Introduction

The disruptive nature of digital platform ecosystems has not only changed the art of living but also transformed various industries. We define digital platforms according to Tiwana et al. (2010) that it has a core and modules, which interact through standardized interfaces. Platforms without extensible codebase and which operate as a mediator between users are not considered as platform (Reuver et al. 2018). Established firms like Google, Apple and Airbnb, for instance, have demonstrated the success of such transformations.

However, compared to other industries, digitization in healthcare is progressing at a slow pace (Hanseth and Bygstad 2015). There may be various reasons for this, ranging from the complexity of national healthcare systems to the fact that the market is highly regulated and the lack of interest among stakeholders to collaborate (Kohli and Swee-Lin Tan 2016). Yet healthcare hides a significant potential for digital platforms and innovative services. Digital platforms offer various benefits for it like reducing costs and facilitating communication between patients and health care professionals (World Health Organization and International Telecommunication Union 2020). Furthermore, it offers patients new remote ways to receive care.

By 2025 according to a study by Neumann et al. (2020), 12 % of the total healthcare spending would be spent on digital products or services, this will create a market worth 57 bn. € alone in Germany. In addition, we have an increasingly aging world population, by 2050 the number of persons over 80 years is expected to triple, from 143 million in 2019 to 426 million (Nations 2022). Therefore, the public healthcare system is going to face enormous pressure, because a high amount of health expenses are attributable to senior citizens (Federal Statistical Office 2022).

Considering this, designing digital platform ecosystems in healthcare, especially for elderly care, can be essential. To design such ecosystems that are advantageous to healthcare, one must first understand how such digital platform ecosystems emerge and what challenges start-ups as new entrants need to withstand while entering this market. Despite knowing the beneficial impact of digitization in healthcare. There is only limited knowledge about healthcare start-ups.

This research, therefore, addresses this gap by observing the dynamics and challenges of early-stage start-ups while orchestrating a digital platform ecosystem. Based on our observations in healthcare, we try to show how digital platform ecosystems emerge in highly regulated markets. Furthermore, this will enhance our existing understanding of the emergence of digital platform ecosystems.

The remainder of the paper is structured as follows: in the next section, we review the current state of research on new entrants in platform economies. In section three and four, we describe our preliminary framework and our approach. The outlook on further developments of the research project is provided in section five.

Literature Review

Previous studies have mostly studied the success of mature platforms like Airbnb, Apple or, Google (Reuver et al. 2018). The most common reasons are first mover advantages, their huge financial resources, and their use of superior technology infrastructure (Cusumano 2022; Gawer and Cusumano 2014; Murthy and Madhok 2021). However, many of these aspects cannot be ensured by new entrants as they do not possess similar resources (Murthy and Madhok 2021).

The existing literature does not assume that new entrants can build up a platform due to their low probability of surviving (Murthy and Madhok 2021). Nevertheless, it is precisely digital platforms that enable many entrepreneurs to compete with big players on eye level (Jacobides et al. 2018). The emergence of a digital platform is considered as successful if it survives the initial phase and attracts other participants and customers (McIntyre and Srinivasan 2017).

Digital platforms not only create new opportunities for entrepreneurship but also have changed various traditional industries and their boundaries (Nambisan 2017). Hence, this leads to many nascent markets. Nascent markets are rapidly changing environments, which are at an early stage of formation (Santos and Eisenhardt 2005).

While there is much literature on the difficulties of implementing digital solutions in healthcare (Braa et al. 2007; Hanseth and Bygstad 2015), little is known about the challenges of start-ups entering the

non-platformized healthcare market. The healthcare market is a highly regulated with complex transactions, therefore entering this market as a start-up is more challenging.

Another fact is that digital platforms evolve over time. Therefore, the dynamics that influence the overall process of emergence of digital platform ecosystems need to be examined. The findings of McDonald and Eisenhardt (2020) help us to identify some of the prevailing dynamics in nascent fields. This also highlights the importance of exploring the prevailing dynamics in those fields.

In the past, researchers mostly tried to analyze mature platforms success by generating insights by reconstructing their history. But most scholars do not focus on digital platform ecosystems that emerging in a nascent field. As de Reuver et al. (2018) emphasize, it is essential to generate a better understanding of the emergence of digital platform ecosystems in order to know its innovative and disruptive power in not yet platformized industries.

