse talent pipelines.

- **Employee Wellbeing & Accessibility**

Spotify fosters holistic wellbeing through flexible work models, gender-neutral parental leave, and initiatives like All The Feels, a mental health service for employees and families. Notably, its neurodiversity initiatives, like the Neurodiversity Spotlight and the Playbook, illustrate an effort to normalize different cognitive experiences within the workplace, acknowledging that

neurodivergence is especially prevalent in technology environments. This focus distinguishes Spotify from its peers, positioning accessibility as integral to creativity and innovation.

Community Impact

Spotify extends its commitment to equity and inclusion beyond the workplace, leveraging its global platform to amplify marginalized voices, promote civic participation and foster cultural understanding.

- **Supporting Communities & Cultural Awareness**

The company reinforces its internal culture of belonging by facilitating open dialogue on topics such as antisemitism, Islamophobia, and anti-Arab hate, working with nonprofit partners and employee Belonging Groups to build tools for navigating cultural and religious diversity. Spotify also celebrates heritage and identity through initiatives like PRIDE events, Women's History Month, and Black History Month, moments that link internal inclusion with public visibility for creators and communities.

- **Media Responsibility & Civic Engagement**

Spotify integrates inclusivity and responsibility into content creation and curation, providing training and guidance to ensure responsible storytelling. Its civic engagement efforts, including voter participation campaigns, have the goal to make democratic participation more accessible to listeners. Programs such as EQUAL, which promotes, gender equity in music, and Frequency, celebrating Black artistry, reflect Spotify's use of media visibility as a tool for social impact. Through the Creator Equity Fund, the company channels resources toward Black, LGBTQIA+, and female creators, linking representation to tangible career opportunities.

Responsible Business & Transparency

Spotify frames responsible business as the foundation of user trust, focusing on safety, privacy, and ethical conduct across its ecosystem of listeners, creators, and partners.

- **Safe Content & User Protection**

Through its Platform Rules, Spotify prohibits harmful, deceptive, or illegal content, including hate speech, extremism, physical harm and sexual exploitation, while balancing moderation with creative freedom (Spotify, 2025d). The Safety Advisory Council, composed of civil-society partners like Project Rokit and Moonshot, provides external oversight on policy

updates and product design. This collaborative model mirrors Meta’s reliance on advisory structures.

- Data Protection and Privacy

Spotify treats privacy as a fundamental human right and prioritizes transparency and user control. Its Privacy Policy and Safety and Privacy Center explain how data is collected, used, and safeguarded. To motivate users to exercise their privacy rights, Spotify offers tools like Download Your Data, that allows users to get access to the data of their personal accounts.

- Supplier Responsibility

Spotify extends its ethical expectations to suppliers via a Supplier Code of Conduct mandating fair labor conditions, safety standards, and environmental reporting. While its operational footprint is not heavy, this policy shows an intent to align third-party practices with corporate values, an effort that reinforces consistency across the value chain, but remains limited by the platform’s largely digital nature.

To sum up, Spotify’s sustainability approach relies on cultural influence rather than operational control. By embedding sustainability into storytelling, inclusion, and creative collaboration, it leverages its platform to shape values across its ecosystem and build legitimacy. However, its impact remains constrained by limited control over indirect emissions and partner behavior, making influence its main tool for driving change. The main practices and themes present in Spotify’s report are summarized in Table 5, created by the author.

Table 5. Summary of Spotify’s Key Findings.

Themes	Core Practices
Climate Action Strategy	• Net-zero target by 2030. • Emission reduction via cloud optimization, supplier assessments, and renewable energy. • Partnerships with Ad Net Zero and DIMPACT. • Climate storytelling through How We Fix This and Sounds Right.
Equity, Diversity & Inclusion in the Workplace	• Equity, Diversity & Impact Hub.

	• Inclusion Filters. • Inclusive Leadership Workshops. • AI-driven Echo platform. • Neurodiversity programs.
Community Impact	• Support for Belonging Groups. • Initiatives on antisemitism, Islamophobia, and cultural awareness. • PRIDE events, Women's and Black History Month. • Programs like EQUAL, Frequency, and the Creator Equity Fund.
Responsible Business & Transparency	• Platform Rules for safe content (Spotify, 2025d). • Safety Advisory Council. • GDPR-compliant privacy framework. • Supplier Code of Conduct (Spotify, 2025c).

Source: created by the author.

Across Meta, PayPal, Zalando, and Spotify, distinct yet converging patterns emerge in how large digital and platform-based firms define and shape corporate responsibility. All four firms show a progressive institutionalization of sustainability within their governance structures. Meta and PayPal focus on ethics, compliance and transparency to ensure legitimacy in highly regulated environments, while Zalando extends these mechanisms to supply chain oversight under EU regulation. Spotify, by contrast, embeds responsibility into its cultural fabric, framing inclusion and creativity as governance tools. This contrast highlights varying expressions of governance, reflecting how each firm's approach to responsibility aligns with its business model and degree of regulatory exposure.

Across all four firms, there is a clear evolution from traditional practices of social responsibility toward a form of human-centered responsibility, where people, may they be employees, users,

and communities, are seen as primary stakeholders in sustainability. Wellbeing, inclusion, and equity are reframed not merely as moral obligations but as strategic enablers of innovation, engagement, and legitimacy.

However, each firm translates this principle through a distinct lens shaped by its sectoral identity and organizational culture. PayPal anchors responsibility in a strong workplace culture of belonging, while also extending it outward to promote community resilience and financial inclusion. By supporting small businesses and underserved groups, the firm links employee engagement with broader social empowerment, positioning inclusion as a bridge between internal cohesion and external impact. Zalando, operating within a labor-intensive and highly scrutinized industry, emphasizes social fairness both internally and externally: its workforce wellbeing, labor standards, and diversity programs are complemented by initiatives ensuring equitable representation, accessibility, and ethical treatment of consumers across its platform. Spotify frames inclusion as a creative and cultural asset, especially embedding neurodiversity awareness into its workplace, while leveraging its platform to amplify marginalized voices, and engage audiences. Meta, on the other hand, demonstrates a broad, integrated approach to people-centered responsibility, combining internal programs targeted at its workforce with external initiatives that safeguard users' rights, online safety, and digital community wellbeing. Through these tools, Meta seeks to protect, empower, and engage both its employees and its global user base. This comprehensive approach reflects a dual focus: nurturing internal culture while shaping responsible participation across its digital ecosystem. Taken together, these approaches illustrate that practices that put people at the center are becoming a central mechanism through which firms build trust and legitimacy in environments defined by both technological disruption and societal expectation.

Transparency, public reporting, and stakeholder dialogue emerge as central tools for managing external legitimacy across all firms. Each company invests in voluntary disclosures, reporting frameworks, and multi-channel engagement, but the underlying motivations differ, reflecting again different stakeholder expectations and business models.

Meta leverages transparency to comply with regulatory expectations but also to actively shape digital ecosystem norms. By engaging in policy dialogues, Meta positions itself as a proactive actor in setting standards for AI, online safety, and user rights, seeking to balance openness with strategic influence. PayPal focuses on building trust with users, employees, and investors through reporting on financial inclusion initiatives, internal culture, and ethical governance. Transparency here reinforces confidence in the integrity of firm's operations and long-term

stability. Zalando, operating in a highly regulated European fashion context, uses reporting and stakeholder communication to demonstrate compliance with EU directives and supply chain obligations, signaling accountability on environmental, labor, and social standards. Spotify takes a more cultural and narrative-driven approach, aligning transparency with social impact.

Through its initiatives, Spotify cultivates trust while signaling authenticity and responsiveness to its global user and creator communities. In all cases, transparency has both an instrumental and moral purpose, as it serves as a strategic governance mechanism to manage reputational risk, maintain stakeholder trust, and navigate complex regulatory and social expectations.

Another common challenge that emerges has to do with the inherent constraints in directly managing the behavior and outcomes of extended ecosystems. For Zalando, this is most visible in upstream supply chains. If the firm can enforce standards with tier-one suppliers, influence over second- and third-tier manufacturers remains limited, making partnerships, auditing, and capacity-building critical tools for shaping sustainable and socially fair practices. Meta faces similar challenges in the digital sphere, where the moderation of user-generated content and the mitigation of misinformation require balancing automated systems, human oversight, and community-driven mechanisms. Direct control over user behavior is impossible, so Meta leverages platform design, AI interventions, and engagement structures like Community Notes to guide norms and behaviors. PayPal also experiences limits in indirect effects of its supplier emissions. Spotify also deals with a similar issue, as almost all its emissions are outside its operational control, stemming from upstream suppliers and the digital ecosystem. To address these limitations, Spotify uses cultural influence and storytelling, integrating sustainability, equity, and inclusion values in its content and creator communities. While this strengthens engagement and shapes social norms, it can also be seen as a compensatory mechanism for limited operational control over environmental impacts.

