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Public-Private Partnerships and Sustainable Development – Designing Relational Business Models

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Abstract

There are tremendous challenges in meeting the 17 sustainable development goals (SDGs) of Agenda 2030. A collaborative search for solutions is needed to tackle the complex and novel problems at the crux of these challenges. This requires local government and companies to join forces with other stakeholders. This collaboration usually takes the form of new Public-Private partnerships (PPPs) in emerging innovation ecosystems focused on the SDGs. These ecosystems are integrated through relational business models – multisided platforms with heterogeneous stakeholders and multidimensional utilities. Using the newly developed stakeholder resource-based view (SRBV), we have identified some characteristics of these business models and of their complex relational governance. We recognize that a lot of work is still needed to define the right governance for PPPs.

Introduction

Despite progress in improving human wellbeing, the world still faces social ills, such as the climate crisis, urban poverty, and growing inequality. To address these problems, the United Nations adopted 17 Sustainable Development Goals (SDGs) in September 2015. While the SDGs were intended to be integrated into the strategic agenda of businesses, this remains a challenge. Firms, however, must engage with the SDGs to fulfil their social contracts, to which they are often legally, ethically, and economically

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bound. Reaching these goals is a tremendous effort, and one only possible with the collaboration of public, private, and social organizations, and the collective effort of all citizens in solving the complex, interconnected problems[1].

Sustainability and Public-Private Partnerships

Public-private partnerships (PPPs) working towards the SDGs often encounter problems, such as decarbonization or designing a new sustainable transport and mobility system, that do not have a clear solution. They require the collaboration of different stakeholders to design novel business models (Ricart and Rey, 2022) that can co-create a solution.

Some of these great challenges are global in nature, but even in those cases, the solutions are easier if problems are localized. Therefore, cities are important players in working towards the SDGs (Giuliodori et al., 2023), and need some form of PPP business model – specifically *PPP for the SDGs*[2] (Berrone et al., 2019)– to achieve this.

One example is the development of new transport and mobility in cities that aims to be more affordable, efficient, sustainable, safe, and resilient. Solutions are still emerging, and many local authorities are experimenting with different partnerships with multiple and diverse stakeholders involved in building a Mobility as a Service (MaaS) system (Ricart et al., 2022).

In 2014, for example, Vienna was among the first cities to integrate public transport services through a digital platform. In a three-year EU-funded project, the federal railway company ÖBB and the utility company Wiener Stadtwerke partnered with two technology firms to create a platform that would integrate different mobility services provided by different stakeholders. The resulting SMILE app enabled users to plan trips, and then be charged for them at the end of the month. As well as buses, trains and trams, the system included options for car-sharing, bike-sharing, and taxis, creating an integrated solution for mobility.

During its trial period, SMILE was a success, with 26 percent of users saying they were using public transport more frequently and 21 percent saying they were less likely to use their cars. Despite this success, in 2015, ÖBB and Wiener Stadtwerke decided to end their collaboration and the platform was terminated. Both public companies started to develop their own in-house platforms and reduced their cooperation with one another. The end of the SMILE project illustrates that, even if the technical infrastructure for MaaS is present, cooperation between the stakeholders is paramount if it is to be a success. Public sector companies with differing agendas can lead to a more fragmented transport ecosystem that limits the efficiency of MaaS (Audouin and Finger, 2019).

The Whim platform, launched in Helsinki by the tech company MaaS Global in 2017, is another recent example of a MaaS system. The company developed the platform, which runs in partnership with HSL, the regional transport company. Whim allows users to plan trips and access public transport. Payment is a flat service fee at the end of the month, with a surcharge for car rentals and taxi-hailing.

In its first two years, Whim succeeded in increasing public transport use from 48 percent to 63 percent among its users. However, Whim users were also twice as likely to use taxis, although their share of this mode of transport was only 2 percent. There was also

[1] These problems are usually referred as "wicked problems". As defined on Wikipedia:" In planning and policy, a wicked problem is a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. It refers to an idea or problem that cannot be fixed, where there is no single solution to the problem; and "wicked" denotes resistance to resolution, rather than evil. [1] Another definition is "a problem whose social complexity means that it has no determinable stopping point". [2] Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems. Due to their complexity, wicked problems are often characterized by organized irresponsibility."

