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Exploring Design Principles for SME Complementor-Suitable Digital Platforms

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Abstract

Background: Some of the world's most valuable platform businesses rely on products and services provided by small and medium-sized enterprises (SMEs). Though, the modern digital platform economy is increasingly shaped by uncertainties and power asymmetries benefitting dominant platform owners and threatening smaller players participating as complementors in those ecosystems. Negative consequences include lock-in effects and platform dependency, exploitative participation terms and eroded entrepreneurial autonomy on the SMEs' side, which altogether harm the digital platforms' long-term viability, too. Addressing these issues, this paper investigates design principles for digital platforms taking SME complementors' needs into account.

Objective: This study investigates design principles for digital platforms that enhance suitability for SMEs as complementors, focusing on stakeholder-centric platform design approaches that better accommodate SME-specific needs and requirements. In this, this study aims to address current negative developments concerning imbalanced power dynamics and uncertainties emerging from platform owner-SME-partnerships in dominant digital platform ecosystems.

Methods: A qualitative reflective meta-analysis approach was employed, combining explorative expert interviews with SME specialists and a thematic literature review of SME platform design research. The methodology synthesized findings to identify meta-requirements and derive design principles through interpretive analysis.

Results: Eleven meta-requirements were identified and synthesized into four design principles: the principle of SME empowerment, the principle of open boundaries, the principle of transparent and fair participation terms, and the principle of reflection of individuality. In combination, these principles aim to inform future digital platform design that takes SME complementor needs into account.

Conclusion: The conceptual proposal of four design principles guides researchers and practitioners in creating SME-suitable digital platforms with stakeholder-centric design approaches. The principles enable digital platform models that accommodate diverse SME requirements, enhance participation experiences, and foster collaborative ecosystems tailored to SME characteristics and their operational contexts.

Index Terms

Digital platforms; Digital economy; Small and medium-sized enterprise; Design principles; Information system design; Business model design; Reflective meta-analysis; Digital business model.

1 INTRODUCTION

Small and medium-sized enterprises (SME) account for the majority of businesses worldwide (Statista, 2022) and form the executive backbone of many digital platform ecosystems (OECD, 2021).

Within such ecosystems, core actors like platform owners, complementors, and users interact with each other in a value network (Tiwana, 2013), co-creating value or facilitating value transactions (Gawer, 2021). SMEs, in particular, often incorporate the value-providing complementor role in these networks as they sell and provide products and services via platform-mediated channels (Deilen & Wiesche, 2021). In practical terms, global hotel booking platforms could not operate without individual hotels providing the rooms, and big food delivery platforms rely on many individual restaurants cooking the meals. Major benefits for such smaller complementors include access to the platforms' large customer bases, which may enormously drive- up sales volumes and visibility. Moreover, expensive core competencies like marketing, customer relationship management or information management can be delegated to the digital platforms.

However, over-reliance on platforms comes with threats, too. Due to power asymmetries between platform owners and complementors, partnership-exploiting and autonomy-eroding dynamics of platform-dependent entrepreneurship may unfold, making it increasingly difficult for individual businesses to bypass or leave the platform (Cutolo & Kenney, 2021; Harracá et al., 2023). Platform owners are inclined to take advantage of locked-in partners, as they change participation terms, increase prices, or enforce new market rules. In this, platforms try to secure competitive advantage by increasing user numbers and maintaining positive network effects (Eisenmann, 2006; Parker et al., 2016), while raising uncertainties and existential threats on the SME complementors' side (Asadullah et al., 2023; Micallef et al., 2023). Common coping practices of SME complementors affected by such exploitative dynamics include disintermediation, multi-homing, forming resistance against platform owners, and establishing platform-outsider relationships (Fitz & Scheeg, 2025a).

In light of such circumventing practices, it becomes clear that platforms owners risk being overthrown by counter-power movements if they accumulate and exert too much power over participants (Harracá et al., 2023; Thomas et al., 2021). At the same time, the fine balance between enhancing and exploiting SME value lies almost entirely in the hands of platform owners and sponsors who possess the power to make platform design choices and are accountable for implementing fair, adequate and responsible platform mechanisms and rules (Rahman et al., 2024).

In recent years, scholars have developed various tools to describe and conceptualize related design elements such as business models, strategic patterns and success factors (Eisape, 2019; Wortmann et al., 2023). However, the field of platform research has yet to address design knowledge that is not merely based on describing existing and/or successful cases (de Reuver et al., 2018). At the same time, as this study will highlight, digital platform designs taking SME stakeholders into account are frequently being proposed by researchers across business and information systems disciplines, yielding meta-analysis potential.

Hence, the intention behind this work is to contribute to the research quest for more SME-suitability in digital platform designs, especially concerning the relationship between platform owners and SME complementors, by outlining relevant design principles. Thereby, this study also aims to enrich the discussion on how platform owners may mitigate design-induced negative consequences for SME complementors in practice. In summary, the following research question emerges for this conceptual work: *What are design principles for digital platforms that suit the needs of small and medium-sized complementor enterprises?*

This paper starts with a background section, which portrays the scientific quest for design principles and the relevance of digital platform partnerships for SMEs, setting the conceptual scope for our work. After that, our methodological conduct of a reflective design meta-analysis will be detailed, followed by a summative report of findings, an interpretive synthesis of eleven design meta-requirements, and the proposal of four distinctive design principles. The paper concludes with a discussion addressing implications for practice and research and an outlook on future research opportunities.

2 BACKGROUND

2.1 Studying design principles

The interest in extending digital platform design knowledge through elaborating design principles is paradigmatically anchored in Design Science Research (DSR). DSR has emerged as a major guiding framework, especially at the crossroads of information systems (Hevner et al., 2004) and entrepreneurship research (Seckler et al., 2021) in the past two decades, providing a common ground for digital innovation design studies (Hevner &

Gregor, 2022). In this, formulating design principles is a specific form design knowledge production – so called λ-knowledge on design theories and design entities, compared to Ω-knowledge on phenomena and sense-making of the design space – to inform DSR projects (vom Brocke et al., 2020). Hence, design principles are tentative design science artifacts manifesting claims of accumulated design knowledge (Larsen et al., 2025). Such knowledge claims may have different directionalities, like claims of fact (true or false) or claims of policy (what should be done) (Beck & Stoltermann, 2016). In fact, there are several ways how design principles may be elaborated, represented (Böhmer et al., 2024; Schoormann et al., 2023) and (re-)used in DSR projects, further emphasizing their relevance for design theory and practice. Possible scenarios are (Schoormann et al., 2025):

- Adopting and validating existing design principles for similar problems and contexts.
- Maintaining design principles by refining or extending them in accordance with evolving needs.
- Updating design principles for compatibility with new enablers such as technologies.
- Recombining and transferring design principles across application domains.
- Recombining design principles for innovation to create novel, cross-domain solution designs.