These cases illustrate a broader pattern: traditional control models are insufficient in complex ecosystems, and influence, pursued through partnerships, cultural engagement, incentives, or ecosystem design, becomes the primary tool for extending corporate responsibility. Firms are increasingly expected to mobilize their networks and audiences, translating moral and societal obligations into actions that do not always rely on direct authority but on their capacity to steer behavior across interdependent systems.

In summary, the analysis reveals a common trajectory, with all firms going from compliance to collaboration, from internal responsibility to ecosystem influence, and from reactive risk

management to proactive norm-shaping. Nevertheless, this evolution remains uneven, as it is conditioned by regulatory environments, business models, and degrees of operational control. This shows that sustainability is not only a set of operational practices, but also a framework for decision-making and a tool for signaling credibility. It shapes how each company organizes its governance, interacts with stakeholders, and differentiates itself in the market. Therefore, sustainability functions both as a tool guiding internal processes and external responsibilities and a competitive narrative, showing to investors, regulators, customers, and communities that the company is legitimate, responsible, and forward-looking in an environment of heightened scrutiny.

5. Discussion

This chapter aims at discussing the findings of the study in light of the theoretical framework introduced earlier, with the goal of advancing scholarly debates and offering practical insights. The cases of Meta, PayPal, Zalando, and Spotify expand the understanding of sustainability in digital contexts, by highlighting how ecosystem interdependence influence legitimacy-building strategies. Practical contributions identify potential lessons for firms and regulators on how sustainability can be integrated into digital platform strategies in ways that balance symbolic signaling with structural transformation and extend the notion of responsibility into new areas. However, it must be acknowledged that further research could enrich these insights with more stakeholder-inclusive, longitudinal, and comparative approaches that could capture a fuller picture of how sustainability unfolds in the digital economy.

5.1 Theoretical contributions

Prior literature has defined digital firms as asset-light, scalable organizations that leverage technological infrastructure as their primary resource for value creation, by relying on platform ecosystems rather than hierarchical structures (Birkinshaw, 2022; Nambisan et al., 2019). With respect to this, the findings show that a firm's ability to create social and environmental value depends on the degree to which its value offer is fully digital or presents some type of physical presence. In previous chapters, the notion that platform businesses can be either fully digital or mixed was already introduced (UNCTAD, 2017). Here, the findings show that this difference presents implications for understanding in which ways firms direct their efforts to create social and environmental value.

Fully digital enterprises like Meta and PayPal leverage symbolic governance and coordination mechanisms, for example, by using AI to moderate harmful content, creating oversight boards to enforce ethical rules, or partnering with NGOs to promote different issues, such as financial inclusion or digital safety. These mechanisms allow them to influence social and environmental outcomes in an indirect way, through the behavior of users, partners, and third parties across their platform ecosystems. In contrast, mixed digital firms like Zalando integrate sustainability more structurally, incorporating circular economy principles, supply chain transformation, and regulatory alignment into their core operations. Spotify occupies an intermediary position, as it organizes on-site activities like live events, artist activations, and marketing productions, but decides to leverage cultural influence to shape sustainability outcomes through narrative framing, inclusivity programs, and partnerships with artists and advocacy organizations, rather than concentrating on reducing the impacts of its physical activities.

This pattern reinforces and extends theoretical insights on ecosystem interdependence and co-creation. Meta's distributed governance of information integrity illustrates modularity in practice: sustainability responsibilities are delegated across independent actors, such as users, oversight boards and the civil society, demonstrating how social value is co-produced in loosely coupled networks. A clear example of this is the newly introduced Community Notes, a feature that allows users to collaboratively add context to posts flagged as misleading. This tool shifts part of the fact-checking work to users, who collaborate to add clarifications or corrections. In this way, users are co-creators of information accuracy, increasing transparency and reducing accusations of unilateral censorship. However, this makes information accuracy dependent on voluntary user participation, meaning contributions may be uneven across topics, regions, or languages. Moreover, because notes are shaped by user judgments, biases can influence what is added or approved, and the consensus-based rating system may critically amplify majority perspectives while marginalizing minority viewpoints. This example shows how Meta decides to curate a governance mechanism where the ecosystem governs itself, with mixed outcomes. This case exemplifies therefore both the possibilities and the limits of co-creation in loosely coupled ecosystems.

In a similar way, sustainability within PayPal also emerges through collaboration. The platform provides digital infrastructure, like payment processing tools and APIs, that enables external actors such as NGOs, local banks, and microfinance institutions to deliver financial inclusion programs. For example, the several partnerships created by PayPal with financial institutions to extend financing opportunities beyond its own internal programs demonstrate that social value

is not produced by PayPal alone, but it emerges only when external partners apply their expertise to the tools and reach provided by the platform. This illustrates how fully digital ecosystems can generate sustainability outcomes without the platform exercising operational control over the partners' activities. This is another example that demonstrates that in loosely coupled digital ecosystems, co-creation is conditional and interdependent. Here, the two principles of complementarity and modularity can be observed. The platform enables NGOs, local banks, and community lenders to deliver financial inclusion programs by providing the digital infrastructure needed to execute these initiatives. This is an example of complementarity, as PayPal's tools and services alone cannot achieve social impact, and partners' specialized knowledge is equally insufficient without the platform's capabilities. Together, they generate outcomes that neither could produce independently. At the same time, PayPal's infrastructure is decoupled from the operational practices of its partners, and each actor pursues their goals autonomously while still contributing to coherent ecosystem-wide social impact. This illustrates modularity, where the platform enables independent action without exerting direct control, allowing multiple actors to collaborate flexibly and efficiently toward collective sustainability goals.

Compared to Meta and PayPal, Zalando shows how a firm can build sustainability governance in a hybrid platform ecosystem, where legitimacy depends on shaping the behavior of actors beyond the firm's organizational boundary. Because Zalando's sustainability risks are material and linked to labor conditions, manufacturing practices, and environmental impacts occurring in supplier networks, the company cannot rely only on symbolic commitments or partnerships. Instead, it implements structural coordination mechanisms, by setting mandatory standards, monitoring compliance, and using incentives to push suppliers toward more sustainable practices. Lacking direct authority over production, Zalando operates as a norm setter, driving circularity, transparency, and social fairness across its value chain.

More than any of the other firms analyzed, Spotify operates in a system where value creation is symbolic and cultural rather than strictly operational or governance-based. Most of Spotify's emissions and labor practices lie outside its direct control. Since structural influence over its supply chain is weak, Spotify instead exerts power through cultural relevance and narrative framing. By celebrating diverse creators, embedding equity principles into playlists, and raising environmental awareness, Spotify creates social and environmental value as a cultural curator, not as a regulator and builds therefore cultural legitimacy.

Collectively, these cases extend existing theory by demonstrating that how firms co-generate sustainability depends on the type of ecosystem they orchestrate. When firms have low direct control over outcomes, as with Meta or Spotify, sustainability is pursued through influence mechanisms, like symbolic governance, cultural engagement, or transparency tools that guide behavior without formal authority. When sustainability depends on high complementarity, as in PayPal's case, value is co-created through partnerships. The platform company provides the infrastructure, while external actors contribute expertise to deliver social impact. At the same time, when environmental and social effects are material and traceable to the value chain, as with Zalando, firms integrate sustainability more structurally, setting mandatory standards, monitoring compliance, and using incentives to steer suppliers toward aligned practices, as Chen et al. (2022), Kretschmer et al. (2022) and Gilbert et al. (2024) discussed in their research. This comparative insight shows that sustainability strategies are not generic choices but are shaped by the form of the ecosystem and the type of control a firm can exert.

Social value creation therefore depends heavily on interdependence among ecosystem actors. The study confirms that coordination, incentives, and reputation mechanisms are central to aligning participants' behaviors with collective sustainability goals. Meta uses modular governance and AI-driven systems to manage users' and complementors' conduct, ensuring positive externalities while minimizing negative ones. PayPal's partnerships illustrate how complementary capabilities in the ecosystem can amplify social impact, yet also reveal limits: environmental accountability is constrained when upstream actors do not adopt aligned practices. Zalando's orchestration role demonstrates the potential for standard-setting and norm alignment to embed sustainability structurally, while Spotify shows how influence and cultural intermediation can mobilize awareness and inclusivity. These cases collectively reinforce the notion that sustainability in platform ecosystems is inherently relational and co-created, requiring careful orchestration to utilize positive externalities while mitigating frictions among autonomous actors, in line with what theorized by Yi et al. (2023).

