Introduction to Managing the Dynamics of Platforms and Ecosystems Minitrack

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1. Introduction

It is well understood that, in order to compete and survive, organizations more and more consider platform- and ecosystem-centric perspectives, [1, 2, 3]. Today, digital technologies shape firm identities, physical and digital resources merge, and even traditionally physical industries become "digital first, e.g., [4, 5]. Platforms and ecosystems play a central role in the rapid emergence and proliferation of the technologies that afford this digital transformation, e.g., human-machine ecosystems, digital twins, cloud services, artificial intelligence, 5G.

Although understanding the value and importance of platforms and ecosystems across various industries and domains has grown significantly over the years, there is still a paucity of research examining the dynamic and evolutionary aspects of platform and ecosystem management [6, 3]. Building on the experience from prior installments of our minitrack, we called for contributions that focus on the "dynamic" aspects of platforms and ecosystems. How do platforms and ecosystems emerge and what are the mechanisms driving their evolution? How do platforms and ecosystems adapt to changes in the technological, social, economic, ecologic, or political environment? How can specific platform and ecosystem actors succeed within these dynamics and manage even unintended consequences?

2. The 2022 minitrack

We were delighted to receive twenty-nine (29) papers from author groups in Asia, Australia, Europe, and North America. With the support of 89 outstanding reviewers, we finally accepted twelve (12) papers for publication, out of which one was withdrawn by the authors. We thank the reviewers for their constructive and valuable comments, which inspired all the authors, as well as the organizers.

Most submissions have adopted established conceptualizations of digital platforms, regularly referring to transaction and/or innovation platforms [7, 6]. Instead of solely focusing on singular platforms, however, multiple submissions described platforms as a widely adopted type of organization that dominates industries or the economy in general. While all papers provide contributions in their own significant ways, submissions take diverging perspectives on studying this phenomenon. We decided to accept a wide variety of methods exploring dynamics of platforms and ecosystems, including conceptual, quantitative, qualitative, and design-oriented studies. While platform research has long been empirically dominated by business-to-consumer contexts, it is noteworthy that this year's studies also involve multiple platforms in business-to-business domains and even platforms in the sciences. Three major themes emerge from the accepted papers showing (1) how infrastructures shape dynamics leading to a mature platform economy, (2) explaining the mechanisms that influence dynamics between complementors and providers, and (3) prescribing how dynamics can be governed. An outlier to these three themes was the study "What's the tally? An Investigation into the Field(s) of Dominant Designs and Platforms" by Sobota et al. [8] who not only provide a protocol on how to bridge two streams of literature but also help to untangle commonalities and differences between dominant design and platforms. This is important because both explain design and emergence of highly related phenomena.

2.1. Infrastructures and the dynamics towards and beyond the platform economy

Not only since the latest revelations on competitive behavior and market dominance of digital platforms such as Facebook, Twitter, or Amazon, platform regulation has become an important topic of today [9]. Instead of focusing on singular platforms, the first set of papers explores the underlying infrastructures that contributed to maturity in platform ecosystems,

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emergence of a 'platform economy' [10] and seem to play an even more important role for ecosystems-of-ecosystems in the expectable future.

In their work on "Visualizing the Maturing Global API Ecosystem", Heshmatisafa et al. [11] follow up an API mapping study to show that the status of the global API ecosystem has moved from emerging to maturing. In their thought-provoking study "Designing the Metaverse" Seidel et al. [12] conceptualize the Metaverse as a meta design space that asks to be filled by other actors. This study is not only timely but also important, because it might describe a future in which a Metaverse becomes the infrastructure on which an ecosystem-of-ecosystems might emerge. Finally, Hermes et al. [13] investigate the regulatory scrutiny on digital infrastructures in their work on "Essential Platform Infrastructure and the Need for Regulation." The paper develops a framework for the externalities of platforms by studying the essentiality of digital platforms and the appropriation of infrastructural properties and lays out where regulation might help contain negative externalities.

2.2. Dynamics between platform providers and complementors

A second set of studies explains mechanisms leading to dynamism within platforms and ecosystems. They explain how interactions between platform providers and complementors contribute to the proliferation of singular actors while also changing the dynamics between actors on a platform.

