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COOPE – A Framework for Managing Coopetition in the Platform Economy

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ABSTRACT

This paper presents a framework for coopetition in the platform economy that combines the two concepts through structured actions. Based on theoretical concepts, we elaborated a three-dimensional model that reduces complexity and provides decision support for building relationships with competitors in the following dimensions: (1) strategies for entering the platform economy, (2) design levels to enable a structural approach, and (3) perspectives to reduce complexity by being considered. The framework provides a theoretical model for decision-making by combining the different concepts and perspectives. Further, it helps companies to evaluate the potential of coopetition and realize it through appropriate design.

Keywords: Coopetition, Platform economy, Business innovation engineering, Strategy, SMEs

INTRODUCTION

Over the last 20 years, platform business models have become increasingly important in the global economy. They offer great potential for value creation through digital or digitally enhanced products. Using digital platforms, companies can achieve significant network effects and connect with different user groups. Traditionally, companies that plan to offer new products have a choice between (partially) making or buying them. However, companies planning to enter the platform economy have an additional option. They can join existing platforms with the intention of buying or distributing their own products or services. The options shown have different disadvantages regarding risk, cost, and governance. To reduce these drawbacks, the "coopetition" approach is a promising innovative option for smaller players such as SMEs or start-ups (Velu, 2018).

Despite obvious advantages, "coopetition" confronts companies with challenges. Finding the right balance between intensive collaboration and competitive thinking is crucial. The framework presented in our paper provides an approach to evaluate the potential of various options for coopetition as a basis for strategic decision making.

STATE OF THE ART

Understanding Coopetition

The term "coopetition" describes the relationship between at least two parties that includes both a cooperative element, in which companies pursue a

common goal and work together, and a competitive element, in which they compete with each other, regardless of their former competitive position (vertical or horizontal) (Bengtsson and Kock, 2014; Bruhn and Hadwich, 2019). The intensity of the cooperative and competitive aspects between companies can vary significantly in a coopetition. Different types can be distinguished depending on the intensity of these aspects (Luo, 2007; Chin et al., 2008). To successfully develop coopetition-based innovations, a balanced relationship is needed, which is optimally characterized by a high degree of cooperation and a moderate-high degree of competition (Park et al., 2014). In order to strengthen trust and avoid future conflicts, the areas of cooperation and competition must be clearly defined and delimited (Brandenburger and Nalebuff, 2021; Bengtsson and Kock, 2000). If intensive cooperation exists, companies often deliberately reduce competition or relinquish market power in order to jointly improve their competitive position against third parties. Before engaging in coopetition, companies should therefore investigate closely whether and to what extent collaboration improves or worsens their own value proposition from the customer's perspective (Schiller et al., 2021). In a coopetition, it may happen that a company competes with the same solution for customers but relies on resources from their competitors or share their resources. A popular example is the case of Netflix and Amazon, where there is competition between Amazon's Prime Video business and Netflix's Streaming service. Meanwhile, Netflix uses services from Amazon Web Services, Inc (AWS) to provide the best possible streaming quality.

Understanding Strategies to Enter the Platform Economy

For platforms, other economic principles are decisive for success than for traditional businesses. Networks or ecosystems are crucial here, as the number of potential relationships increases exponentially the more participants are involved (Reillier and Reillier, 2016). This is described as a network effect, which means that a digital platform becomes more valuable the more participants use it. Platforms provide participants with (technical) infrastructure. Digital platforms act as intermediaries between the participants and change the basis on which business relationships function. Networking of participants and their interaction creates a digital ecosystem (Parker et al., 2016). Indirect network effects between participating groups on a digital platform describe the fact that the number and attractiveness of participants influence the platform's attractiveness for other participants. Therefore, the term "platform economy" is often used.

In the following we distinguish between following roles on digital platforms:

- Owner: Responsible for infrastructure and quality of a digital platform,
- Participant: Active actor on the platform, which can be:
  - User: consume or use the value created by and on the platform,
  - Provider: generate value on the supply side of the platform.