From an environmental perspective, the findings reveal a tension between symbolic and structural strategies. Firms like Meta, PayPal and Spotify tend to rely on symbolic mechanisms. Meta and PayPal match electricity use with renewable energy certificates and fund restoration or community projects. While these initiatives have measurable benefits, they do not change the underlying systems that generate emissions. Matching electricity through certificates or funding external environmental projects does not reduce the actual energy demand of data centers, cloud infrastructure, or digital services, nor does it guarantee that the energy used is

renewable at the moment of consumption. As a result, the companies may appear carbon-neutral, while still relying on electricity from fossil-fuel-based grids. In practice, these actions help build reputational legitimacy, but they function more as compensatory measures than as drivers of deep operational transformation. In a similar way, Spotify also operates symbolically, but through cultural influence, relying mostly on partnerships, advocacy campaigns, and awareness-building through its platform. Zalando differentiates itself in this sense, because its environmental impacts are tied to physical production, logistics, and supplier practices, which make symbolic commitments insufficient. Zalando cannot therefore rely on signaling alone, as its model requires material changes to products, processes, and supply chains, making sustainability a condition for participation in the ecosystem.

These differences in approach are closely linked to how each platform achieves legitimacy, highlighting the interplay between ecosystem dynamics and societal expectations. Across the four cases, firms do not rely solely on measurable outcomes, such as emissions reductions or expanded access, but also leverage pragmatic, cognitive, and moral mechanisms to secure societal acceptance. Meta constructs legitimacy by incorporating governance structures and involving stakeholders, reflecting how digital platforms can co-produce trust by enabling participation and transparency in decision-making processes. As highlighted by Lindman et al., (2023), aligning a business model with societal expectations to build moral legitimacy can fail when both stakeholder engagement and transparency are missing. PayPal gains legitimacy by enabling external partners to deliver social value, demonstrating that societal approval is not achieved through platform action alone, but through engaging complementary actors whose expertise and outreach extend the firm's societal impact.

Zalando signals credibility through regulatory alignment, showing that when environmental and social impacts are tangible and traceable, legitimacy is tied not only to symbolic commitments but also to compliance and demonstrable operational change. This illustrates how firms in hybrid ecosystems can enact self-regulation as a strategy to secure both regulatory and societal approval (Lindman et al., 2023). Spotify, in contrast, leverages narrative and cultural engagement to shape perceptions, demonstrating that moral and cognitive legitimacy can also be derived from symbolic influence and cultural authority, even when structural control over outcomes is limited.

Together, these cases extend legitimacy theory in digital ecosystems by showing that societal acceptance is distributed and networked. Firms achieve moral legitimacy by including affected groups in decision-making, either through consultation, negotiation, or deliberation, thereby

acknowledging the social consequences of their innovations (De los Reyes and Scholz, 2023). This networked legitimacy highlights both opportunities, such as fostering trust, building collaborative social impact, and aligning with societal norms, and challenges, including potential exclusion, bias, or the strategic use of self-regulation to prevent stricter external constraints. In platform ecosystems, sustainability and legitimacy are therefore deeply interwoven: they emerge relationally and require careful orchestration of participation, accountability, and influence to generate meaningful societal value.

5.2 Practical contributions

Beyond its theoretical implications, this study also aims at offering practical contributions for managers and policymakers to take into consideration when seeking to integrate sustainability into digital platform strategies.

First, sustainability strategies must be tailored to the traits of a firm's value offer and business model. Rather than adopting standardized ESG programs, firms should anchor sustainability in the mechanisms through which they create value. For social media platforms, such as Meta, legitimacy depends primarily on building trustworthy digital environments. Managers in these contexts should therefore focus on embedding safety, privacy, and rights protection directly into the architecture of the platform, through content moderation, algorithmic transparency, data governance and so on. The case of PayPal, as a financial intermediary, demonstrates that sustainability can be most effectively achieved by designing products and partnerships that expand financial inclusion and support underserved communities. In contrast, platforms that combine digital and physical operations, such as Zalando, must incorporate sustainability structurally into supply chain practices. For these companies, managerial efforts should focus on supplier compliance and proactive regulatory alignment, given their direct exposure to labor and environmental risks. Additionally, content platforms such as Spotify should leverage representation and inclusivity as central sources of legitimacy, while also strengthening accountability for the environmental and social impacts occurring in their supply chain.

Secondly, the results stress the importance of ecosystem-oriented sustainability management. Sustainability outcomes in platform contexts are not produced solely by the focal firm, but co-created through the collaboration of suppliers, users, NGOs, regulators, and other ecosystem actors. Managers should therefore move from a firm-level perspective to an ecosystem governance approach, designing mechanisms that distribute responsibility and incentivize sustainable behavior among complementary actors. For policymakers, the findings suggest that

sustainability regulation should increasingly target ecosystem-level accountability rather than firm-level disclosure only.

Moreover, the cases emphasize the need for a balance between symbolic and structural sustainability. Symbolic efforts, such as philanthropic activities, awareness campaigns, or diversity initiatives, play a valuable role in signaling values and building legitimacy. However, when not accompanied by changes to the underlying systems that create environmental or social impacts, symbolic actions risk being interpreted as superficial or even as greenwashing. Managers should therefore ensure that symbolic legitimacy building is complemented with structural measures that address root causes of impact, such as decarbonizing infrastructure, transforming supply chains, or adjusting business model incentives. Policymakers, in turn, can reinforce this balance by increasing transparency requirements and limiting the reliance on offsetting or reporting practices that lack direct operational effects.

Furthermore, the findings expand the understanding of what counts as sustainability practices in digital contexts. For firms operating in digital ecosystems, legitimacy is increasingly built in new areas such as data governance, AI ethics, online safety, and content integrity. Managers should therefore treat responsible data and AI governance as integral components of sustainability strategies, not as peripheral compliance tasks. Fostering transparency, fairness, and accountability within online governance becomes as important as advancing diversity and inclusion projects and achieving emissions reductions or resource efficiency, especially given that stakeholder expectations extend beyond material outcomes to include governance processes and ethical principles.

The findings highlight also the strategic role of regulatory alignment and inclusion. As a matter of fact, regulatory alignment can be used not only as a compliance mechanism but also as a source of competitive advantage. The case of Zalando illustrates that early engagement with sustainability regulation allows firms to anticipate stakeholder expectations, shape emerging norms, and differentiate themselves in the marketplace. Managers should therefore approach regulation strategically, while policymakers should design regulatory frameworks that reward proactive adoption.

Finally, the findings emphasize the need to embed equity and inclusion structurally in product design and platform governance. Instead of confining inclusion to HR activities, firms should incorporate it into the value proposition itself, whether through fair recommendation systems, accessible interfaces, inclusive sizing, or financial participation models. This highlights that

equity and representation are not peripheral to sustainability in digital ecosystems, but fundamental dimensions of it.

To sum up, these practical contributions demonstrate that sustainability in digital firms should not be a one-size-fits-all approach. On the contrary, strategies must be tailored to the logics of a specific business model, orchestrated across ecosystems, balanced between symbolic and structural commitments, and expanded to include all emerging dimensions of responsibility in the digital realm. Table 6, created by the author, synthesizes the practical contributions by translating case insights into prescriptive actions for managers and policymakers.

Table 6. Recommendations for Managers to Shape Sustainability Strategy.

Practical Insight	Prescriptive Contribution	Opportunities & Challenges
Align sustainability strategy to the firm's business model and value proposition.	Managers must design sustainability according to the nature of the platform.	Opportunities: Tailored sustainability reinforces pragmatic and moral legitimacy by aligning with what stakeholders expect from that specific platform role. Challenges: Different models lead to different legitimacy pressures, for example symbolic influence (Meta, Spotify) risks being perceived as superficial; structural change (Zalando) is costly and requires supplier compliance; ecosystem impact (PayPal) depends on partners' collaboration.
Sustainability must be orchestrated through	Adopt ecosystem governance: define	Opportunities: Enables co-creation of impact at

ecosystems, not only inside the firm.	incentives, standards, and shared accountability for suppliers, partners, creators, or users.	ecosystem scale. Challenges: Lower control over complementors makes enforcement difficult.
Balance symbolic and structural commitments.	Combine awareness-building and signaling with operational decarbonization and measurable change.	Opportunities: Symbolic action accelerates legitimacy with stakeholders. Challenges: Risk of greenwashing if not backed by structural transformation.
Expand sustainability to digital responsibility domains.	Treat data ethics, AI fairness, algorithm transparency, and online safety as sustainability topics.	Opportunities: Builds moral legitimacy in areas where regulations are emerging. Challenges: Lack of benchmarks and high expectations from society.
Use regulation proactively.	Engage early with regulators and anticipate policy shifts (not only comply once mandated).	Opportunities: Regulatory alignment becomes strategic advantage and source of legitimacy. Challenges: Requires resources and may slow short-term growth.
Embed equity and inclusion structurally into products and services.	Incorporate inclusion in design decisions, for example fair algorithms, accessible UI, adaptive fashion, inclusive financial products.	Opportunities: Moves inclusion from symbolic programs to value creation. Challenges: Requires redesign of systems, not just initiatives.

Source: created by the author.