[2] To help in the design of such a PPP, we have developed an evaluation system for PPPs in line with their contributions to the SDGs. It has been used as starting point to a more robust and sophisticated evaluation system, PIERS, developed by a large participative project and approved by UNECE (https://unece.org/ppp/em). PPPs for the SDGs are an important instrument in the UN Agenda 2030.

a decrease in walking and cycling, from 44 percent of all trips to under 30 percent. The number of daily trips across all transport modes remained about the same, ranging from 3.3 to 3.4. While Whim's impact on public transport use was estimated to be positive, it may also reflect a segment of the population already more likely to use public transport than the national average (https://kollektivtrafikk.no/app/uploads/2021/04/Ramboll_whimpact-2019.pdf).

Jelbi, thought to be the largest MaaS system currently in operation, was launched in Berlin in 2019. It includes a wide range of mobility options, including trains, trams, metro, and ferries, as well as shared-mobility options such as bikes, scooters, car-sharing, and taxis. The platform was launched through a two-year partnership between the Lithuanian firm Trafi and the public transport company BVG. The breadth of options on Jelbi testifies to the relatively low fragmentation of the public transport system, with BVG running most of the modes.

The Jelbi platform centralizes payment, but unlike Helsinki's Whim, users pay for each mode as they use it. However, BVG already had a system that consolidated fares to a flat daily fee. While Jelbi's experiment is still recent, the fast deployment of the system – within six months of the project's initiation – speaks to the advanced pre-existing institutional infrastructure and Berlin's efficient public transport system (Audouin and Finger, 2019).

Thanks to advances in information and communication technology (ICT), many new digital business models emerging in cities take the form of platform-sharing. Initially, these sharing models were seen as socially good, associated with the circular economy, and even a democratization of rents. Consequently, these sharing models have grown very quickly for many economic activities.

AirBnB, for example, started with the reputation of almost a social business, allowing hosts to earn extra money by renting rooms, and offering guests short-term affordable accommodation. This reputation started to change, however, as some cities – Barcelona is a notable example – decried the effect on their property market (Carrasco et al., 2022). Another example is Uber which, after successfully entering many cities, started to engender negative reaction from its own drivers, taxi associations, and regulators.

Most of these collaborations in cities take the form of emerging ecosystems coordinated on digital platforms, showing that sustainability goes hand-in-hand with digital transformation (See the report at https://thoughtlabgroup.com/building-a-future-ready-city/). These examples indicate that we will not be able to progress towards the SDGs without new technology-based collaborative business models.

While attaining the SDGs requires collaboration from a diverse set of stakeholders, facilitated by digital business models, an aspect that is often overlooked or not sufficiently recognized is the importance of governance. Governance is defined as the way rules, norms and actions are structured, sustained, regulated, and allow for accountability.

PPPs have emerged as a pivotal instrument for tackling complex societal challenges, catalyzing infrastructure development, and fostering innovation across sectors (Quélin et al., 2017; George et al., 2023). Some of the inherent challenges in multi-stakeholder collaborations, such as power imbalance, information asymmetry, lack of trust, and problems of agency, are frequently intensified in PPPs compared to private-only collaborations. Consequently, conventional governance mechanisms often prove insufficient in addressing these complexities (Bacq and Aguilera, 2022).

The following section introduces the notion of the relational business model (RBM) as a design tool for dealing with the challenges of these multi-sided complex collaborations. The concept is first viewed in the context of resistance to some digital platforms in cities and is then applied to governance design for *PPPs for SDGs*.

Relational Business Models

In Ricart et al. (2020), we aimed to understand the grassroots resistance to certain digital platforms and what recommendations could be made to these

platforms to avoid or alleviate negative reactions. We identified the conditions that gave rise to these reactions:

Physical asset digital platforms: When the platform opened new profitable market opportunities for local and scarce physical assets, as was the case of AirBnB in Barcelona, outsider stakeholders, such as citizens organized to confront the increase in prices and the decrease of supply.

Labor digital platforms: When a platform enters local and precarious labor market, there may be a reaction from the insider stakeholders, as was the case with Uber drivers or delivery partners working for Glovo.
For both the above types of platforms, the likelihood and intensity of collective resistance increases compared to digital asset platforms, as digital assets are not usually local or scarce.

Digital platforms can respond, alleviate, or even prevent this collective action by running a co-creation of value exercise with stakeholder governance, using what we call a relational business model (RBM) design characterized by three elements:

Structure: A multi-sided platform, including the local community and incorporating all potential stakeholders, insiders, or outsiders. If we omit stakeholders who may be affected by the operation, we may encounter grassroots resistance to the platform.

Content: Inclusive stakeholder value propositions for each stakeholder, ideally using multiple forms of value. For instance, some stakeholders may value social or environmental issues more than others.

Governance: Ecosystem-centered governance to improve alignment and balance power differences among the partners, focusing everyone on value-creation (and distribution) by increasing entrepreneurship and innovation.