While such knowledge chunks do not constitute design artifact instantiations *per se* (Baskerville, 2008), they are crucial to guide rigorous design processes and design artifact instantiations. Chandra Kruse (2025) highlights that design principles are dynamic and continuously developed through repeated processes of defining, using, evaluating, and improving them. In this, they also encourage designers to apply their own skills and critical thinking to assess the applicability of design principles in the context of individual design situations.

2.2 Digital platforms with SME complementors

From a systemic perspective, multi-sided digital platforms' value networks are often conceptualized as ecosystems, representing dominant organizational forms in the digital age. The dynamics within platform ecosystems are driven by the interplay of various actors and their distinct roles in digitally mediated value creation:

- **Platform owners:** Ownership determines key aspects of platform design, governance, and strategy (Hein et al., 2020). Ownership structures may be centralized, shared among multiple actors, or decentralized (Ladd et al., 2024). A distinction can also be made between platform sponsorship (control over architecture and intellectual property) and platform management (control over operations and interactions) (Parker et al., 2016).
- **Value provider / Complementor:** These actors deliver either core or complementary value to the platform. Some frameworks treat them as a single entity with varying levels of autonomy (Hein et al., 2020), while others distinguish between core providers (for instance, hotels on Booking.com) and those offering supplementary services (for instance, add-on services like airport-to-hotel transfers) (Sun & Gregor, 2023).
- **Consumer:** Generally viewed as demand-side actors, consumers engage with value offered on the platform (Hein et al., 2020). However, in some contexts (particularly social, content-driven, or review-based platforms) they also contribute to value creation (Heimburg & Wiesche, 2022).
- **Peripheral stakeholders:** Regulators, policymakers, society, incumbents, and other actors exist at the boundaries of the platform ecosystem, influencing its design and evolution (Wirtz et al., 2019).

Thus, dominant platform owners are usually the main orchestrators behind ecosystemized value co-creation, who control large parts of the customer relationships, data, and governance, even if important assets, processes, and risks are formally owned by complementing partner firms. In consequence, some SME managers see great opportunities in partnering with digital platforms, while others even perceive such collaboration as "necessary evil" (Fitz & Scheeg, 2025a). The issue has gained renewed urgency following the severe disruptions by the Covid-19 pandemic in the early 2020s, which exposed the vulnerability of SMEs in periods of uncertainty (Grant & Wunder, 2021). Recent literature highlights that while SME-specific constraints remain persistent barriers, scholarly efforts continue to focus on developing structured process models tailored to these limitations (Sagala & Őri, 2024). Key success factors repeatedly emphasized include strengthening organizational learning, aligning IT with business objectives, evolving leadership practices, leveraging digital marketing, fostering external partnerships, and integrating competitive innovation stimuli. Yet, many SMEs, especially those acting as digital platform complementors, remain primarily oriented towards operational excellence, with their focus on delivering quality products or services often outweighing strategic efforts in digital transformation (Mandviwalla & Flanagan, 2021). This orientation is rooted in the nature of decision-making within smaller firms, which tends to be emotionally driven, shaped by individual

competencies and experiential knowledge (Franco & Matos, 2015). In the case of family businesses, personal traits and socioecological factors further influence strategic decision-making (Franco & Prata, 2019). Nevertheless, the increasing dominance of digital platforms as opportunity providers for digitalization and growth implies that strategic adaptation is becoming a necessity. This has led to critical research gaps: how small value providers can effectively respond to new requirements in digital platform-based business, and how platform design can support such adaptation in a responsible and SME-suitable manner (Cutolo & Kenney, 2021).

3 METHODS

Among many possible modes of contributing through "design knowledge chunks" in DSR (vom Brocke et al., 2020), the here employed methodology focusses on design knowledge *advancement* (Gregor & Hevner, 2014), under the assumption that "there is less than optimal solution knowledge for addressing a relatively well-understood problem. The goal is to achieve a significant advance on existing knowledge for solving a particular problem." (Hevner & Gregor, 2022, p. 6). To achieve that, this article adopts a pragmatist-interpretivist DSR research perspective (Goldkuhl, 2012) and particularly follows Schoormann et al. (2023; 2024)'s *reflective meta-analysis* strategy with the aim to elicit design principles based on a review of previously designed artifacts. It is decoupled from any specific DSR project; thus, this method advances design knowledge as a base for future projects in the realm of digital platforms with SME engagement. In Schoormann et al.'s (2024) own words, "researchers reflect on projects to formalise knowledge ex-post or integrate different studies to arrive at a more general level of knowledge." (p.15), in line with Brendel et al.'s (2022) notion of design "theorizing by exploring" (p.15-16). Overall, the method choice is also motivated by the conviction that practice-oriented DSR contributions should aim for higher efficacy and utility of designed solutions in organizations (Peffers et al., 2018).

In particular, the here adapted method comprises a twofold investigation strategy aiming at insights on *what is designed* to inform *what should be designed* (Alismail et al., 2017). The overall process is visualized in Figure 1.

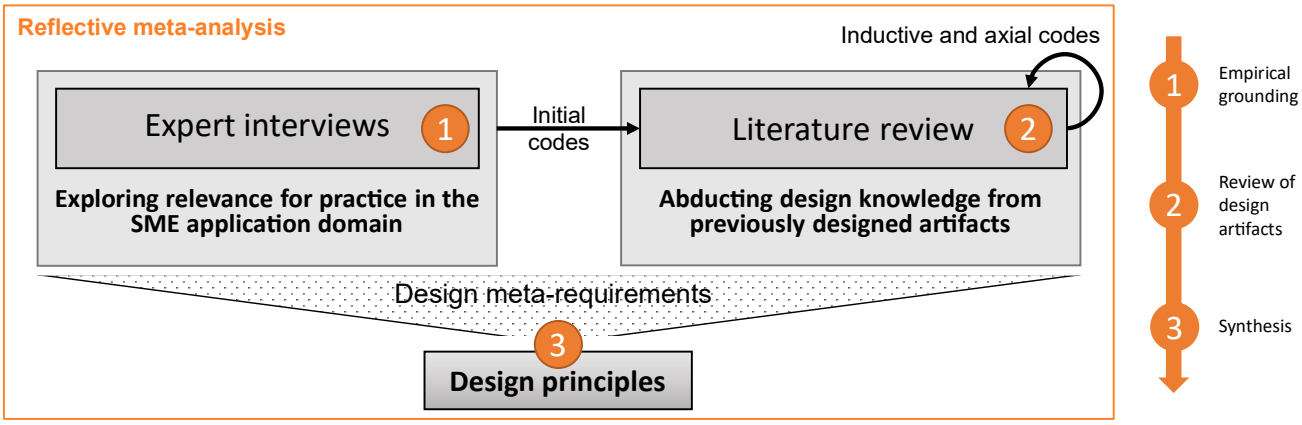

Figure 1. *Reflective meta-analysis process based on Schoormann et al. (2023, 2024).*