5.3 Limitations & Future Outlets of Research

Like any study, this research can also present certain limitations that should be acknowledged. First, the analysis is based on the sustainability reports and publicly available documentation of four selected firms. While such sources provide rich insights into corporate strategies, they inevitably reflect the narratives companies wish to project. This reliance on self-reported data limits the ability to assess discrepancies between discourse and practice, or to capture critical stakeholder perspectives such as those of employees, regulators, or civil society actors. Future research could address this limitation through mixed-method or triangulated research designs, combining corporate disclosures with semi-structured interviews, field observations, or external datasets, such as ESG ratings, oversight reports by independent bodies or regulatory filings. This would enable a more balanced assessment and help validate whether sustainability claims translate into real outcomes.

Secondly, the study focused on a relatively small sample of four digital firms, chosen for their diversity in business models and industry sectors. While this selection enables comparison across different configurations of digital platforms, it may constrain the generalizability of the findings. Future research could expand the sample and adopt cross-case comparative studies, particularly involving non-Western firms, where institutional conditions, regulatory pressures, and cultural expectations regarding sustainability may differ significantly. Studying platforms from Asia, Africa, or Latin America would test whether the theoretical insights identified here hold beyond Western-centric contexts.

Moreover, the research focused on sustainability reports from a single year. This approach may not fully capture the evolution of firms' sustainability agendas during time, nor how strategies adapt to shifting stakeholder expectations, regulatory frameworks, or technological changes. Future studies could adopt a longitudinal perspective, tracing how digital firms' sustainability narratives and practices evolve over time, and whether claims of transformation translate into measurable outcomes.

The study also emphasizes corporate perspectives and strategies but gives less attention to the perspectives of ecosystem partners and stakeholders involved in co-creating sustainability value. Given that the findings highlight interdependence and co-creation as central to digital sustainability, future research could investigate how users, NGOs, regulators and other actors perceive and negotiate their role in these ecosystems. This would help to illuminate whether sustainability is genuinely co-constructed or remains largely orchestrated by platform leaders.

In conclusion, while the present study hopes to advance the understanding of how digital firms create sustainable value with their ecosystem members, addressing these limitations through broader, deeper, and more stakeholder-inclusive approaches could further enrich the theoretical and practical insights on sustainability in the digital era.

6. Conclusion

This study had the objective of exploring how digital firms contribute to solve pressing global challenges through the process of value creation that takes place within their ecosystems. As a matter of fact, societies in the last decade have been confronted with an unprecedented convergence of disruptions. The worsening of the climate crisis, biodiversity loss, the widening social inequality, the democratic instability and the accelerating digitization of the social and economic life have only been some of the transformative shifts that significantly reconfigured traditional ways of generating value. Because of such changes, firms are now not only seen as economic actors, but also as agents of collective problem-solving.

In particular, technological infrastructures have become part of nearly every dimension of daily life, from communication and commerce to culture and civic participation. As a result, platform companies are now powerful actors whose decisions actively shape economic, political and societal outcomes. In this context, such firms occupy a paradoxical position: on the one hand, they are celebrated as engines of innovation and efficiency; on the other, they are increasingly held responsible for issues of different nature, that range from surveillance, labor precarity and data privacy to misinformation and environmental impact. This tension raises therefore the fundamental question of how digital businesses leverage their ecosystems to create value not only from an economic point of view, but also from a social and environmental one.

Motivated by the growing societal expectations placed upon online platforms and the lack of clarity around how such firms give back beyond their economic performance, this research investigated how four leading digital actors, namely Meta, PayPal, Zalando, and Spotify, approach sustainability from both an environmental and social perspective, while also building and sustaining legitimacy through different types of mechanisms. The starting point of this study was then the recognition that online firms differ from traditional ones in a fundamental way. Rather than operating through linear value chains, these companies orchestrate networks of interdependent participants. This ecosystem-based structure implies that value creation cannot be understood in isolation but must be studied as a distributed, co-produced process. This research therefore asked: How do digital firms co-create value within their ecosystems from a corporate sustainability perspective?

To answer this question, the study conducted a comparative analysis of sustainability reports and publicly available disclosures from the selected companies, interpreting their strategies through the lenses of stakeholder and legitimacy theories. The findings therefore revealed that

sustainability is a distributed and negotiated process that depends on the interdependence between platform leaders and their ecosystem actors.

This study advances therefore the understanding of sustainability in digital platform firms by showing that the way companies create social and environmental value depends on the nature of their value offer and the type of control they possess in their platform ecosystem. The findings reveal three theoretically relevant patterns: (1) fully digital firms with low material impact, such as Meta and PayPal, tend to pursue sustainability through influence-based means and symbolic governance such as transparency tools, coordinated partnerships, and rights protection; (2) firms operating hybrid models with physical value chains, like Zalando, rely on structural mechanisms such as standards, supplier incentives, and regulatory alignment; and (3) firms that operate mainly through cultural intermediation, whose Spotify is an example, leverage narrative and representation to shape social outcomes when operational control is limited. Theoretically, this contributes a clearer explanation of why sustainability strategies differ across digital platforms, extending the literature by linking sustainability orientation to ecosystem structure, control asymmetry, and value configuration. Practically, the study tries to translate these insights into actionable guidance: managers should align sustainability with the levers of influence embedded in their business model, platform architecture for social media firms, partnership design for providers of digital solutions, supply-chain governance for e-commerce businesses, and narrative and representation for content providers. Policymakers should shift from regulating companies to regulating ecosystems, ensuring accountability for distributed outcomes. Instead of treating sustainability as a standardized set of ESG practices, this research shows that effective sustainability must be grounded in the logic of the specific business model, incorporated in the mechanisms through which the platform organizes its ecosystem, and translated into concrete change, rather than communicated primarily through symbolic signaling.

In any case, looking beyond the case firms, this study ultimately invites broader reflection on the evolving role of digital firms in addressing global sustainability challenges. Digital firms are uniquely positioned to shape not only markets, but also norms, infrastructures, and cultural narratives. However, with this influence comes responsibility. As ecosystems expand, so does the accountability that firms are expected to uphold in the eyes of society. Ultimately, the future of sustainability in the digital economy will depend on whether platforms, originally designed to scale content and transactions, can also be leveraged to scale accountability, justice, and resilience. This research has the hope of offering one step toward understanding how that

transition may be unfolding, and why it must be guided not only by corporate intent but also by continuous societal scrutiny.

In conclusion, this study shows that sustainability in digital ecosystems cannot be reduced to a matter of technological innovation. It is, at its core, a relational process, determined by the quality of connections, the fairness of governance structures, and the extent to which platforms enable others, not just themselves, to flourish. If digital firms are to become meaningful contributors to societal resilience, they must evolve from platforms of extraction to platforms of shared value. The cases analyzed here suggest that such a shift is possible, but far from guaranteed. Its success will depend on whether ecosystem collaboration is matched with genuine structural commitment rather than symbolic signaling. The path forward lies in ensuring that the power of networks will be used not only to organize markets, but to organize responsibility.

7. References

- Access Now. (2023, January 26). *Spotify investors: Stand up to human rights abuse*. https://www.accessnow.org/press-release/spotify-investors-human-rights/?utm_source=chatgpt.com
- Adner, R., & Kapoor, R. (2010). Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, 31(3), 306–333. <https://doi.org/10.1002/smj.821>
- Airbnb. (2021, April 21). *A beginner's guide to sustainable hosting*. <https://www.airbnb.com/resources/hosting-homes/a/a-beginners-guide-to-sustainable-hosting-344>
- Airbnb. (2025). *Learning Series. Pricing Your Place*. [Pricing Your Place - Resource Center - Airbnb](#)
- Alpert, L. I. (2025, March 12). Spotify says it paid \$10 billion in royalties in 2024 — but only 4% of its artists make a living. *MarketWatch*. https://www.marketwatch.com/story/spotify-says-it-paid-10-billion-in-royalties-in-2024-but-are-artists-any-better-off-82e7839e?utm_source=chatgpt.com
- Altman, E. J., Nagle, F., & Tushman, M. L. (2022). The Translucent Hand of Managed Ecosystems: Engaging Communities for Value Creation and Capture. *The Academy of Management Annals*, 16(1), 70–101. <https://doi.org/10.5465/annals.2020.0244>
- Amazon. (2025). *Become an Amazon seller*. https://sell.amazon.it/?ref_=sdww_soa_home_n
- Apple. (2025a). *Develop for iOS*. <https://developer.apple.com/ios/>
- Apple. (2025b). *App Review Guidelines*. <https://developer.apple.com/app-store/review/guidelines/>
- Apple. (2025c). *Getting featured on the App Store*. <https://developer.apple.com/app-store/getting-featured/>
- Arunasalam, S. (2025, March 12). Spotify paid over \$10B US to the music industry last year. How much actually makes it to the artists?. *CBC News*. <https://www.cbc.ca/news/entertainment/spotify-artists-songwriters-royalties-1.7481854>