Companies planning to enter the platform economy can choose between different strategies, which, in ascending order, require more investment and

work on the part of companies (see Figure 1). Continuing with the traditional business model represents the first strategy. However, when making this decision, companies must be aware that the platform economy can turn industries upside down. New competitors can create new markets or establish an entirely new business model in the existing market (Parker et al., 2016). Thus, there is a high risk for the long-term future with this strategy. The second strategy is to join at least one existing platform as a participant. There are many reasons for joining a platform, such as increasing awareness (Cabrera, 2014) or using platform resources (Velu, 2018).

In addition, joining a platform allows for short development and ramp-up times and, thus, short-term opportunities in a rapidly evolving market environment. The third strategy envisions operating a platform itself. Here, companies face a "make-or-buy" decision. This strategy makes particular sense for companies if the platform is compatible with the company's other business models. Combining the different components of a company can lead to differentiation and improve or reshape the customer experience (Reillier and Reillier, 2016).

Relevance of Coopetition in the Platform Economy

Since entering the platform economy is often linked to high investments and risks, sharing these with market competitors seems to be a promising strategy.

If companies want to join the platform economy, they can pursue more than one of the above mentioned goals simultaneously. The context in which coopetition takes place can also be important. Here, a distinction can be made between physical context and digital context. In the following, five options for coopetition in the platform economy are outlined. The options outlined have different disadvantages in terms of risk, costs, and governance (see Figure 2).

- Companies that are partners in the physical context, for example, by mutually supplying important components or systems, can become competitors in the digital context through competing platforms.

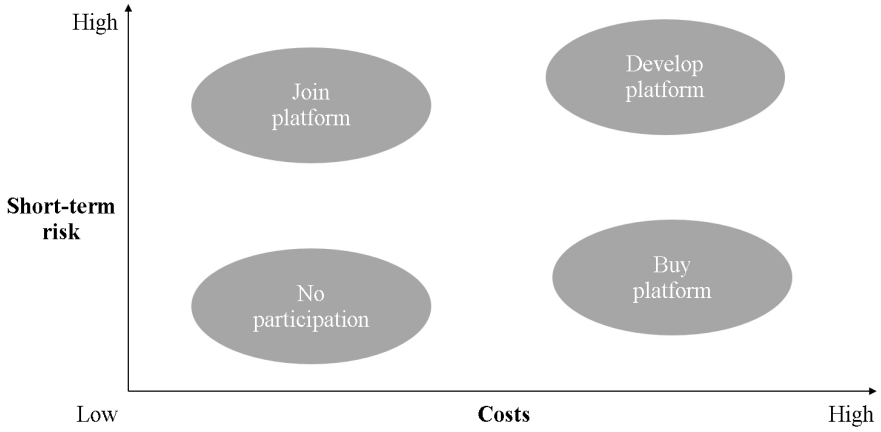

Figure 1: Strategies to join the platform economy.

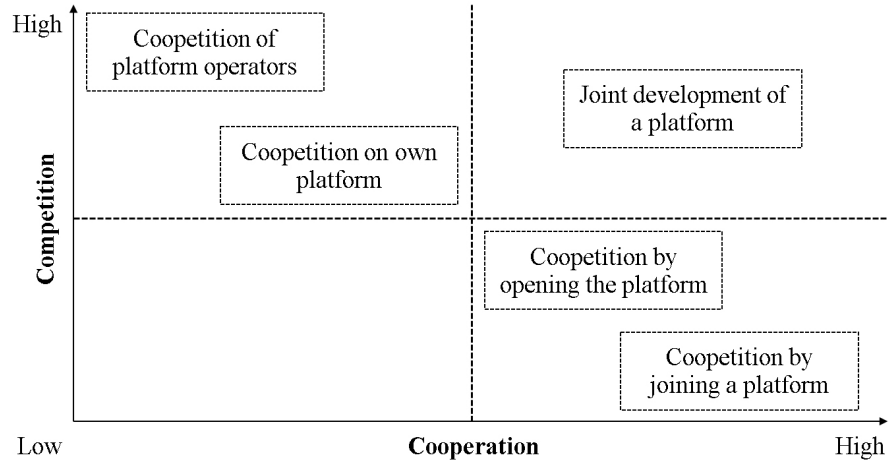

Figure 2: Types of coopetition (adapted from Luo, 2007; Chin et al., 2008).