In step one of the reflective meta-analysis, expert interviews provide explorative insights into the addressed application domain, namely digital platform business with SME partnerships. Within the reflective meta-analysis method, these interviews serve as means for *empirical grounding* (Schoormann et al, 2024), in extension to prevalent background knowledge, and shall yield initial themes for the subsequent review of instantiated design artifacts in step two. Thus, the expert interviews are of non-exhaustive and exploratory nature, serving as indicators of relevant themes from a practical viewpoint. This is in line with recommendations on combining empirically captured insights from the application domain in the development of design meta-requirements (Strohmann et al., 2023). Two anonymous experts were sourced among active members of an OECD-auspiced association focused on SMEs. They hold leading positions in regional SME associations, influence policy-making and possess extensive knowledge and experience in supporting SMEs within their respective regions; one based in the Association of Southeast Asian Nations (ASEAN) region, and one in Germany. Prior to conducting these interviews, a thematic guideline was designed to streamline the inquiry. The guideline examines how SMEs adopt digital platforms as part of their wider digital transformation, identifying key pull factors, adoption barriers, and the risks and opportunities they encounter in platform ecosystems. It also considers how providers can become more SME-friendly by reducing risks, boosting

opportunities, and helping SMEs build sustainable, resilient business models through platform-based collaborations. Bogner (2009)'s recommendations for conducting exploratory, dialogue-oriented expert interviews were followed.

In step two of the reflective meta-analysis, a systematic literature review is conducted, targeting existing design artifacts described in previous design projects. The literature search followed a structured approach with the goal to synthesize the findings descriptively (Paré et al., 2015) on a key concept level (Webster & Watson, 2002). First, all abstract-, title- and keyword-based results for *"design" AND ("SME*" OR "small and medium-size*" OR "small business*") AND ("digital platform*")* were prompted from all Scopus and Web of Science databases. The outcome (n=147) was filtered for articles from scientific journals and conference proceedings in English (n=98). Consequently, all articles addressing the design of a digital platform in an SME stakeholder context were extracted based on fitting titles and abstracts (n=26). Considering reflective meta-analysis goals, the latter extraction step followed the strict objective to limit the article collection only to previous design knowledge work. In addition, only papers from journals within Q1 or Q2 SCImago Journal Rank quartiles (SCImago, n.d.) and information systems conference proceedings listed in VHB Publication Media Rating 2024 (VHB, 2024) qualified for further consideration (n=17). Lastly, three duplicates were identified and removed. Hence, 14 articles remained for thematic analysis, representing 14 design artifacts to abduct design meta-knowledge from (Cronholm et al., 2023). Building upon six initial themes mentioned by the experts in step one for a latent and deductive-first approach, the full texts were thematically analyzed MAXQDA Analytics Pro software following Braun & Clarke's (2020; 2021) guidelines for reflexive thematic analysis. In this, preliminary codes are utilized as an "interpretive lens through which to code and make meaning of the data" (p. 57). Altogether, six axial codes linked to the experts' input emerged from the deductive-first approach and three new first-level codes were identified through inductive reflection, resulting in nine identified themes across the reviewed design literature.

In the third and last step of the reflective meta-analysis, a reflection on the nine themes emerging from the two previous steps leads to the identification of 11 design meta-requirements, which are then synthesized into a proposal of four design principles. The design principles are finally documented following Gregor et al.'s (2020) established template.

4 RESULTS

4.1 Empirical grounding: Initial themes emerging from expert interviews

Expert 1, ASEAN context: To begin with, one fundamental requirement discussed by the expert is adaptability to local markets and cultures. SMEs operate within distinct local environments, and digital platforms must be tailored to reflect these specificities rather than adopting a one-size-fits-all model. The expert cited successful platforms in Southeast Asia that adapted to local preferences by offering features like motorbike rides and cash payment options, which resonated with local SMEs and their customers. Another critical consideration is ease-of-use and low barriers to entry. According to the expert, platforms should be intuitive and accessible, especially for SME actors with limited digital skills. Many traditional SMEs, especially those sequentially adapting to the digital economy, require basic digital training to become familiar with day-to-day platform operations. Lowering these barriers through onboarding support is essential for widespread SME adoption.

The expert also stresses the importance of affordable and transparent pricing. Excessive platform fees and commissions can discourage SMEs from participating, as these costs inhibit profitability. Too high commission fees and monopolistic behavior are major concerns that can make platforms less attractive to small businesses. Therefore, the expert recommended that platform pricing structures be reasonable and transparent. Protecting SMEs from exploitation, fostering competition and avoiding lock-in effects is another crucial design principle highlighted by the expert. Platforms should not abuse their dominant market positions or directly compete with the SMEs operating on their own platforms. On top of that, the expert shared their opinion that regulators should actively work to ensure a level playing field and prevent anti-competitive behavior that could undermine SMEs' chances of success.

The expert notes that access to broader customer bases is a key driver of platform adoption and participation for SMEs. Additionally, they emphasize the importance of integrating financial services. Many SMEs, especially in developing regions, lack access to traditional banking services. By integrating financial solutions like micro-loans or

micro-insurance, platforms can help SMEs bridge the financing gap and support their business growth. In general, the expert emphasizes that financial inclusion plays a decisive role in the overall value proposition of digital platforms for SMEs. Finally, fostering digital skills and literacy is essential for long-term SME success in the platform economy. The expert suggested that partnerships between platforms, governments, and development organizations could serve as instruments for creating broader initiatives to improve digital literacy and skills among SMEs. Such initiatives would help SMEs to cope with digital challenges while enhancing competitiveness.

Expert 2, German context: In the context of German SMEs, a major requirement raised by the expert is the need for transparency and objectivity in platform algorithms. In this, SMEs require clarity on how platforms rank and list their products or services, as non-transparent algorithms may disadvantage smaller players in favor of larger competitors. For SMEs, understanding how they are listed on platforms is crucial for their positioning and visibility within the wider ecosystem. Additionally, the expert underscores the importance of ease of switching between platforms. SMEs should not be locked into a single platform, as high switching costs can stifle competition and restrict their business options. To remain competitive, SMEs must be able to migrate seamlessly between platforms without facing prohibitive costs or technical barriers. Another consideration concerns the need for balanced competition among platforms. The expert points out that the presence of multiple competing platforms fosters healthier market dynamics for SMEs. A monopoly or duopoly situation can result in unfavorable terms for smaller businesses, as platform owners may use their dominant position to exploit locked-in partners by changing terms or increasing fees.

Furthermore, verified and curated offerings are highlighted as essential for platform trustworthiness. According to the expert, SMEs benefit from platforms that implement verification processes for providers and establish review systems based on actual transactions rather than relying on unverified ratings, ensuring that legitimate actors are rewarded, and credibility is maintained within the platform ecosystem. With regards to the diverse needs of SMEs, the expert recommended customization and flexibility in platform design. Platforms should allow SMEs to tailor their offerings and adapt to changing market conditions rather than imposing rigid structures. This flexibility is vital for SMEs to remain responsive in dynamic and evolving markets.