- Baumgartner, R. J., & Rauter, R. (2017). Strategic perspectives of corporate sustainability management to develop a sustainable organization. *Journal of Cleaner Production*, 140, 81–92. <https://doi.org/10.1016/j.jclepro.2016.04.146>
- BBC News. (2013, July 15). Thom Yorke pulls albums from Spotify. <https://www.bbc.com/news/technology-23313445>
- Bergengruen, V., & Perrigo, B. (2021, March 23). Facebook Acted Too Late to Tackle Misinformation on 2020 Election, Report Finds. *Time*. <https://time.com/5949210/facebook-misinformation-2020-election-report/>
- Belkhir, L., & Elmeligi, A. (2018). Assessing ICT global emissions footprint: Trends to 2040 & recommendations. *Journal of Cleaner Production*, 177, 448–463. <https://doi.org/10.1016/j.jclepro.2017.12.239>
- Birkinshaw, J. (2022). Move fast and break things: Reassessing IB research in the light of the digital revolution. *Global Strategy Journal*, 12(4), 619–631. <https://doi.org/10.1002/gsj.1427>
- Bisultanova, A. (2023). Platform economy: The path to sustainable development. *E3S Web of Conferences*, 431, 7035. <https://doi.org/10.1051/e3sconf/202343107035>
- Blistein, J. (2019, May 23). Is Streaming Music Dangerous to the Environment? One Researcher Is Sounding the Alarm. *Rolling Stones*. <https://www.rollingstone.com/music/music-features/environmental-impact-streaming-music-835220/>
- Boyatzis, R. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Bradford, L. (2018, June 19). Why We Need To Talk About Burnout In The Tech Industry. *Forbes*. <https://www.forbes.com/sites/lbradford/2018/06/19/why-we-need-to-talk-about-burnout-in-the-tech-industry/>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Calma, J. (2025, May 17). Meta faces Democratic probe into plans to power a giant data center with gas. *The Verge*. <https://www.theverge.com/news/668934/meta-ai-data-center-gas-energy-climate-sustainability>
- Carman, A. (2024, June 12). Songwriters Association Files FTC Complaint Against Spotify Over Royalties. *Time*. <https://time.com/6988114/spotify-songwriters-ftc-complaint-royalties-audiobooks-bundle/>

- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning*, 10(6), 807–815. <https://doi.org/10.1016/j.cptl.2018.03.019>
- Cennamo, C., & Santaló, J. (2019). Generativity Tension and Value Creation in Platform Ecosystems. *Organization Science (Providence, R.I.)*, 30(3), 617–641. <https://doi.org/10.1287/orsc.2018.1270>
- Chan, W. (2022, March 11). ‘Insidious and seductive’: Uber funds new lobbying group to deny rights for gig workers. *The Guardian*. <https://www.theguardian.com/business/2022/mar/11/uber-funds-new-lobbying-group-to-deny-rights-for-gig-workers>
- Chang, R.D., Zuo, J., Zhao, Z.Y., Zillante, G., Gan, X.L., & Soebarto, V. (2017). Evolving theories of sustainability and firms: History, future directions and implications for renewable energy research. *Renewable & Sustainable Energy Reviews*, 72, 48–56. <https://doi.org/10.1016/j.rser.2017.01.029>
- Chee, F. Y. (2025, May 14). Advocacy group threatens Meta with injunction over data-use for AI training. *Reuters*. <https://www.reuters.com/sustainability/boards-policy-regulation/advocacy-group-threatens-meta-with-injunction-over-use-eu-data-ai-training-2025-05-14/>
- Chen, L., Shaheer, N., Yi, J., & Li, S. (2019). The international penetration of ibusiness firms: Network effects, liabilities of outsidership and country clout. *Journal of International Business Studies*, 50(2), 172–192. <https://doi.org/10.1057/s41267-018-0176-2>
- Chen, L., Tong, T. W., Tang, S., & Han, N. (2022). Governance and Design of Digital Platforms: A Review and Future Research Directions on a Meta-Organization. *Journal of Management*, 48(1), 147–184. <https://doi.org/10.1177/01492063211045023>
- Cheung, B. (2025, February 6). Google rolls back DEI efforts, including hiring goals. *NBC News*. <https://www.nbcnews.com/tech/tech-news/google-rolls-back-dei-efforts-hiring-goals-rcna190902>
- Chow, A. R. (2025, January 07) Why Meta’s Fact-Checking Change Could Lead to More Misinformation on Facebook and Instagram. *Time*. <https://time.com/7205332/meta-fact-checking-community-notes/>
- Cornelissen, J., & Cholakova, M. (2021). Profits Uber everything? The gig economy and the morality of category work. *Strategic Organization*, 19(4), 722–732. <https://doi.org/10.1177/1476127019894506>

- Cusumano, M. A., Gawer, A., & Yoffie, D. B. (2021). Can self-regulation save digital platforms? *Industrial and Corporate Change*, 30(5), 1259–1285. <https://doi.org/10.1093/icc/dtab052>
- Cutolo, D., & Kenney, M. (2021). Platform-Dependent Entrepreneurs: Power Asymmetries, Risks, and Strategies in the Platform Economy. *Academy of Management Perspectives*, 35(4), 584–605. <https://doi.org/10.5465/amp.2019.0103>
- De los Reyes, G., & Scholz, M. (2023). Assessing the Legitimacy of Corporate Political Activity: Uber and the Quest for Responsible Innovation. *Journal of Business Ethics*, 184(1), 51–69. <https://doi.org/10.1007/s10551-022-05115-z>
- De Reuver, M., Sørensen, C., & Basole, R. C. (2018). The Digital Platform: A Research Agenda. *Journal of Information Technology*, 33(2), 124–135. <https://doi.org/10.1057/s41265-016-0033-3>
- Dorman, J.L. (2025, May 24). Read the letter a senator sent to Spotify after BI found 200 fake podcasts on the platform peddling opioids. *Business Insider*. https://www.businessinsider.com/spotify-fake-podcast-opioids-maggie-hassan-2025-5?utm_source=chatgpt.com
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities And Challenges. *Academy of Management Journal*, 50(1), 25–32. <https://doi.org/10.5465/amj.2007.24160888>
- Ellisen-Petersen, H. (2014, November 05). Taylor Swift takes a stand over Spotify music royalties. *The Guardian*. <https://www.theguardian.com/music/2014/nov/04/taylor-swift-spotify-streaming-album-sales-snub>
- Ersen, H. (2024, September 04). Verdi calls for four-day warning strike at Zalando. *MarketScreener*. <https://www.marketscreener.com/quote/stock/ZALANDO-SE-18100088/news/Verdi-calls-for-four-day-warning-strike-at-Zalando-49568272/>
- Etter, M., Fieseler, C., & Whelan, G. (2019). Sharing Economy, Sharing Responsibility? Corporate Social Responsibility in the Digital Age. *Journal of Business Ethics*, 159(4), 935–942. <https://doi.org/10.1007/s10551-019-04212-w>
- European Commission. (2024, February 2022). *Zalando commits to provide clearer information for consumer following EU action*. [Press release]. https://ec.europa.eu/commission/presscorner/detail/en/ip_24_948

- Faragher, J. (2019, November 22). Zalando accused of misusing software to rank workers. *Personnel Today*. <https://www.personneltoday.com/hr/zalando-accused-of-misusing-software-to-rank-workers/>
- Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, 5(1), 80–92. <https://doi.org/10.1177/160940690600500107>
- Fleming, S. (2019, February 27). Streaming music isn't as green as you might think. Here's why. *World Economic Forum*. <https://www.weforum.org/stories/2019/02/streaming-music-isn-t-as-green-as-you-might-think-here-s-why/>
- Frynas, J. G., & Yamahaki, C. (2016). Corporate social responsibility: review and roadmap of theoretical perspectives. *Business Ethics*, 25(3), 258–285. <https://doi.org/10.1111/beer.12115>
- Goldman Sachs. (2024, May 14). *AI is poised to drive 160% increase in data center power demand*. <https://www.goldmansachs.com/insights/articles/AI-poised-to-drive-160-increase-in-power-demand>
- Garud, R., Kumaraswamy, A., Roberts, A., & Xu, L. (2022). Liminal movement by digital platform-based sharing economy ventures: The case of Uber Technologies. *Strategic Management Journal*, 43(3), 447–475. <https://doi.org/10.1002/smj.3148>
- Gawer, A., & Cusumano, M. A. (2014). Industry Platforms and Ecosystem Innovation. *The Journal of Product Innovation Management*, 31(3), 417–433. <https://doi.org/10.1111/jpim.12105>
- Gawer, A. (2021). Digital platforms' boundaries: The interplay of firm scope, platform sides, and digital interfaces. *Long Range Planning*, 54(5), 102045. <https://doi.org/10.1016/j.lrp.2020.102045>
- George, G., & Schillebeeckx, S. J. D. (2022). Digital transformation, sustainability, and purpose in the multinational enterprise. *Journal of World Business: JWB*, 57(3), 101326. <https://doi.org/10.1016/j.jwb.2022.101326>
- Gilbert, D. U., Schrage, S., & Behnam, M. (2024). Advancing the Moral legitimacy of digital platforms as gatekeepers: a critical analysis from a political corporate social responsibility perspective. *Journal of Business Economics*, 94(7), 1115–1145. <https://doi.org/10.1007/s11573-024-01200-z>