- If a company decides to join the platform economy by buying or developing a platform itself, it has the option of opening up this platform to competitors.
- In addition, a platform operator can offer its own products or services on the platform and thus compete with the providers on its own platform.
- Suppose a company does not want to establish its own platform and a competitor operates an attractive platform with considerable network effects. In that case, the company should consider joining this platform as a participant. This decision can also be made if a company already owns a platform. Participation in multiple platforms is called "multihoming".
- Companies aiming to buy or develop a platform have the option to do this with competitors. In this constellation, companies jointly take care of the development and operation of the digital platform to minimize expenses. Since, in addition to generating network effects, technical aspects represent hurdles in setting up a platform so co-operation can make particular sense. For example, in infrastructure, interfaces, or basic services (Bullinger et al., 2017, Schiller et al., 2021). After the successful establishment of the platform, competition on the platform with products or services is possible.

One examples in this context is the ADAMOS platform, jointly operated by various providers from the mechanical and plant engineering sector as well as supporting software companies. Founded by DMG Mori, Dürr, Software AG, Zeiss, and ASM PT as a joint venture, ADAMOS GmbH became a vendor-neutral and platform-independent ecosystem. ADAMOS offers an integration platform (ADAMOS HUB) connecting data of machines with apps, a manufacturer-independent marketplace with integrated processes (ADAMOS STORE), as well as an optional IIoT platform that connects production processes, machines, and plants. Goal of the digital platform is to provide future-proof solutions to develop digital products and applications of IoT technologies for machine and plant engineering. To this end,

partners share apps, codes, prototypes and knowledge within the ADAMOS network and through ADAMOS services in order to create new ideas, services, and products. The focus is on developing solutions, e.g., in the form of digital apps, in a way that customers can design, develop and use them. The companies share the costs of the IT infrastructures (Schiller et al., 2021). Digital solutions can be offered independently on the marketplace while ADAMOS resolves legal and tax aspects. The supporting software companies can offer open and vendor-neutral platforms that do not approach the end customer. This protects customer and supplier relationships of potential participants (ADAMOS GmbH, 2023, Software AG, 2023). This strategy supports cooperation as well as competition.

The previous options do not claim to be exhaustive. However, they illustrate the complexity that of coopetitive situations within digital platforms. Various coopetition constellations have been identified by pursuing different platform strategies (see Figure 2). Based on this, three coopetition strategies can be differentiated for entry into the platform economy, which will be explained in more detail later.

APPROACH

A snowball literature search was conducted before developing the COOPE framework. In addition, the authors are members of a working group on the topic of coopetition, which consists of members from research and industry. As part of the working group, workshops were held with employees from various companies.

The goal of the framework is to lay a strong foundation for joining the platform economy through coopetition, thus helping companies successfully navigate the road ahead. In this context, the platform is considered as a business model rather than from the technical side. Based on theoretical concepts, a three-dimensional model was elaborated that reduces complexities and provides decision support for building relationships with competitors in the following dimensions: (1) strategies for entering the platform economy, (2) design levels that enable a structural approach, and (3) perspectives that reduce complexities by being considered (see Figure 3).

The three dimensions are briefly described in the following sections:

Platform Strategy: The model is limited to the question of how joining the platform economy can be managed. The strategies described above can be summarized in three strategy designs:

- Joining an existing platform of a competitor,
- Open the own platform to a competitor,
- Work together with a competitor to build a platform and then to compete on the platform.