Table 1. *Theme exploration summary.*

Theme	Description	Exemplary Quote
Adaptability / Customization	Taking local and cultural SME specificities into account and promoting customizable offerings	"So one [platform] is called *Grab*, and it started like a Southeast Asian *Uber*. And the reason why it was a bit same, same, but different is that of course they were using cars but they were also very much using motorbikes […] or in some cases […] rickshaws, tuk tuks. So, they also partner with this kind of, you know, micro entrepreneurs." (Expert 1)
Controllable pricing	Avoiding excessive prices for platform use, promoting SMEs' financial resilience instead of (quasi-monopolistic) exploitation	"Now we don't really have a monopoly situation, but you would still have to show me the kebab shop, which, if you order directly from them, doesn't offer a lower price, even with delivery, than via *Lieferando*. So, some of these are also aspects where I think one or the other medium-sized company in the food sector is not quite happy about the platform and would actually prefer a little more competition or better competition for themselves." (Expert 2)
Low entry barriers / Ease-of-use	Accessible platform functionalities considering users with low digital literacy and skills	"People were teaching [the SMEs] how to go on Instagram and, you know, advertise either the dishes or the textile they were selling on Instagram. And I know that for us it looks something very basic. But for that kind of firms, it could be very transformational. So, I think maybe one of the lessons is that when we think about digital skills, especially in emerging markets, it doesn't need to be always cloud computing. I mean, there are other types of very basic digital skills that nevertheless can be very transformational for SMEs." (Expert 1)
Supporting services and empowerment	Including services for bridging financial gaps and digital skill gaps, fostering long-term digital economy resilience in SMEs	"In some cases, [the SMEs] are even partnering with the platform themselves to do the training, like Tokopedia. This kind of Indonesian Amazon, they entered in a partnership with the Indonesian Ministry for SME and Creative Economy, to train a lot of SMEs to go online and sell on Tokopedia. I mean, it's good because obviously the government doesn't spend a lot of money. They just do the partnership with Tokopedia and they train the SMEs. They explained the SMEs what it means, what you know, what is marketing online, what are the benefits of joining a platform." (Expert 1)
Trustworthiness / Veracity	Aiming at well-curated, -verified and -legitimized platform actors and transactions, limiting harm caused by fakes	An SME is actually distinguished […] by the fact that it offers, let's say, a better product or a better service, a better sales pitch than the big industrialist or the big competitor. And if they then have a platform, *Taskrabbit*, for example, where, as a certified company, […] you somehow get bad ratings and the rating system is not really verified. And then you suddenly have 1.5 stars with 40 reviews. But someone else, who doesn't even have a certificate, offers their services and you appear right next to them on the list, then that's not good. The platforms actually want to present quality and differentiate themselves. But then they don't have a proper rating system. That doesn't work." (Expert 2)
Transparent algorithms	Enabling transparency and objectivity of listing and ranking platform algorithms	"There are few very large platform providers who operate really on a global level, and they benefit from gathering a lot of knowledge on one platform. And there, of course, it's challenging for SMEs to find their place. Some offers always come up first and the question is, how are they being listed. It's not just about the price, in general, but based on some recommendation. And what is the recommendation based on? That's the question, of course." (Expert 2)

In addition to global platforms, the expert stresses the need for regional and specialized platforms. Such platforms, which cater to local or industry-specific needs, can provide SMEs with better-suited environments to operate in. Regional platforms, in particular, may offer closer alignment with local market dynamics, which global platforms may overlook. Another desirable principle discussed is the importance of reasonable fees and costs. SMEs, with their

often-limited resources, require platforms that offer fee structures enabling them to remain profitable. Excessive fees can diminish the financial viability of SMEs, forcing them to reconsider their platform partnerships. Lastly, adaptability and resilience were underscored as key characteristics that platforms should support. In today's fast-changing digital landscape, SMEs must be able to swiftly adjust their business models and strategies. Platforms that enable such agility will help SMEs remain competitive and responsive to market shifts. Table 1 summarizes the obtained expert knowledge input for the subsequent thematic analysis process.

4.2 Review of digital platform design artifacts from literature

To start with, the first-level codes derived from the experts' six initial requirements led to the identification of six contextually nuanced themes in the literature base: Trustworthiness and curation quality, recommendation algorithm transparency, empowering SMEs by enhancing capabilities / integrating auxiliary service, affordable pricing for SMEs and transparent revenue models, capability-aware design and ease-of-use for SME users, and adaptability to specific SME needs and context. In addition, three inductively coded themes were identified: platform openness for SME-supporting third-party developers, fostering co-opetition among SME complementors, and SME participation in platform design. Table 2 represents the final concept matrix. Besides, the median publication year of articles in this collection is 2022, demonstrating timeliness of the underlying design challenges.

In this, the most prominent theme revolves around the empowerment of SME complementors towards more resilience in the digital economy, especially based on the design of capability-enhancing features and auxiliary services that compensate SME managers' lack of skills, digital mindset or resources. Bhargava et al. (2022) highlight that platform owners may take a conscious, market-driven decision to reduce their own power surplus and instead focus on profiting from successful complementors' shared revenues. This success can be built on the design of platform-driven initiatives facilitating SMEs' digital transformation efforts (Candelo et al., 2022; Hönigsberg, 2020), knowledge accumulation, sharing and integration (Asadullah et al., 2020; Guo et al., 2023) as well as business model innovation (Budde et al., 2024) and digital economy mindset development (Neff et al., 2023; Tolani et al., 2020). Moreover, auxiliary services like innovation-accelerating cooperation between SMEs and platform owners (Wu et al., 2022) and access to financial resources (Pussinen et al., 2023) enhance resilient SME digitalization within platform ecosystems.

Table 2. *Concept matrix based on identified digital platform design themes in literature.*

Literature / key concepts	Platform openness for SME-supporting third-party developers	Fostering co-opetition among SME complementors	SME participation in platform design	Trustworthiness and curation quality	Recommender system algorithm transparency	Enhancing SME digital resilience through support and services	Controllable pricing for SMEs and transparent revenue models	Capabilityaware design and ease-of-use for SME users	Adaptability to specific SME needs and context
Asadullah et al. (2020)				X		X			
Bhargava et al. (2022)		X				X	X		
Budde et al. (2024)				X		X			
Candelo et al. (2022)		X	X			X	X	X	
Costa et al. (2020)		X	X			X		X	
Drewel et al. (2021)			X	X					X
Guo et al. (2023)		X				X			X
Hönigsberg (2020)		X			X	X			X
Liu et al. (2022)	X			X				X	X
Neff et al. (2023)			X			X			X
Pussinen et al. (2023)	X			X		X			
Tolani et al. (2020)	X					X	X	X	X
Wu et al. (2022)		X	X			X		X	X
Yoon et al. (2021)				X				X	
Count	*3*	*6*	*5*	*6*	*1*	*11*	*3*	*6*	*6*

In terms of platform design adaptability, a frequently raised aspect concerns local and regional environments, including cultural, political and economic specificities to be considered as moderating variables of platform design-SME compatibility and adoption (Drewel et al., 2021; Neff et al., 2023; Tolani et al., 2020; Wu et al., 2022). Furthermore, it should be considered that the individuality of SMEs is also reflected by the offers they want to place

on platforms, the strategies they follow with online representations and external influences. Hence, flexibility regarding custom channel configurations and trend-or crisis-responsiveness is an encouraged design characteristic (Guo et al., 2023; Hönigsberg, 2020; Neff et al., 2023).