- Gorwa, R. (2022): Who Are the Stakeholders in Platform Governance? *Yale Journal of Law & Technology*, 24, 493-509.
- Greenwood, B. N., & Wattal, S. (2017). Show Me the Way to Go Home: An Empirical Investigation of Ride-Sharing and Alcohol Related Motor Vehicle Fatalities. *MIS Quarterly*, 41(1), 163–188. <https://doi.org/10.25300/MISQ/2017/41.1.08>
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in Corporate Sustainability: Towards an Integrative Framework. *Journal of Business Ethics*, 127(2), 297–316. <https://doi.org/10.1007/s10551-014-2047-5>
- Hawlitschek, F., & Hodapp, D. (2024). Challenges to Co-Creating Value in Nascent Platform Ecosystems: Gaps Between Theory and Practice. *International Journal of Electronic Commerce*, 28(2), 156–185. <https://doi.org/10.1080/10864415.2024.2332046>
- Hebous, S. & Vernon-Lin, N. (2024, August 15). Carbon Emissions from AI and Crypto Are Surging and Tax Policy Can Help. *IMF Blog*. <https://www.imf.org/en/Blogs/Articles/2024/08/15/carbon-emissions-from-ai-and-crypto-are-surging-and-tax-policy-can-help>
- Hein, A., Schrieck, M., Riasanow, T., Setzke, D. S., Wiesche, M., Böhm, M., & Krcmar, H. (2020). Digital platform ecosystems. *Electronic Markets*, 30(1), 87–98. <https://doi.org/10.1007/s12525-019-00377-4>
- Hennart, J. F. (2014). The Accidental Internationalists: A Theory of Born Globals. *Entrepreneurship Theory and Practice*, 38(1), 117–135. <https://doi.org/10.1111/etap.12076>
- Iansiti, M., & Levien, R. (2004). Keystones and dominators: Framing operating and technology strategy in a business ecosystem. *Harvard Business School, Boston*, 3(1-82). https://profligategrace.com/documents/Grant/Evil_Ecosystem_Paper.pdf
- Isensee, C., Teuteberg, F., & Griesse, K. (2025). Digital platforms and the SDGs: A socio-eco-technical framework for SMEs based on cross-case analysis. *Corporate Social-Responsibility and Environmental Management*, 32(1), 1–17. <https://doi.org/10.1002/csr.2914>
- Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, 39(8), 2255–2276. <https://doi.org/10.1002/smj.2904>
- Kaplan, A., & Haenlein, M. (2020). Rulers of the world, unite! The challenges and opportunities of artificial intelligence. *Business Horizons*, 63(1), 37–50. <https://doi.org/10.1016/j.bushor.2019.09.003>

- Karanović, J., Berends, H., & Engel, Y. (2021). Regulated Dependence: Platform Workers' Responses to New Forms of Organizing. *Journal of Management Studies*, 58(4), 1070–1106. <https://doi.org/10.1111/joms.12577>
- Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, 25(1), 79–93. <https://doi.org/10.1080/02673843.2019.1590851>
- Kelsey, R. (2015, November 02). Dating apps increasing rates of sexually transmitted infections, say doctors. *BBC News*. <https://www.bbc.com/news/newsbeat-34008736>
- Knight, C. (2001). Human-Environment Relationship: Comparative Case Studies. In N. J. Smelser & P. B. Baltes (Eds.), *International Encyclopedia of the Social and Behavioral Sciences* (Vol. 10, pp. 7039–7045). Pergamon. <https://doi.org/10.1016/B0-08-043076-7/04195-4>
- Kretschmer, T., Leiponen, A., Schilling, M., & Vasudeva, G. (2022). Platform ecosystems as meta-organizations: Implications for platform strategies. *Strategic Management Journal*, 43(3), 405–424. <https://doi.org/10.1002/smj.3250>
- Lambrecht, A., & Tucker, C. (2019). Algorithmic Bias? An Empirical Study of Apparent Gender-Based Discrimination in the Display of STEM Career Ads. *Management Science*, 65(7), 2966–2981. <https://doi.org/10.1287/mnsc.2018.3093>
- Lee, D. (2016, June 21). Instagram users top 500 million. *BBC News*. <https://www.bbc.com/news/technology-36584511>
- Li, J., Chen, L., Yi, J., Mao, J., & Liao, J. (2019). Ecosystem-specific advantages in international digital commerce. *Journal of International Business Studies*, 50(9), 1448–1463. <https://doi.org/10.1057/s41267-019-00263-3>
- Lin, W., Wang, Y., Samara, G., & Lu, J. (2024). Governance of corporate social responsibility: a platform ecosystem perspective. *Management Decision*, 62(12), 3782–3816. <https://doi.org/10.1108/MD-10-2023-1843>
- Lindman, J., Makinen, J., & Kasanen, E. (2023). Big Tech's power, political corporate social responsibility and regulation. *Journal of Information Technology*, 38(2), 144–159. <https://doi.org/10.1177/02683962221113596>
- Lock, I., & Seele, P. (2017). Theorizing stakeholders of sustainability in the digital age. *Sustainability Science*, 12(2), 235–245. <https://doi.org/10.1007/s11625-016-0404-2>

- Loonam, J., & O'Regan, N. (2022). Global value chains and digital platforms: Implications for strategy. *Strategic Change*, 31(1), 161–177. <https://doi.org/10.1002/jsc.2485>
- Macheel, T. (2025, July 09). Bitcoin rises to fresh record above \$112,000, helped by Nvidia-led tech rally. *CNCB*. <https://www.cnbcb.com/2025/07/09/crypto-market-today.html>
- Mackieson, P., Shlonsky, A., & Connolly, M. (2019). Increasing rigor and reducing bias in qualitative research: A document analysis of parliamentary debates using applied thematic analysis. *Qualitative Social Work : QSW : Research and Practice*, 18(6), 965–980. <https://doi.org/10.1177/1473325018786996>
- Madanaguli, A., Parida, V., Sjödin, D., & Oghazi, P. (2023). Literature review on industrial digital platforms: A business model perspective and suggestions for future research. *Technological Forecasting & Social Change*, 194, 122606. <https://doi.org/10.1016/j.techfore.2023.122606>
- Marr, D. & Boyce J. (Hosts). (2025, May 13). Meta's mega data centres are creating a water crisis in Spain, while Europe faces similar challenges. [Audio podcast episode]. In *Late Night Live*. ABC Radio National. <https://www.abc.net.au/listen/programs/latenightlive/john-boyce-meta-data-centre/105288884>
- Martin, K. E. (2015). Ethical Issues in the Big Data Industry. *MIS Quarterly Executive*, 14(2), pp. 67-85. <https://aisel.aisnet.org/misqe/vol14/iss2/4>
- McGreal, C. (2023, May 24). US Congress members demand that PayPal end ban on Palestinian business. *The Guardian*. <https://www.theguardian.com/technology/2023/may/24/paypal-palestine-ban-us-congress->
- McIntyre, D. P., & Srinivasan, A. (2017). Networks, platforms, and strategy: Emerging views and next steps. *Strategic Management Journal*, 38(1), 141–160. <https://doi.org/10.1002/smj.2596>
- Meta. (2023, February 15). *Meta's Approach to Tax Policy*. https://s21.q4cdn.com/399680738/files/doc_downloads/governance_documents/2023/02/meta-s-approach-to-tax-policy.pdf
- Meta. (2024, September 20). *2024 Responsible Business Practices Report*. https://scontent-vie1-1.xx.fbcdn.net/v/t39.8562-6/461153991_873841448032383_1837956778532453659_n.pdf?_nc_cat=103&ccb=1

-7&_nc_sid=e280be&_nc_ohc=MMx-fECecF4Q7kNvwG4FyQK&_nc_oc=AdkBmvGu-ipfdI1UwPZp5TiKfMYhmN0nuNcDR71YXYzRaPb_DY1RDMgdRwInnrLytgE&_nc_zt=14&_nc_ht=scontent-vie1-1.xx&_nc_gid=AvCqQgJv1A8AG-55J1sbsg&oh=00_AfUpkbD3tZIllokKOujupNYEoNgGflaBiXcp0GGYWzkLg&oe=68A6D39E