Design Level: Once it is clear how the company wants to position itself through one or several coopetition strategies, it is important to design the value creation mechanisms. In this paper, we consider the platform as a business model which "mediates the link between technology and firm performance" (Baden-Fuller and Haefliger, 2013, p. 1). Therefore it makes sense

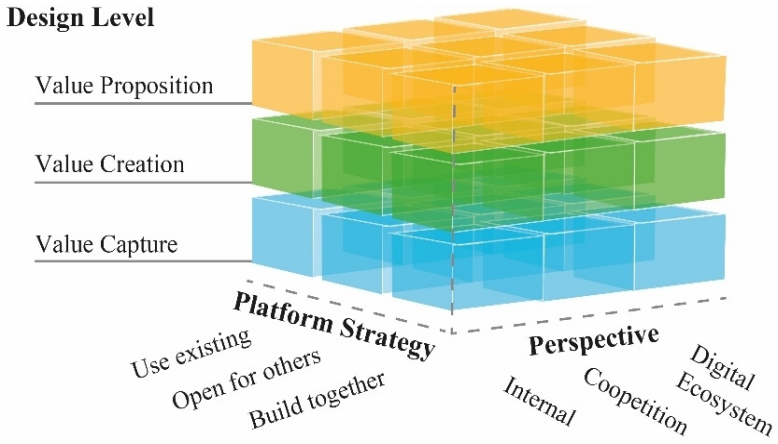

Figure 3: Framework for managing coopetition in the platform economy (COOPE).

to sub-divide the business model concepts into the following three elements to make it more applicable, easier to understand, and to establish:

- value proposition
- value creation
- value captures.

Perspective: The complexity created by the platform economy, in combination with coopetition, can be reduced by looking at different perspectives. On the one hand, companies should pay attention to internal activities, for example, in order to identify erroneous behavior. Looking at coopetition is relevant in order to analyze the tension between cooperation and competition and to be able to react accordingly. The digital ecosystem is of great importance for platforms as it generates value-creating (indirect) network effects. When entering into co-competitive relationships within the platform economy, the platform's digital ecosystem should therefore, also be included.

By combining the various concepts and perspectives, the framework provides a theoretical framework for evaluating the potential of coopetition and realizing it through appropriate design. The model is described in more detail below.

(1) PLATFORM STRATEGY

Coopetition within the platform economy can be linked horizontally and vertically along the value chain of the company and can take place at different organizational levels (Bahar et al., 2022; Bengston and Raza, 2016). In this context, three coopetition strategies can be differentiated for entering the platform economy. Based on the selected strategy(s), the targeted roles can be noted. These are divided into owners, providers, and users. The main benefit of a platform for all roles is usually the advantage of network effects.

Use existing: One option for companies is to decide to join a competitor's platform. When joining, the competitor provides the technical infrastructure and acts as the operator. Furthermore, the competitor can take on additional

roles on the platform. By joining, the company becomes a part of the extended ecosystem. Thus, the company can assume the role of a user or provider.

Open for others: If a company wants to buy or build its own platform, it can make sense to open the platform to competitors. An opening enables the competitor to join the platform as a user and provider. It is important to keep the benefit for the ecosystem in mind. The company itself can take on all three roles when opening up.

Build together: Companies can build or buy a platform with competitors to compete on it. Competitors can range from start-ups to established corporations. Not only is the technical infrastructure provided jointly, but an ecosystem must also be created. When competitors build a platform together, the company itself as well as the co-competitor can act in all three roles.

(2) DESIGN LEVEL

For this model the definition of a business model as "design or architecture of value creation, delivery, and capture mechanisms it employs" (Teece, 2010) is used in line with the nine building blocks of Osterwalder's business model ontology (Osterwalder & Pigneur, 2010). The classic view on business models is static. Coopetition requires monitoring and adjusting of business models due to the changing situation. Therefore this model follows the understanding of Demil and Lecocq (2010), who propose that business models are in a constant disequilibrium and transform over time, due to frequent changes of their interrelating components. Following, the three levels will be explained in detail (cf. Neuhüttler et al. 2020):

Value proposition: The model is concerned with the design of coopetition situations. While it is crucial to consider the customer during this process, this model offers the opportunity to look at value delivery topics like customer segments, relationships, and distribution channels through the "Digital ecosystem" and the "Coopetition" perspective introduced later. Therefore value delivery will just consist of value proposition and will be named "Value Proposition". The value proposition describes the value the company provides to its customers and (coopetition) partners.

