#### **RESEARCH ARTICLE**



# Paths and patterns of value capture innovation in sharing economy

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#### Abstract

The purpose of this research is to investigate value capture innovation in sharing economy platforms. Revenue management and pricing strategies are indeed pivotal aspects platforms should care about when (re)configuring their business models. A mixed-method investigation has been performed to achieve this goal: a longitudinal content analysis and a case studies analysis. Results from the first step of the research show that four main typologies of innovation emerge in the analyzed platforms. Furthermore, the case studies analysis reveals three main patterns (Network, Monetization, Lock-in) and the possible paths a platform can undergo when innovate its value capture mechanisms.

Keywords Sharing economy · Value capture · Revenue model · Innovation

### Introduction

The value capture process refers to the mechanism through which an organization defines the origin of revenues, the different ways to receive money in exchange for its services, as well as the pricing strategies and the cost structure of the organization (Osterwalder and Pigneur 2010). Indeed, once the value is created, the organization face the issue of defining how to capture part of this value in form of revenue. Despite value capture is one of the three core processes of the business model of every organization, many of them might struggle to find the proper one, as capturing value is often much more difficult than creating it (Bock and George 2018). This emerges as being particularly true for sharing economy companies, where the growing number do not correspond to the length of the lifespan these platforms enjoy (Plenter et al. 2017; Täuscher and Kietzmann 2017). Sharing economy companies provide the infrastructure through which individuals and eventually companies can access or share existing resources and assets in exchange of monetary

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<sup>2</sup> LUMSA University of Rome, Via di Porta Castello, 44, 00193 Rome, Italy and non-monetary benefits (Mair and Reischauer 2017). While capturing value is a quite straightforward process for traditional companies that simply charge the customers for the value created (Kohler 2015), it becomes much harder for this kind of platforms where the value comes from the increased use of idle capacity, and is often largely created by the users themselves.

The purpose of this research stems from these premises and is focused on exploring the patterns and the paths of value capture innovation in sharing economy platforms.

The concept of pattern comes from Alexander et al. (1977) that define it as "a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice" (p. x). Scholars have widely applied this concept to the business model and business model innovation phenomena (Johnson 2010; Abdelkafi et al. 2013; Remane et al. 2017). As a pattern often describes a solution for only a certain part of a company's business model (Weill and Vitale 2001), the aim of this research is that of gaining insights about how this concept can be applied to the value capture mechanisms. As for the path, the goal of this research is to shed light on the steps that might lead from a starting to an arrival point, consistently with a wider interest emerged in literature towards the identification of the paths of business model innovation (Hekkilä et al. 2018; Muzellec et al. 2015).

### **Revelant literature**

Leaving beside the wider debate about the appropriateness of talking about profit generation in the sharing phenomenon, extant literature shows a scant focus on value capture in sharing economy. Ritter and Schanz (2019) describe revenue streams as coming from direct or indirect sources (e.g., charging consumers vs charging a third group subsidizing the consumers) and as being utility bound or unbound basing on their connection to parameters of use or not (e.g., usage fee vs subscription). Constantiou et al. (2017) underline the different degree of market mechanisms that can be in place in sharing platforms: on the one hand there are platform owners that price the service dynamically based on secret algorithms, while in other cases the prices—if any—are based on compensating or sharing the costs of the supply side.

Properly managing the value capture mechanisms is pivotal for sharing economy platforms as it can highly support their survival and their success. Indeed, differently from products that can produce only a single revenue stream, platforms can generate many. A wrong revenue management has been proven to be among the main failure factors in sharing economy business models. On the one hand the transaction-centered nature of sharing economy hampers the creation of switching costs and customer lockin strategies. On the other hand, the type of service often implies a low transaction frequency, when business models address a market in which product or service transactions occur infrequently (Täuscher and Kietzmann 2017). As for these features of the sharing phenomenon, platforms should focus their attention on creating additional value by broadening the value capture opportunities, moving forward from relying on a revenue model that is often based on a single revenue stream (i.e., commission fee) (Laczko et al. 2019). Benefits in terms of increased platforms stickiness and improved profitability also depends on the ability to create revenue streams that are complementary and not interdepended among each other, making the platform viable in the long term (Laczko et al. 2019).