Regarding curation quality, design requirements for B2B platforms stood out in the analyzed literature. Information and matching quality are paramount for SMEs on B2B platforms, unlike B2C platform success metrics such as user quantity and network effects (Budde et al., 2024; Pussinen et al., 2023; Yoon et al., 2021). Trustworthiness, on the other hand, may be earned by platform governance setting entry rules for trusted actors and minimum quality standards for interactions with SMEs and offerings (Asadullah et al., 2020; Drewel et al., 2021; Liu et al., 2022; Pussinen et al., 2023).

Two facets in diminishing accessibility and usability barriers for SME users were identified. For once, authors declare that infrastructure, especially user interfaces, should be seamless and easy to use and avoid information overload, even though these criteria are not further elaborated (Candelo et al., 2022; Liu et al., 2022; Tolani et al., 2020; Yoon et al., 2021). On the other hand, varying capability levels among SME managers should be taken into account (Costa et al., 2020). Seeing that platforms may be used as digital knowledge sources by SMEs, the design of structured and guided information retrieval functionalities is especially relevant (Wu et al., 2022).

Some authors suggest that cooperation between competing complementors and between complementors and platform owners are favorable for platform ecosystems as synergies are leveraged through shared information and knowledge, leading to greater innovation speed among participants, transparency benefits, boosted visibility of new platform offers and attraction of new buyers (Bhargava et al., 2022; Candelo et al., 2022; Guo et al., 2023; Hönigsberg, 2020; Wu et al., 2022). In particular, newly developed platforms with coopetitive communities may provide a base for smaller businesses to unite in collective action against dominant platform threats and challenges (Candelo et al., 2022; Costa et al., 2020).

Adding to these suggestions, another SME-empowering option emerges along the platform design process through participatory approaches. Systematic methods like pattern-based innovation workshops enable the inclusion of smaller platform complementors in development steps as influencing associates (Drewel et al., 2021) and aware platform owners of SME-specific needs and synergy potentials (Costa et al., 2020; Neff et al., 2023; Wu et al., 2022). If deemed beneficial for SMEs' entrepreneurial survival of digital economy challenges, managers were observed to willingly contribute to platform co-design and promotion (Candelo et al., 2022).

Unsurprisingly, free platform usage with direct payments and no commission charges is the most favorable scenario for SME complementors (Candelo et al., 2022). Depending on the platform owner, which might be a governmental institution funded by tax money, or which might rely on a hidden revenue model like large social media platforms, such free-of-charge platform business models exist – however, they yield other risks like path dependencies that lead to lock-in effects (Tolani et al., 2020). After all, even with generous platform owners who let smaller complementors thrive through a differential, rate-based revenue-sharing design, "the platform is often the biggest winner" (Bhargava et al., 2022, p. 8257). In sum, the authors explain that subsidizing small actors through lower rates helps them compete with larger players in a platform ecosystem – which in turn increases overall productivity, thus user traffic and revenue.

Platform openness played another minor role among the analyzed themes. Researchers suggest inviting third-party developers of tools and services (Liu et al., 2022), or powerful stakeholders and investors (Pussinen et al., 2023; Tolani et al., 2020) to platform interactions that generally support SMEs in the entrepreneurial and managerial transition onto digital platforms. Finally, algorithm transparency, as originally suggested in the second expert interview, was only mentioned once in the context of a mutually shared knowledge base among platform participants for the implementation of recommender functionalities (Hönigsberg, 2020).

4.3 Synthesis

The reflective meta-analysis process began with exploratory expert interviews to identify initial themes as practical indicators, which then helped to identify these themes across design instantiations reported through literature. Six themes aligned between the experts' initial input and the analyzed literature: adaptability/customization, controllable pricing, low entry barriers/ease-of-use, supporting services/empowerment, trustworthiness/veracity, and transparent algorithms. Three new themes emerged inductively from the literature alone: platform openness

for SME-supporting third-party developers, fostering co-opetition among SME complementors, and SME participation in platform design. Altogether, our exploration yields nine themes. Six of the nine themes map directly to one meta-requirement (MR) each, while three themes were split into two MRs each to better capture their distinct aspects: adaptability/customization yielded MR1 (local contexts) and MR8 (flexibility), supporting services/empowerment yielded MR5 (financial aids) and MR9 (skills training), and low entry barriers/ease-of-use yielded MR2 (usability barriers) and contributed to MR4 (transparency), altogether resulting in 11 MRs for comprehensive coverage before synthesis into design principles. Table 3 lists the final set of MRs and provides practical examples for design features. In this, MR1 addresses adaptability by combining experts' call for localized features with literature mentions of cultural-economic tailoring for SME contexts. MR2 builds on intuitive onboarding suggestions and yet instantiated capability-aware interfaces. MR3 on transparent pricing aligns concerns over exploitative pricing with affordability-oriented revenue models from literature. MR4 on algorithm transparency links calls for ranking clarity to instantiations of shared-knowledge recommenders. MR5 on auxiliary services integrates experts' financial inclusion ideas with exemplary resilience-enhancing features. MR6 on co-opetition emerges from literature-reported instantiations of enabling mechanisms. MR7 on trustworthiness combines the platform veracity requirement from practice with reported-on curation tools. MR8 on customization reflects flexibility needs matched with concepts of flexible platform configuration in literature. MR9 on capacity-building combines skill and literacy themes with knowledge hubs and support tools in instantiations presented by some of the authors. MR10 on third-party openness and MR11 on participatory design both emerge from examples in the literature.

To streamline the final design principles' structure, an established template comprising four components is utilized (Gregor et al., 2020): (1) aim, implementer, and user, (2) context, (3) mechanism, and (4) rationale. In the light of the present research question, *context* remains constant across all design principles: it is centred around the design of digital platforms working with SME complementors. Accordingly, *implementer* (platform owner) and *user* (SME complementor) remain constant actors, too. The remaining design principles' components – aims based on MR descriptions, mechanisms based on design feature examples, and rationales based on input arguments – are subsequently constructed based on combined sets of MRs.