- Meta. (2025a). *Company Information, Culture, and Principles*. [Company information, culture and principles | About Meta](#)
- Meta. (2025b, January 29). *Meta Reports Fourth Quarter and Full Year 2024 Results* [Press release]. [Meta-Reports-Fourth-Quarter-and-Full-Year-2024-Results-2025.pdf](#)
- Meta. (2025c). *Privacy progress update*. <https://www.meta.com/en-gb/actions/privacy-progress/?srsltid=AfmBOop8ewelt1yr98AG0LdUH7I1wSvLTSOpIps5KCUQ0YZESwGy3iQ>
- Meta. (2025d). *Due Diligence on Israel and Palestine*. <https://humanrights.fb.com/blog/due-diligence-on-israel-and-palestine/>
- Meta. (2025e). *Safety Center*. <https://about.meta.com/actions/safety/>
- Meta. (2025f). *Community Standards*. <https://transparency.meta.com/policies/community-standards/>
- Meta. (2025g, April 07). *Community Notes: A New Way to Add Context to Posts*. <https://transparency.meta.com/features/community-notes>
- Meuer, J., Koelbel, J., & Hoffmann, V. H. (2020). On the Nature of Corporate Sustainability. *Organization & Environment*, 33(3), 319–341. <https://doi.org/10.1177/1086026619850180>
- Michel, M. (2024, May 08). PayPal’s crypto emissions now make up more than 15% of its carbon footprint. *CSO Futures*. <https://www.csofutures.com/news/paypals-crypto-emissions-now-make-up-more-than-15-of-its-carbon-footprint/>
- Mintah, E. O., & Elmarzouky, M. (2024). Digital-Platform-Based Ecosystems: CSR Innovations during Crises. *Journal of Risk and Financial Management*, 17(6), 247. <https://doi.org/10.3390/jrfm17060247>
- Moise, I. (2024, October 25). It Has Your Money—and Your Pants Size. Here’s What PayPal Is Doing With Them. *The Wall Street Journal*. <https://www.wsj.com/personal-finance/paypal-sell-customer-purchase-data-266b0e79>

- Monaghan, S., Tippmann, E., & Coviello, N. (2020). Born digitals: Thoughts on their internationalization and a research agenda. *Journal of International Business Studies*, 51(1), 11–22. <https://doi.org/10.1057/s41267-019-00290-0>
- Monroy Yglesias, A. (2018, November 8). *How music streaming algorithms hinder female artists*. GRAMMY Awards. <https://www.grammy.com/news/how-music-streaming-algorithms-hinder-female-artists>
- Montiel, I., Cuervo-Cazurra, A., Park, J., Antolín-López, R., & Husted, B. W. (2021). Implementing the United Nations' Sustainable Development Goals in international business. *Journal of International Business Studies*, 52(5), 999–1030. <https://doi.org/10.1057/s41267-021-00445-y>
- Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2023). A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model in Qualitative Research. *International Journal of Qualitative Methods*, 22. <https://doi.org/10.1177/16094069231205789>
- Nambisan, S., Zahra, S. A., & Luo, Y. (2019). Global platforms and ecosystems: Implications for international business theories. *Journal of International Business Studies*, 50(9), 1464–1486. <https://doi.org/10.1057/s41267-019-00262-4>
- National Music Publishers' Association. (2025, February 04). *NMPA announces extensive podcast takedown action against Spotify*. <https://www.nmpa.org/nmpa-announces-extensive-podcast-takedown-action-against-spotify/>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. <https://doi.org/10.1177/1609406917733847>
- Padin, L. (2019, December 05). Uber's Dangerous Expansion Into Temporary Labor. *National Employment Law Project*. <https://www.nelp.org/ubers-dangerous-expansion-temporary-labor/>
- Papaevangelou, C. (2021). The existential stakes of platform governance: a critical literature review. *Open Research Europe*, 1, 1–31. <https://doi.org/10.12688/openreseurope.13358.2>
- Parker, G., Van Alstyne, M., & Jiang, X. (2017). Platform Ecosystems: How Developers Invert the Firm. *MIS Quarterly*, 41(1), 255–266. <https://doi.org/10.25300/MISQ/2017/41.1.13>
- Patton, M. Q. (1994). *Qualitative evaluation and research methods* (2nd ed.). Sage Publications, Inc.

- PayPal. (2025a). *About us*. <https://www.paypal.com/uk/webapps/mpp/about>
- PayPal. (2025b, April 29). *PayPal Reports First Quarter 2025 Results*. https://s205.q4cdn.com/875401827/files/doc_financials/2025/q1/PYPL-1Q-25-Earnings-Release.pdf
- PayPal. (2025c, February 04). *PayPal Reports Fourth Quarter and Full Year 2024 Results*. https://s205.q4cdn.com/875401827/files/doc_financials/2024/q4/PYPL-4Q-24-Earnings-Release.pdf
- PayPal. (2025d). *Global Payment Processing*. <https://www.paypal.com/us/enterprise/payment-processing>
- PayPal. (2025e). *Who we are – Missions & values*. <https://about.pypl.com/who-we-are/mission-vision-values/default.aspx>
- PayPal. (2025f). *Fraud Protection Advanced*. <https://www.paypal.com/us/enterprise/fraud-protection-advanced>
- PayPal. (2025g, May 13). *2024 Global Impact Report*. https://s205.q4cdn.com/210152132/files/doc_downloads/2025/05/13/PayPal-2024-GIR-Report-FINAL-5-12-25.pdf
- Peirson-Hagger, E. (2025, March 14). Greed, gaslighting and NDAs: How record labels get rich while artists suffer. *The i Paper*. <https://inews.co.uk/culture/music/greed-gaslighting-and-ndas-how-record-labels-get-rich-while-artists-suffer-3578006?srltid=AfmBOoo09Nlwsawxdo70mtN5uEdzs2wG7d7FUMQkMZTqYIw0dvGKxuEg>
- Pohl, N. (2025, February 11). Music Streaming: What Does a Fair Deal for Musicians Look Like?. *Musicians' Union*. <https://musiciansunion.org.uk/news/music-streaming-what-does-a-fair-deal-for-musicians-look-like>
- Protti. (2025, January 28). Reflecting on Meta's \$8 Billion Investment in Privacy. *Meta*. <https://about.fb.com/news/2025/01/meta-8-billion-investment-privacy/>
- Rahman-Jones, I. (2025, April 17). Google has illegal advertising monopoly, judge rules. *BBC News*. <https://www.bbc.com/news/articles/c3674nl7g74o>
- Reuters. (2024, December 17). *EU privacy regulator fines Meta 251 million euros for 2018 breach*. <https://www.reuters.com/technology/eu-privacy-regulator-fines-meta-251-million-euros-2024-12-17/>
- Ricart, J. E., Snihur, Y., Carrasco-Farré, C., & Berrone, P. (2020). Grassroots Resistance to Digital Platforms and Relational Business Model Design to Overcome It: A

Conceptual Framework. *Strategy Science*, 5(3), 271–291.
<https://doi.org/10.1287/stsc.2020.0104>

- Roeder, A. (2025, January 10). *Meta's fact-checking changes raise concerns about spread of science misinformation*. Harvard T.H. Chan School of Public Health. <https://hsph.harvard.edu/news/metasc-fact-checking-changes-raise-concerns-about-spread-of-science-misinformation/>
- Rogers, L. (2025, February 04). *Meta Ends Fact-Checking, Raising Risks of Disinformation to Democracy*. Union of Concerned Scientists. <https://blog.ucs.org/liza-gordon-rogers/meta-ends-fact-checking-raising-risks-of-disinformation-to-democracy/>
- Runfola, A., Perna, A., Baraldi, E., & Gregori, G. L. (2017). The use of qualitative case studies in top business and management journals: A quantitative analysis of recent patterns. *European Management Journal*, 35(1), 116–127. <https://doi.org/10.1016/j.emj.2016.04.001>
- Satariano, A. (2023, May 22). Meta Fined \$1.3 Billion for Violating E.U. Data Privacy Rules. *New York Times*. <https://www.nytimes.com/2023/05/22/business/meta-facebook-eu-privacy-fine.html>
- Savage, M. (2021, January 28). Spotify wants to suggest songs based on your emotions. *BBC News*. <https://www.bbc.com/news/entertainment-arts-55839655>
- Scheyvens, R., Banks, G., & Hughes, E. (2016). The Private Sector and the SDGs: The Need to Move Beyond “Business as Usual”. *Sustainable Development*, 24(6), 371–382. <https://doi.org/10.1002/sd.1623>
- Sheehan, A. (2025, January 30). Pittsburgh residents becoming frustrated with a lack of regulation surrounding short-term rentals. *CBS News*. <https://www.cbsnews.com/pittsburgh/news/pittsburgh-residents-airbnb-rental-frustration/>
- Sherman, N. (2025, January 11). Meta and Amazon scale back diversity initiatives. *BBC News*. <https://www.bbc.com/news/articles/cgmy7xpw3pyo>
- Spotify. (2025a). *About Spotify*. <https://newsroom.spotify.com/company-info/>
- Spotify. (2025b). *Annual report 2024*. https://s29.q4cdn.com/175625835/files/doc_financials/2024/ar/Annual-Report-2024.pdf
- Spotify. (2025c, March 10). *Equity & Impact Report 2024*. https://s29.q4cdn.com/175625835/files/doc_governance/2025/Mar/10/Spotify-Equity-Impact-Report-2024-9b1865.pdf