The innovation of the value capture formula sharing economy platforms are demanded to carry out, is consistent with the wider need to innovate the overall business model to stay competitive on the market. A static offering is indeed easily copied by competitors (Smedlund and Faghankhani 2015). To innovate the business model means to adopt an innovation in company's BM that is new to the firm, and whose results is an observable change in the firm's practices towards its customers and partners (Hekkilä et al. 2016).

From a business model point of view, value capture innovation refers to the innovation of a firm's core earning

logic, either by changing the revenue model or the cost structures (Spieth and Schneider 2016). As for the former, having new revenue models might mean to adopt more sustainable streams in which revenues are generated indirectly or over time through cross subsidization or life cycle values (Clauss et al. 2014; Clauss 2017). As for the latter, cost structures reflect the strategic scope of a firm's offering, and it can be changed consistently with the business model and the corporate strategy (Zott and Amit 2008).

Giesen et al. (2007) refer to 'revenue model innovation' as one of the three paths to effectively innovate the business model. In their view this process includes the reconfiguration of the offering (product, service, value mix) and/ or the introduction of new pricing models, citing Gillette's razor and blade pricing strategy and Netflix's introduction of new rental options as successful examples. Consistently, Hinterhuber and Liozu (2014) pinpoint on the importance of pricing strategy innovation, that have the potential to brings new-to-the-industry approaches to pricing strategies, to pricing tactics, and to the organization of pricing, to achieve increased customer satisfaction and company profits. These aspects take on a particular configuration in sharing economy platforms, where there are two or more sides involved, thus strategic decisions need to be taken also about the pricing issue of whether and how much the different sides are charged (Evans 2003). The complexity of the pricing structure makes the revenue model very complex (Rochet and Tirole 2003).

## **Materials and methods**

To achieve these goals a two steps methodology was applied, combining retrospective data and real-time detection of the innovation process. In the first stage, an iterative exploratory content analysis has been performed on a sample of sharing economy platforms through a longitudinal data collection that was carried out from 2018 to 2020. The sample for this study was drawn from firms listed in Crunchbase, a community-based platform that summarizes information about industry trends, investments and news about global companies, that emerged as being one of the world's most relied upon business information platform. The database search was performed for the first time in 2018, using "sharing economy", "collaborative economy" and "Peer-2-Peer economy" as keywords. The initial search identified 752 companies (excluding duplicates), from which those that were no longer operating, those that were not properly sharing platforms and those for which available information were not sufficient were excluded.

The final sample was made of 149 sharing economy platforms that were consistent with the purpose of the research. Information about these platforms were collected for three times during a three years timeframe, mainly through the websites but also from related news, and any available documents that could be accessed by the researcher. The framework for the data collection has been drawn from the literature about business model, value capture and sharing economy (Table 1). Despite the cost structure is an important part of the value capture process, in this first stage the decision was to not include it in the data collection. This was because of the lack of transparency on this subject in the publicly available data due to the sensitivity of the information (Ciulli and Kolk 2019).

While collecting information, the platforms that from one year to the other resulted as not being operating anymore were excluded from the sample. This lead to have 112 platforms in 2019 and 99 platforms in 2020. The output of this step was the identification of 8 cases in which changes are evincible from one year to another concerning the analyzed variables.

In the second phase, those cases for which an innovation in the value capture process was evidenced from the website analysis, were adopted for a case studies analysis, to have a wider view about the overall picture behind these changes, and to outline which might be considered the paths and the patterns of value capture innovation (Table 2). The study has been based on the multiple-case (holistic) model (Yin 2014), and the single firm has been considered as the unit of analysis. Semi-structured interviews and desk research were used as data sources, also to collect complementary evidence and, where necessary, triangulate the findings. The interviews were transcribed and other data were protocolled (Babbie 2015).

### **Findings and discussion**

The longitudinal analysis carried out to identify the changes in the variables of the value capture, highlights a first interesting information about platforms' survival, basing on the numbers of platforms that were no more operating from one year to the subsequent. Indeed, from year 1 to year 2 there has been a decrease of 25%, while from year 2 to year 3, a decrease of 12%. Overall, the innovations in the value capture along the analyzed timeframe concerned 8 platforms: 4 from year 1 to year 2, 3 from year 2 to year 3, and 1 both from year 1 to year 2 and to year 2 to year 3.