Table 3. *Synthesized meta-requirements.*

Meta-requirement	Input from expert interviews	Input from literature	Synthesized description	Exemplary Design Feature
MR1: Adaptability to local markets	They emphasized that platforms catering to Southeast Asia succeeded by adapting to local market preferences, such as offering motorbike rides and cash payment options.	Platforms should reflect local and regional needs, offering flexibility to adapt to local conditions and allowing custom configurations based on individual market contexts.	Platforms must account for local cultural, political, and economic specificities to ensure compatibility with the diverse contexts in which SMEs operate.	Localized services, such as region-specific payment options (e.g., cash on delivery for Southeast Asian markets), to address the preferences of local SMEs and customers.
MR2: Ease-of-use and low barriers	They noted that many SMEs require simple and intuitive platform experiences. Offering onboarding support and basic training can ease digital adoption for SMEs with limited digital skills.	Simplified user interfaces and seamless interaction are key to SME engagement. Platforms must avoid overwhelming SMEs with information overload while addressing their capability levels.	Platforms should be designed to lower usability barriers, offering intuitive interfaces and support for SMEs with limited digital capabilities.	An onboarding process featuring interactive tutorials designed to guide SMEs through platform setup and operation.
MR3: Transparent pricing	They highlighted concerns over high fees and monopolistic behavior on platforms, suggesting pricing must be transparent and reasonable to encourage SME engagement.	Excessive fees and lack of pricing transparency deter SME participation. Affordable, clear pricing models are essential, preventing lock-in and promoting equitable revenue-sharing.	Pricing structures should be affordable and transparent to avoid discouraging participation by SMEs and to prevent lock-in effects.	A tiered pricing model that clearly outlines commissions and charges, giving SMEs the option to select a plan that fits their budget and business size.
MR4: Transparency in recommendation algorithms	They pointed out the need for transparency in algorithms, especially in terms of how products or services are ranked, to prevent smaller SMEs from being disadvantaged.	Algorithm transparency ensures that SMEs understand why their offerings are ranked in certain ways, which reduces the potential for unfair advantages favoring larger competitors.	Platforms must ensure transparency in recommendation and ranking algorithms to provide SMEs clarity on how their offerings are positioned.	A transparent algorithm explanation feature, where SMEs can see factors influencing their ranking and receive recommendations for improving their visibility.
MR5: Financial and auxiliary service integration	They stressed that platforms can provide significant value by integrating financial services for SMEs, particularly in regions where traditional banking services are limited.	Financial services, such as microloans or access to capital, help SMEs mitigate financial constraints and enhance resilience within platform ecosystems.	Platforms should integrate auxiliary services, including financial services, to help SMEs overcome constraints and foster sustainable growth.	An embedded financial service feature offering microloans directly through the platform, helping SMEs access needed capital to grow their businesses.
MR6: Initiatives for co-opetition among SMEs	n.a.	Co-opetition between SMEs encourages innovation, knowledge sharing, and collective resilience in platform ecosystems, enhancing visibility and growth potential.	Platforms should encourage co-opetition, allowing SMEs to collaborate and share knowledge while remaining competitive within the platform ecosystem.	A shared innovation hub within the platform where SMEs can collaborate on joint projects, share customer insights, and co-develop new offerings.

Meta-requirement	Input from expert interviews	Input from literature	Synthesized description	Exemplary Design Feature
MR7: Curation and trustworthiness	They emphasized the need for verified, curated offerings, suggesting that review systems should be based on actual transactions to ensure credibility and reward legitimate actors.	Trust is built through rigorous curation and verification mechanisms, ensuring only high-quality, legitimate SMEs participate, thereby boosting platform credibility.	Platforms should ensure high curation quality, verifying and curating SME offerings to foster trust and credibility within the ecosystem.	A verification system that checks buyers' legitimacy and implements transaction-based review processes to ensure authentic feedback and credibility.
MR8: Customization and flexibility	They pointed out that customization and adaptability are essential for SMEs to survive in dynamic markets, enabling them to react quickly to changes and tailor their services accordingly.	Flexibility in platform design allows SMEs to remain competitive by adjusting their offerings and strategies quickly in response to market trends or external influences.	Platforms should allow SMEs to customize their offerings and swiftly adapt to changing market conditions, supporting agility and resilience.	A customizable frontend feature that allows SMEs to adjust product displays, prices, and marketing strategies based on real-time market demands or seasonal trends.
MR9: Digital capacity-building support and knowledge sharing	They suggested that improving SMEs' digital skills and literacy is vital for long-term success, recommending partnerships to develop initiatives aimed at increasing digital literacy levels.	Digital knowledge-sharing functionalities are crucial for SMEs, enabling them to leverage platforms as sources of digital knowledge and capability enhancement.	Platforms should foster digital skills by providing structured knowledge-sharing tools and resources to support SMEs in navigating digital challenges.	A knowledge-sharing hub offering tutorials, guides, and resources that help SMEs improve their digital skills and better understand platform features and benefits.
MR10: Openness for third-party tools and services	n.a.	Opening platforms for third-party service providers enhances SME access to a broader range of tools, promoting business growth and more comprehensive service ecosystems.	Platforms should invite third-party developers to offer complementary tools and services that support SMEs' business operations and digital transformation.	An open API that allows third-party developers to integrate tools like CRM systems, marketing automation, or payment processing services, supporting SME operational needs.
MR11: Participatory design	n.a.	Involving SMEs in the platform design process ensures that their specific needs are addressed, which boosts engagement, innovation, and platform relevance to SME users.	SMEs should be involved in the platform design process to ensure the platform aligns with their unique needs and fosters more relevant and effective features.	A participatory workshop format for SMEs to directly influence new development directions and design features.

DP1: Principle of SME empowerment reflects MR2, MR3, MR5, MR6, MR7, MR9.

- *Aim:* Strengthen SME complementor resilience and digital capacities through knowledge sharing and tiered participation conditions.
- *Mechanism:* Provide guidelines and training resources for seamless onboarding, in addition to auxiliary services and financial support options; implement interfaces adaptable to varying digital skill levels and regional background; foster complementor competitiveness by offering a tiered pricing structure and promoting co-opetition among SMEs, alongside safeguarding platform experience through quality-curation and verification of actors and interactions.
- *Rationale:* Value co-creation on digital platforms that work with SMEs as important complementors is dependent on the performance and survival of these smaller players. Hence, empowering SMEs to become resilient and capable actors in this realm could be a measure to sustain a platform's value provider base and growth.

DP2: Principle of open boundaries reflects MR5, MR6, MR10, MR11.

- *Aim:* Create open platform boundaries fostering collaboration, co-opetition, and participatory design with and among boundary actors such as SME complementors and third-party providers of tools and resources.
- *Mechanism:* Facilitate technical third-party actor integration, strategically incentivize coopetitive initiatives, and encourage future development co-design through tools, events or workshops.
- *Rationale:* Openness promotes innovative input from third-party actors and adds fundamental platform value for SME complementors, while involving SMEs in platform design ensures compatibility with SME-specific needs in future development.

DP3: Principle of transparent and fair participation terms reflects MR3, MR4, MR7, MR11.

- *Aim:* Counteract the downsides of platform-dependent entrepreneurship by providing oversight and agreeing on reliable, fair and trustworthy terms of participation.
- *Mechanism:* Implement straightforward pricing structures and promote viable revenue-sharing models; ommunicate matching and curation mechanisms in clear terms; involve SME managers in future platform design and engage in partnership care.
- *Rationale:* With fair and transparent opportunities, SME complementors can thrive without fear of arbitrary platform owner behavior or hidden consequences. It fosters a competitive environment where success is

determined by merit rather than platform-driven restrictions, improving trust and long-term platform engagement.