Value creation: The value creation level describes how value is generated. It looks at the combination and coordination of different resources and capabilities and describes processes and activities. Additionally, a look at necessary partnerships and networks besides the coopetitive situation can be helpful.

Value capture: When a company enters a new market, it is important to understand how the value the company wants to provide can be monetarized. For this, a closer look at cost structures that are established with a platform and the design of revenue streams are essential.

(3) PERSPECTIVE

Many reasons lead to coopetition (Brandenburger and Nalebuff, 2021). In the context of the platform economy, these drivers can be translated into three perspectives. These are the internal, the coopetition, and the digital ecosystem perspectives. Looking at strategies and design levels from different

perspectives helps companies to reduce the complexities that arise from the diverse constellations of coopetition.

Internal: For companies, entering into coopetitive relationships is often associated with obstacles and bureaucratic hurdles. The "internal" perspective therefore deals with aspects in the internal environment of the company and can lead to profound changes. Furthermore, it can help the company navigate in the platform economy. Especially in areas far from traditional core competencies, collaboration with competitors can help companies to increase the speed of innovation and to be able to act proactively in dynamic markets (Neuhüttler et al., 2020). A company's own expectations and reasons for entering into partnerships can influence the form and scope of coopetition (Yami and Nemeh, 2014). For example, if a successful platform already exists in the targeted market, the potential economic benefits from network effects are greater than a competitive advantage or bargaining power (Parker et al., 2016). In the platform economy, the question should therefore be asked as to whether having one's own platform is in itself decisive for competition or whether the individual implementation of products or services and use of an existing platform would also lead to a significant improvement in one's own service offering.

Coopetition: The "coopetition" perspective deals with cooperation and competition aspects of relationships that arise in the context of the selected platform strategy. Relevant characteristics of partners may be complementary capabilities and resources that are useful to the company and distinctly different from its own (Luo, 2007). For example, it may be beneficial to build a platform with partners to develop technical infrastructures more quickly, as these are a major challenge for the company (Bullinger et al., 2017). Similarly, pursuing the same or similar goals can motivate companies to collaborate. Relationship characteristics such as interpersonal trust (Tortoriello et al., 2011) or the power relationship between companies can likewise act as drivers for coopetition relationships. Cultural similarities may also have an impact on entering and maintaining coopetition (Garraffo and Siregar, 2021).

SUMMARY AND OUTLOOK

Digital platforms offer compelling opportunities for companies to conduct business in a new and, in some cases, better way via digital business models. SMEs often shy away from the barriers to entry and investment required to adopt platform-based business models. In this context, coopetition offers a lightweight approach to attractive new market opportunities while sharing the risks and efforts between competitors collaborating on platform business.

Despite the potential, coopetition also presents challenges for companies. Because of the multiple strategic considerations and levels of design, they must make complex decisions to participate in the platform economy in the context of coopetition. To support these strategic considerations, we have presented the COOPE framework in this paper. It is intended to support companies to make strategic considerations when deciding whether or not to enter the cooperative platform business and how to design the coopetition

constellation according to the needs of the companies involved. From the distinct company's point of view, it is significant to consider the design levels of a business model and to mirror them with the perspectives on the partners of the coopetition and the extended digital ecosystem in addition to their own. When designing the content aspects, the stratgeic aspects and options must also be taken into account. Therefore, the framework concept structures the relevant design and action areas for companies along the three dimensions (1) strategies for entering the platform economy, (2) design levels to enable a structural approach, and (3) perspectives.

Future research needs to focus on possible weaknesses and gaps of our framework concept. First, the content of the framework concept needs to be provided: Researchers should make use of the structure to locate possible design recommendations, methods, and tools within it to facilitate access for organizations. Second, the meaning of the three perspectives and the elements they contain must be investigated through empirical observations. In the focus of further work, the relationship between the design variants and the success of coopetition in the platform economy should also be considered. As a third key point, the applicability of the framework concept should be tested in a concrete business case.

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