- Spotify. (2025d). *Spotify Platform Rules*.
<https://www.spotify.com/us/safetyandprivacy/platform-rules>
- Stein Smith, S. (2024, October 05). PayPal's Investments Are Leading The Mass Adoption Of Crypto Payments. *Forbes*. <https://www.forbes.com/sites/digital-assets/2024/10/05/paypals-investments-are-leading-the-mass-adoption-of-crypto-payments/>
- Stempel, J. (2025, January 23). PayPal fined by New York for cybersecurity failures. *Reuters*
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *The Academy of Management Review*, 20(3), 571. <https://doi.org/10.2307/258788>
- Suzor, N., Van Geelen, T., & Myers West, S. (2018). Evaluating the legitimacy of platform governance: A review of research and a shared research agenda. *The International Communication Gazette*, 80(4), 385–400. <https://doi.org/10.1177/1748048518757142>
- Sweney, M. (2025, June 25). Adults in Great Britain now spending more time on mobiles than watching TV. *The Guardian*. <https://www.theguardian.com/media/2025/jun/25/adults-great-britain-time-mobiles-watching-tv-screen-ipa-survey>
- Symons, A. (2023, March 09). Fast fashion retailer Zalando claims its returns are 'climate neutral'. Is it true?. *Euronews*. <https://www.euronews.com/green/2023/03/09/fast-fashion-retailer-zalando-claims-its-returns-are-climate-neutral-is-it-true>
- Takahashi, A. & Araujo, L. (2019). Case study research: opening up research opportunities. *RAUSP Management Journal*, 55(1), 100–111, <https://doi.org/10.1108/RAUSP-05-2019-0109>.
- Tate, W. L., Ellram, L. M., & Kirchhoff, J. F. (2010). Corporate social responsibility reports: a thematic analysis related to supply chain management. *The Journal of Supply Chain Management*, 46(1), 19–44. <https://doi.org/10.1111/j.1745-493X.2009.03184.x>
- Teece, D.J. (2017). Complementarities. In: M. Augier & D. Teece (Eds.), *The Palgrave Encyclopedia of Strategic Management*. Palgrave Macmillan, London. https://doi.org/10.1057/978-1-349-94848-2_43-2
- Tencer, D. (2025, January 21). Global audio streams jumped 14% in 2024 to 4.8 trillion – with pop music the fastest-growing genre in the US. *Music Business Worldwide*.

<https://www.musicbusinessworldwide.com/global-audio-streams-jumped-14-in-2024-to-4-8-trillion-as-pop-music-was-the-fastest-growing-genre-in-the-us/>

- Toussaint, B. (2014, April 27). Online retailer Zalando under fire over work conditions. *Fashion Network*. <https://www.fashionnetwork.com/news/Online-retailer-zalando-under-fire-over-work-conditions,402025.html>
- Turnnidge, S. (2025, January 01). 'Impossible' to make ends meet, Uber drivers say. *BBC News*. <https://www.bbc.com/news/articles/c1elg0267p6o>
- Uber. (2018, October 09). *Become a partner-driver? All Uber benefits at a glance*. <https://www.uber.com/en-NL/blog/uber-voordelen-voor-uber-partners/>
- UNCTAD. (2017). World Investment Report 2017: investment and the digital economy. In United Nations Conference on Trade and Development, United Nations, Geneva. https://unctad.org/system/files/official-document/wir2017_en.pdf.
- United Musicians and Allied Workers. (2025, March 15). *Justice at Spotify*. <https://weareumaw.org/justice-at-spotify/>
- United States Artificial Intelligence Institute. (2025, May 01). Welcome Meta AI App - Reimagining Digital Assistance. <https://www.usaii.org/ai-insights/welcome-meta-ai-app-reimagining-digital-assistance>
- Van Zanten, J. A., & Van Tulder, R. (2018). Multinational enterprises and the Sustainable Development Goals: An institutional approach to corporate engagement. *Journal of International Business Policy*, 1(3–4), 208–233. <https://doi.org/10.1057/s42214-018-0008-x>
- Vadana, I. I., Torkkeli, L., Kuivalainen, O., & Saarenketo, S. (2019). The internationalization of born-digital companies. In A. Chidlow, P.N. Ghauri, T. Buckley, E.C. Gardner, A. Qamar & E. Pickering (Eds.), *The changing strategies of international business: How MNEs manage in a changing commercial and political landscape*, (pp. 199–220). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-03931-8_10
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science (American Association for the Advancement of Science)*, 359(6380), 1146–1151. <https://doi.org/10.1126/science.aap9559>
- Wang H. (2024, May 07). Achieving Financial Inclusion Through Digital Currencies. *United Nations Development Programme*. <https://www.undp.org/policy-centre/singapore/blog/achieving-financial-inclusion-through-digital-currencies>
- Weatherbed, J. (2025, February 04). Spotify finally turned a profit for a full year. *The Verge*. <https://www.theverge.com/news/605709/spotify-earnings-q4-2024-profitability>

- Weiss, R. (2025, January 09). Meta's content moderation changes closely align with FIRE recommendations. *Foundation for Individual Rights and Expression*. <https://www.thefire.org/news/metas-content-moderation-changes-closely-align-fire-recommendations>
- Wilkes, E. (2025, January 30). Taylor Swift's Spotify streams have the same carbon emissions as 20,000 households, claims new report. *MusicTech*. <https://musictech.com/news/industry/taylor-swift-streams-equal-carbon-footprint-of-20100-households/>
- Winder, D. (2025, February 23). Critical New PayPal Warning: Genuine Emails Used In Ongoing Attack. *Forbes*. <https://www.forbes.com/sites/daveywinder/2025/02/23/new-paypal-warning-hackers-use-genuine-paypal-email-in-ongoing-attack/>
- World Commission on Environment and Development. (1987). *Our common future: Report of the World Commission on Environment and Development*. Oxford, England: Oxford University Press. <http://www.un-documents.net/ocf-02.htm>
- Yang, B., Bai, W., Chen, Y., & Rong, K. (2025). Internationalization of digital firms: A systematic review and research agenda. *Journal of Business Research*, 189, 115124. <https://doi.org/10.1016/j.jbusres.2024.115124>
- Yang, M. (2022, January 14). 'Menace to public health': 270 experts criticise Spotify over Joe Rogan's podcast. *The Guardian*. <https://www.theguardian.com/technology/2022/jan/14/spotify-joe-rogan-podcast-open-letter>
- Yi, J., Li, J., & Chen, L. (2023). Ecosystem social responsibility in international digital commerce. *Journal of International Business Studies*, 54(1), 24–41. <https://doi.org/10.1057/s41267-022-00561-3>
- Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research. *Information Systems Research*, 21(4), 724–735. <https://doi.org/10.1287/isre.1100.0322>
- YouTube. (2025). *Our Policies*. <https://www.youtube.com/howyoutubeworks/our-policies/>
- Zaheer, S. (2024). The sustainability of MNE sustainability initiatives. *Journal of International Business Studies*, 56(4), 491–500. <https://doi.org/10.1057/s41267-024-00760-0>

- Zalando. (2025a, March 14). *Zalando Partner Program markets*. <https://partner.zalando.com/university/article/zalando-partner-program-markets>
- Zalando. (2025b). *Our Strategy*. <https://corporate.zalando.com/en/about-us/holistic-strategy-connected-fashion-world>
- Zalando. (2025c, March 06). *Zalando Sees Accelerating Growth This Year Following Strong 2024 Performance, Driven by Successful Execution of Ecosystem Strategy*. [Press release]. <https://corporate.zalando.com/en/investor-relations/zalando-full-year-2024-results>
- Zalando. (2025d, June 12). *Returns at Zalando*. <https://corporate.zalando.com/en/about-us/what-we-do/returns-zalando>
- Zalando. (2025e, March 24). *Logistics Capabilities at Zalando: How we create the future of scalable logistics for millions*. <https://jobs.zalando.com/en/blog/logistics-tech-capabilities-at-zalando>
- Zalando. (2025f, February 28). *Annual Report 2024*. https://corporate.zalando.com/sites/default/files/media-download/Zalando-SE_AGM-2025_1_Annual-report_2024.pdf
- Zalando. (2025g, June 12). *CSRD Digest 2024*. <https://corporate.zalando.com/en/people-planet/sustainability/sustainability-reports/csr-digest-2024>