DP4: Principle of reflection of individuality reflects MR1, MR2, MR8, MR9.

- *Aim:* Facilitate customized SME representation and adaptability to allow for context-aware modular configurations and flexible responses to dynamic conditions.
- *Mechanism:* Provide customizable interface and display options, enabling SMEs to represent their identity, present individual offerings and respond to trends; offer adaptability of these features for regional and market-specific needs as well as varying skill levels, so SME users can navigate platform functionalities intuitively.
- *Rationale:* SMEs, many of them pipeline-businesses, operate in segmented environments, each with unique demands, trends, challenges and opportunities that are addressed mainly through product / service adaptations. Moreover, users in SMEs have varied skills and backgrounds. A platform reflecting these individual characteristics allows SMEs to remain both flexible and authentic, fostering better platform adoption and engagement between SMEs and their customer base.

5 DISCUSSION

5.1 Theoretical Implications

As several analyses suggest, the growth and success of digital platforms may lead to good and/or evil consequences for stakeholders, industries, and the environment (Bonina et al., 2021; Cusumano et al., 2019), depending on strategic priorities and objectives of the accountable platform owners. The here performed reflection on SME-oriented designs shows that concepts for "good" digital platform features exist in forms of intentionally designed suitability for SMEs. The four proposed design principles condense these intentions, represented by MRs, into engageable guidelines.

From a holistic angle, the four design principles are related to general principles for digital transformation in SMEs. Hönigsberg et al. (2021) suggest five principles with a procedural view of SME digital transformation. In this, they highlight the importance of goal-oriented, iterative, cyclic and reflexive transformation projects, besides synchronized learning and transfer objectives aligned with the process. In extension to that, the here-elaborated MRs also contained proposals for a tiered platform design addressing different maturity stages of SMEs, together with a coopetitive environment that fosters learning through shared knowledge and collaboration. Emphasizing SMEs' need for networkedness in digital transformation initiatives also aligns with recent research. Drechsler et al. (2022) argue that SMEs should be understood based on their digital capabilities rather than just their size and turnover.

Towards DP1, the principle of SME empowerment, other researchers develop concepts and methods for integrating marginalized stakeholders' interests in platform business models (Ricart et al., 2020) or showcase best practices of entrepreneurs who have used digital platforms as a co-creation fast-lane to success (Cutolo & Grimaldi, 2023). Implicitly, DP1 may be seen as an abstraction of these contributions' underlying goals and re-emphasizes the potential merit of what Bhargava et al. (2022) call "doing well by doing good". Although Bhargava et al. (2022) acknowledge the seemingly self-inhibiting nature of generosity towards SME complementors, they stress positive and perpetuating effects on return-on-investment through so-strengthened and well-performing value providers. Theoretical implications may be derived in the light of SMEs' dynamic capabilities enhancement through digital platforms (Randhawa et al., 2021). In this, the type of skills and the type of enablement promoted through DP1 may vary depending on the direction of SMEs' strategic innovation paths (Heikkilä et al, 2017). Researchers concerned with SME digital transformation additionally highlight the role of sustainability and human-centricity for such transitions (Seppänen et al., 2025).

Furthermore, the open boundaries principle, DP2, complements research efforts on the effects of open innovation and co-creation in SMEs and their digital platform trajectory. Nambisan et al. (2018) conceptualize openness in open innovation platforms as inflows and outflows of knowledge, connected to collaboration opportunities and sharing risks. On the other hand, Spithoven et al. (2013) demonstrate that SMEs are especially dependent on open innovation and find that "although SMEs are less effective in generating new products and services through open innovation,

they do experience a substantial effect from the sales of new products/services generated through open innovation" (p.556), while also warning about risks such as like intellectual property conflicts. After all, DP2 proposes openness as a design principle to be specifically considered when partnering with SME complementors, extending general conceptualizations and design rules for platform openness (Gawer & Cusumano, 2015). Regarding theory on interplaying boundaries in platform ecosystems, Tiwana (2025) takes an evolutionary view of platform development, highlighting that exaptation (new functions arising from ecosystem interactions) occurs just as often as the more commonly studied adaptation (gradual refinement). This shift suggests that digital platform research is gradually moving from focusing on individual multi-sided business models as complex systems to exploring the broader complexity of multi-sided multi-entity platform ecosystems through a system-of-systems lens, which gives even more reason to explore viable opportunities and risks for complementors enabled by a principle of openness.

Additionally, the relevance of DP3, the principle of transparent and fair participation terms, is stressed by a broad empirical base on exploitative and unfair behavior of powerful platforms against smaller partners. Besides platform-dependent entrepreneurship (Cutolo & Kenney, 2021), this includes panoptic surveillance (Zuboff, 2015), platform owners entering competition on their own platform (Wen & Zhu, 2019; Zhu & Liu, 2018), emerging threats through platform acquisitions (Staub et al., 2022) and more. Following specific theory (Harracá et al., 2023), platform counter-power accumulates when a platform dominates its original field and expands towards others. In that sense, DP3 may be a tool to mitigate platform owners' risks connected to platform-power challenging movements. On the other hand, it seems expectable that SME complementors of the near future will become better at mastering and handling imbalanced digital platform power and its associated risks, making more sophisticated decisions on partnering up with platforms or avoiding them (Baden-Fuller et al., 2025). In this regard, platform design theory may soon be confronted with the need of extending its guidelines towards more stakeholder-centric practices such as value-sensitive design (de Reuver et al., 2020).

Lastly, the principle of reflection of individuality, DP4, reinforces the popular phrase coined by Welsh et al. (1982): "a small business is not a little big business". Particular limitations are often-mentioned distinguishing factors between SMEs and larger enterprises such as lacking resources, lacking skills, and smaller budgets impacting firm performance (Josefy et al., 2015). On top of that, strategic decisions are made and influenced by just one or a few responsible leaders in an SME, leading to various consequences connected to human factors. SME research has documented the influence of emotions (Culkin & Smith, 2000), personality traits and family (Franco & Matos, 2015; Franco & Prata, 2019), competencies (Eikebrokk & Olsen, 2007), cultural values (Tuukkanen et al., 2022) and more factors on SME decision-making. Following this, it seems unsurprising that the reflection of SME individuality emerges as a digital platform design principle. So far, digital platform theory lacks guidelines on how the intended consequences of platform adoption, such as connecting SMEs with flexible and fluid networks (Marzi et al., 2023), may be preserved, while mitigating unintended consequences, such as losing corporate identity, and losing loyal non-platform customers (Micallef et al., 2023).

Altogether, the here-articulated implications contribute to design-oriented digital platform research beyond platform-owner-centric designs, highlighting the theoretical significance of SME complementors' roles, needs, and acceptance. In this light, designing platforms for SMEs becomes not only a practical task but also a theoretical viewpoint from which dominant assumptions in digital platform ecosystem thinking may be re-examined..