Therefore, RBM design is a tool to deal with the multi-sided relational problems associated with some digital platforms. These problems, though, are also present in PPPs working towards the challenge of our century – the sustainable development goals. The SDGs involve complex and novel problems, with high levels of uncertainty, multiple externalities, and possibly common goods, and these models, responding to community needs, play an important role in the governance of emerging city ecosystems and new Public-Private partnerships.

The Stakeholder Resource-Based View

Stoelhorst (2023) developed a stakeholder resource-based theory that can help us better characterize the governance elements of the relational business model applied to PPPs for SDGs. His starting point was the need for teamwork and innovation. In terms of governance, Alchian and Demsetz (1972) gave control and residual rights to the entrepreneur (and CEO) of a simple firm. Stoelhorst (2023) extended this idea to the modern corporation and considered it the governance structure needed to articulate the necessary collaboration among the different stakeholders, as value could only be created by working together. He further developed the rules to distribute the value created in a way that encouraged all needed stakeholders to participate.

Using the same logic, we can characterize the PPP as a governance structure to facilitate stakeholder cooperation in team production and innovation. Therefore, a PPP is a coalition of stakeholders, all needed for joint value creation, bringing the necessary knowledge, resources, labor or capital. This joint value creation is essential in PPPs for SDGs.

As PPPs need to be designed, initiated, and operated for the long-term, their governance should consider the collective and dynamic nature of value creation. Furthermore, as PPPs incorporate very diverse stakeholders, they should consider the different dimensions of value – economic, social or environmental – relevant for each stakeholder, and use them in the process of appropriation by each stakeholder in a way that justifies their willingness to enter and stay in the coalition.

Based on this concept, PPPs "allow stakeholders to create value by offering a governance form to resolve

the pure bargaining over the surplus created by team production and team innovation" (Principle 3, referring to firms in page 1499, Stoelhorst (2023)). Due to the heterogeneity of resource bundles and individual resources associated with each stakeholder, rents are derived by competitive bargaining in factor markets, while profits are distributed subject to pure bargaining, thanks to the governance structure in place.

Stoelhorst (2023) stated: "Stakeholder payments are the sum of (1) opportunity costs, (2) rent payments (efficiency and market power), and (3) the outcome of pure bargaining over economic profits (associated to novelty, unique complementarities and/or scale advantages)" (Combining principles 6 and 7 from Stoelhorst, 2023). In our case, stakeholders in the PPP appropriate (multidimensional) value above their opportunity cost, adding additional rents due to efficiency or market power, and share in profits as an outcome of the pure bargaining embedded in the governance of the PPP. The factors identified above of novelty, complementarity or scale are important ones, but perhaps not the only ones, in the bargaining power of each stakeholder. The negotiation among the different stakeholders is more complex and integrative as public good, common goods, and private goods are involved as well as multi-dimensional utilities.

The governance of RBM is very complex and requires constant adaptation as partners learn about each other and about the value being created. Therefore, the constitution of the PPP requires a heuristic search combined with relational coordination (Nickerson and Zenger, 2004). The search process invites stakeholders, based on the knowledge of the orchestrator (usually the public sector) of their experience and reputation. As it is difficult, ex-ante, to define the incentives (value-distribution), the orchestrator defines an ecosystem-governance defining the value loops among the different partners, capturing the insights of the stakeholder strategy, and reflecting its realized strategy in the design of the business model (Casadesus-Masanell and Ricart, 2010). In other words, the business model defines how value will be distributed in expected contingencies and governed in unexpected ones. Given the nature of these PPPs, the ecosystem-centered governance would usually include formal and informal contractual as well as formal and informal relational governance mechanisms to be able to deal with complexity and novelty at the same time. More work is needed to identify the right mechanisms for these complex governance.

As a reminder of the complexities involved in this ecosystem-centered governance, SMILE in Vienna is a good example. The initial app was developed in a European project that provided the funding and incentives for all partners to participate under the collegial governance of the project. Once the work was successfully finished, each main partner had the incentive (and knowledge) to develop their own proprietary app and for partners to stop their collaboration, breaking down this ecosystem.

Conclusion

While the sustainable development goals are far-reaching and global in nature, work towards achieving them often needs to be localized. To meet the sustainability goals, cities and companies should join forces with other stakeholders in a collaborative search for solutions to the complex and novel problems at the heart of the SDG challenge. This takes the form of new *PPPs for SDGs* and emerging innovation ecosystems, integrated through relational business models. We have identified some characteristics of these digital business models and of complex relational governance, recognizing that work is still needed to define the right governance for each PPP.

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