Conceptual framework

At this point, we want to present a preliminary conceptual framework (Figure 1). During the initial stage of our research, we anticipate that there are three important actors in the setting of the platform economy. The start-up itself with its platform, ecosystem participants and competing ecosystems.

We further assume that dynamics like environmental, market and institutional dynamics play a dominant role. Environmental dynamics consist of the impact of complementors on the platform ecosystem and the conditions of participants that it imposes on the platform owner (Tiwana et al. 2010). Market dynamics mainly refer to the competitive landscape of the platform economy and the impact of prices. Institutional dynamics considers the legal conditions imposed by legislators under which all actors of the platform economy need to operate. Entrepreneurial dynamics are defined as the processes of how entrepreneurs think, act and build up strategies while designing a platform. Nevertheless, we are open to discovering other dynamics at play besides these.

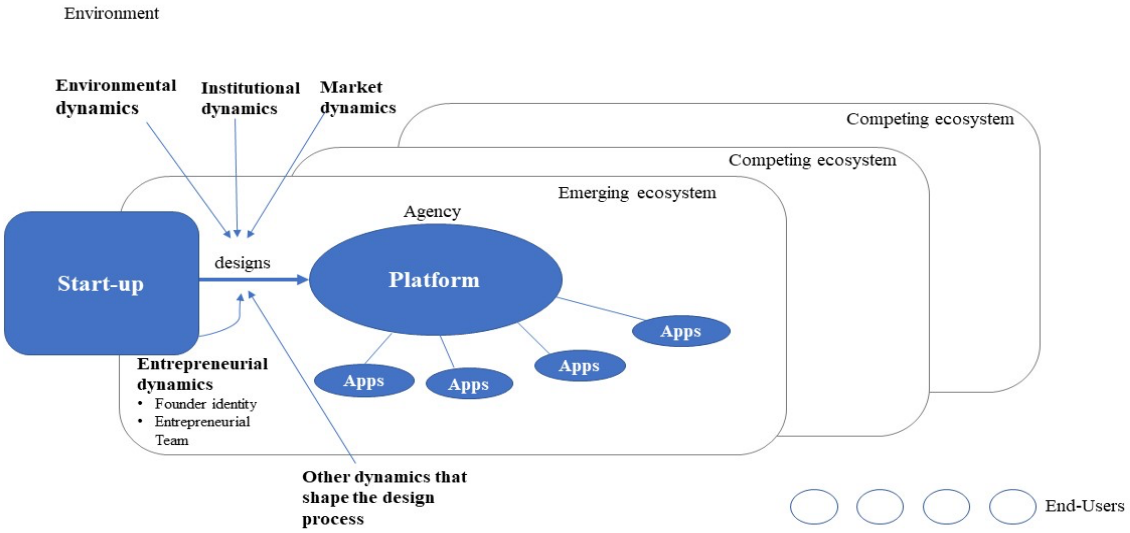

Figure 1 Preliminary conceptual framework

Method

In order to analyze the key dynamics that influence the emergence of digital platform ecosystems in healthcare, we conduct a longitudinal, ethnographical study. This method is suitable as we need to see below the surface, how an organization builds up a platform. Through Ethnography we observe the organization from the inside and generate insights from its perspective (Schultze 2000).

For this study, we selected two German early-stage healthcare start-ups. While one start-up aims at relieving the burden of family members of care recipients through digital care aids and digital technologies. The other start-up focuses on a digital collaboration platform for the care industry, primarily on relieving the burden of care facilities. Thus, both sides of the care industry would be covered by means of this study.

Concluding Remarks and Next steps

Our aim in this paper is to start a debate on the dynamics that are involved in the process of building up a digital platform ecosystem in healthcare. Furthermore, we wanted to point out the importance of focusing on start-ups, how they enter a highly regulated, non-platformized healthcare and orchestrate an ecosystem by withstanding various challenges. By closely observing the two start-ups we expect to uncover certain hurdles in the healthcare sector that prevent more start-ups from entering the market and which slows down the innovative power of such digital platform ecosystems.

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