5.2 Managerial Implications

The discussion on designing SME-suitable digital platforms opens up a thought space for considering how platform owners, SME managers, and other stakeholders might navigate conflicting objectives. For instance, inclusion of third-party services versus a lean platform core and efficiency, fostering open innovation and participation versus control, or fairness of pricing models versus growth acceleration. The principles, when applied, do not resolve such tensions themselves but make them visible and addressable.

In addition, platform designers in practice may look into alternative digital platforms working with SME complementors, who already implement the principle of SME empowerment (DP1) mechanisms, leveraging it for competitive advantage. Some of these alternatives advertise the empowerment mechanisms for small partner firms as a stand-out feature in contrast to mainstream platforms (Fitz & Scheeg, 2025b). Platform owners may also learn from the case of Finnish complementor businesses suggesting that collaborative modes of SME-platform-partnerships may also be beneficial for platform owners themselves, especially when they face increasing inter-

platform competition within multi-platform ecosystems (Mohamed et al., 2023). Allowing agency collaborations, for instance, is a practical example for such new forms of exaptation-based value exchange in platform ecosystems, which may help less innovative SMEs to improve performance (Kim et al, 2025). These examples support the managerial relevance of the open boundaries principle (DP2) when designing digital platforms that involve SME complementors.

Moreover, by maintaining a transparent, fair and integrative partnership, SME complementors become part of a platform's success story instead of opposing against it (Cutolo & Kenney, 2021). Today, the field of practitioners has already established strategic response patterns to platform owner moves (Kude & Huber, 2025). This underscores the value of the principle of transparent and fair participation terms (DP3) in shaping sustainable and mutually beneficial platform-SME relationships. Furthermore, the MRs accumulated under the principle of reflection of individuality (DP4) suggest that individuality-preserving platforms rather suit SME complementors' needs. To this end, practitioners designing future digital platforms should not under-estimate the influence of small business managers' lifeworld on platform usage behavior, as evidence suggests that these entrepreneurs are inclined to maintain their lifeworld, even when it opposes standards set by a platform (Sharafizad et al., 2025).

Finally, digital platform theory suggests that platform owners should envelop or buy user innovations before they gain too much traction to form a competitive threat to the platform (Parker et al., 2016). Looking at recent developments and initiatives towards cooperativism and its transformative potential in the realm of digital platforms (Balk, 2024; Papadimitropoulos & Malamidis, 2024; Zhang, 2025), future digital platform designers might want to look into incorporating this development and drive a potential new wave of digital platforms. Notably, platform openness is a sizeable strategic variable and manifestations of cooperativism, like shared assets, can be supported by simple measures such as non-contractual governance (Legenvre et al., 2022). While design principles for the specific case of cooperative digital platforms remain to be explored, the here proposed principles, especially DP1 and DP3, hold potential to guide such trajectories.

In sum, the implications outlined here indicate that platform design, when aligned with the lived realities of SME complementors, becomes a balancing act between strategic platform management, fair stakeholder integration, and long-term viability. Nonetheless, especially in digital platform ecosystems where SME participation is not peripheral, but core to platform success. incorporating the proposed principles might yield more resilient and sustainable digital platform models.

6 LIMITATIONS

This study is limited as a consequence of its methodological design and the results should be interpreted considering potential sources of bias. At its core, the study applies a reflective meta-analysis, in which empirical input is used to thematically streamline the reflection on previous design artefacts. Two expert interviews served as exploratory inputs for this purpose, leading to six initial codes used as an analytic lens in the subsequent reflexive thematic analysis process. Although both experts offered relevant, practice-based perspectives from international SME environments, the limited constellation inevitably narrows the spectrum of viewpoints represented. To this end, the potential presence of expert bias in this early phase of the study is acknowledged, as well as the potential for researcher bias throughout the process of reflexive thematic analysis. This includes interpretive decisions made during coding, as well as in the selection of literature databases and the application of inclusion and exclusion criteria for the literature review. These forms of bias, however, are inherent to qualitative analysis and synthesis methods, as they represent "a situated interpretative reflexive process" (Braun & Clarke, 2020, p.6), and were addressed through transparent reporting of all methodological steps.

Appliers of the here elaborated design principles should also take into account that reporting design principles through reflective meta-analysis may lead to the emergence of idealized scenarios (Schoormann et al., 2024). Hence, while the abstraction level of the design principles supports conceptual clarity and general orientation, it may not fully reflect the constraints and contingencies of specific platform contexts or real-world implementation environments. In this regard, though, it is important to note that "design principles are not static prescriptions, but evolving guidance shaped through cycles of articulation, application, reflection, and refinement. Their value lies not only in what they codify, but in how they invite designers to engage their own expertise and judgment." (Chandra Kruse, 2025, p. 7).

Further limitations are connected to the specific search and selection strategies applied in the systematic literature review. Despite conducted systematically, any selection process is inevitably limiting generalizability by adding contextual constraints. Nevertheless, the study's reflective procedures remain traceable and replicable, offering a clear foundation for future research. The resulting design principles constitute a conceptual model that invites empirical engagement and design instantiations. Future studies may test, refine, or adapt these principles across different digital platform ecosystems, SME environments, or stakeholder contexts.

7 CONCLUSION

Disentangling and transforming the relationship between digital platforms and SME complementors is a wicked problem to solve. From an economic perspective, both sides try to maximize revenue figures while being dependent on one another. From a strategic perspective, both sides try to gain a competitive advantage while being dependent on one another. And from an entrepreneurial perspective, both sides try to survive and innovate while being dependent on one another. In the light of widespread power asymmetry in platform ecosystems and the consequences of platform-dependent entrepreneurship, however, this mutual dependency can turn into a problematic position for SME complementors where platforms reach their goals while smaller partners struggle to cope with the inherent challenges. Arguably, SME-dependent platforms profiteering off this power asymmetry bite the hand that feeds them. Maltreated complementors are inclined to engage in defense strategies or avoid platform participation in the first place (Dellermann et al., 2016; Lan et al., 2019; Zhu, 2019). The present study has tackled this issue. Four design principles – the principle of SME empowerment, the principle of open boundaries, the principle of transparent and fair participation terms, and the principle of reflection of individuality – were identified and discussed.

Altogether, this study claims a knowledge-advancing contribution to DSR in the conjunction of entrepreneurship and information systems. Besides, it amplifies the voice of practitioners who face the challenges of power asymmetry in digital platform business. Both research directions, DSR on digital platforms, and SME-contextualized platform studies, are still nascent (de Reuver et al., 2018) and even rarer in combination. Hence, this article shall inspire and guide both practitioners and researchers involved in future digital platform design involving SME complementors. Future design-oriented research may solidify central assumptions for digital platform design in this context and develop a comprehensive framework. New studies may also analyze practical cases from the field, such as digital platforms that claim to be SME-friendly, and reflect on the suitability of yet instantiated design features. Besides reflection, new design science projects may be initiated to validate the viability, feasibility and desirability of SME-suitable platform design principles for various design contexts.

ADDITIONAL INFORMATION AND DECLARATIONS

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