We learn from two studies how the providers and complementors compete and collaborate simultaneously. In their work on "Vertical Integration of Digital Platforms in the Agricultural Industry", Saroniemi et al. [14] shed light on a new empirical domain for digital platforms, namely agriculture. This is important because it helps us understand not only how digital platforms integrate into industry-specific value chains but also how this shapes competition and collaboration between platform providers and complementary third parties. Similarly, the work of Halckenhaeusser et al. [15] named "Comparing Platform Core Features with Third-Party Complements" investigates how platform providers compete with their complementors. This study is noteworthy because it not only adopts quantitative analysis on a well-established domain, i.e., the iOS app store, but also because it links to a still ongoing debate on how actors in platform ecosystems define and redefine core and periphery functions.

The first study leads us to two other studies which not only take a closer look at the actors but also on the actants, i.e., the digital resources being exchanged on a platform. The quantitative study "Complementor participation in platforms: Evidence from the 7th and 8th Generations of Video Game Consoles" by Sobota et al. [16] provides a view on how constellations of digital resources, here the breadth of content, shape the participation of complementors in platforms. Thereby, they also extend our knowledge on a well-established empirical domain for platform research. In contrast, the exploratory study "Producing Generative Digital Data Objects: An Empirical Study on COVID-19 Data Flows in Online Communities" by Blotenberg et al. [17] looks less at how resources shape dynamics, but inquires how dynamics within online communities shape content, here data in the life sciences. They lay out that data on such a societally important entity can be generative but only if it is shaped accordingly by community providers and complementors.

Finally, one paper provides a new theoretical view on platform dynamics as it inquires the dynamisms between actors on a platform and their subjective uncertainties. The study by Alsahli and Bantan [18] named "Uncertainty in Digital Platforms and Ecosystems: The Dynamic Interplay Between Knowledge Problems" not only considers dynamism between providers and complementors but also considers the role of regulators.

2.3. Designing platforms to govern dynamics

While the other studies mainly explained the dynamics within platforms and ecosystems, two groups of authors have looked more closely at the design of platforms to produce prescriptive knowledge. Michalke et al. [19] adopt a service-dominant logic view in their design science research study for platforms that produce service innovations through value co-creation. Their study named "Design Principles for Engagement Platforms – Design Knowledge on Fostering Value Co-Creation" therefore focuses more on prescriptive knowledge for the governance of innovation platforms. In contrast, the study "B2B App Store Governance in Software Platform Ecosystems: Dimensions and Types" by Floetgen et al. [20] focuses on governance of transaction platforms in a B2B context. They introduce a taxonomy for app stores that helps them prescribe governance types for such platforms.

3. Invitation to inquiry

Throughout the last years of providing this minitrack, we have received many contributions to research on platforms and ecosystems. In the two most recent years, 2020 and 2021, we have gained a much deeper understanding on the dynamics of platforms and ecosystems. In 2020, most submissions have uncovered

the language to communicate on these dynamics and the practices to manage them. This year, manuscripts provided complementary explanations on the dynamics by either focusing on the role of infrastructures or on the relationships between platforms and complementors. We also received much work on how to design platforms so that they more effectively govern the relationships between providers and complementors, be it for transaction or innovation platforms. Questions on platform governance have received new attention, because most research has acknowledged dominance of platforms within and across many industries. This might also be the reason why regulation on platforms was taken into consideration across multiple submissions.

As we look forward into 2023 and beyond, we invite authors to further explore the impact of platforms on industries and overall society. While there has been growing attention on the power and dominance of a few platforms on different aspects of daily life from platform companies, such as Meta (formerly Facebook), Apple, Google or Microsoft, we seek to understand the underlying mechanisms and boundary conditions, such as their industry-specificity. With increasing platform maturity, we see indications for emerging ecosystems-of-ecosystems, e.g., "Metaverse" or metaverses being provided by few actors whose governance mechanisms will influence not only directly related actors, but also indirectly related actors such as complementors of related platforms. We believe that numerous research questions arise from there that will ask for adaptation of existing and introduction of new theory.

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