The identified innovations show different degrees of depth, where the variables that drove the analysis have been differently affected.

A first example is made by those type of innovations within the sub-variable, that has been labeled as Adjustment.

| Table 1 | Framework for | the | analysis |
|---------|---------------|-----|----------|
|---------|---------------|-----|----------|

| VALUE CAPTURE | Revenue model                     | Subscription          | A periodically fee is charged by the<br>platform provider independent of<br>peer usage   | Botsman and Rogers (2010), Tang<br>(2016), Roma and Ragaglia (2016),<br>Kohler (2015), Kannisto (2017), |  |
|---------------|-----------------------------------|-----------------------|--|---|--|
|               |                                   | Transaction           | The platform provider retains a certain<br>percentage of the transaction value<br>after successfully matching supply<br>and demand | Täuscher and Kietzmann (2017) and<br>Kemppainen et al. (2018)   |  |
|               |                                   | Advertising           | The sale of advertising is the main source of revenue  |   |  |
|               |                                   | Freemium              | The platform provider offers basic<br>services or usage for free. Additional<br>features and benefits are subject to<br>charge     |   |  |
|               | Paying side                       | Provider              | Money are raised from the supplier side  | Evans (2003), Rochet and Tirole (2003)<br>Goos (2014), Bhargava (2014) and                              |  |
|               | Pro<br>Th<br>Pricing strategy Fix | End customer          | Money are raised from the end-user side  | Ardolino et al. (2020)  |  |
|               |                                   | Provider and customer | Money are raised from both suppliers and end-users   |   |  |
|               |                                   | Third part            | Money are raised from other partners i.e. advertiser   |   |  |
|               |                                   | Fixed price           | The economic value is not negotiable   | Giesen et al. (2007), Hinterhuber and   |  |
|               |                                   | Differentiated price  | The economic value is defined and it varies in relation to different variables   | Liozu (2014), Banerjee et al. (2015)<br>and Cachon et al. (2017)  |  |
|               |                                   | Bargained price       | The economic value is defined from<br>time to time during the bargaining<br>phase  |   |  |

| Code | Description (from Crunchbase)  | Industry | Year of<br>founda-<br>tion |
|------|--|----------|----------------------------|
| P.1  | Long distance ridesharing platform that connects drivers with empty seats and passengers to share travel costs                   | Mobility | 2013                       |
| P.2  | Mobile application and a peer-to-peer car sharing marketplace that enables car owners to rent out their cars                     | Mobility | 2009                       |
| P.3  | Free app connecting people with their neighbors and with local shops & cafes so that surplus food can be shared, not thrown away | Food     | 2015                       |
| P.4  | Online market place trading free things to promote sharing, reuse and recycling  | Goods    | 2008                       |
| P.5  | World's largest network for discovering and reviewing coworking spaces   | Space    | 2015                       |
| P.6  | Night sharing community where members travel by swapping nights and not money  | Space    | 1992                       |
| P.7  | Marketplace for businesses and marketing and communication agencies  | Service  | 2014                       |
| P.8  | The first fully electric car sharing in Europe   | Mobility | 2015                       |

Table 2 Summary of cases included in the second phase

Source Authors' elaboration

This type of change happens for example when the subscription fee is increased or decreased in its amount, without actually changing the revenue model itself, nor the paying side or the pricing strategy.

At a further level, there are those innovation between the sub-variables, where a transition from a sub-variable to another is evincible in one of the analyzed variables. This typology of innovation has been labeled as Reconfiguration. Interesting examples are platforms P.3 and P.4, whose innovation refers to the revenue model that in both the cases was changed from advertising to freemium.

A third typology of innovation that emerged has been labeled as Innovation, and concerns those changes that happen in two of the variables. It is interesting to note that in three cases out of four this type of innovation emerges as being linked to an integration rather than a mere transition. This means that the new sub-variables are integrated in the business model, in addition to the existing ones, leading the platforms to benefit from a differentiation in their earning logic. For example, P.1 and P.7 undertaken an integration in their revenue model that lead also to an integration in the pricing strategy. As for P.1, from year 1 to year 2, a subscription model with a fixed price was added to the former transaction fee where a differentiated pricing strategy was evincible. In P.7, from year 2 to year 3, the former transaction model with a fixed price was integrated with a fixed priced subscription, that made the transaction fees as differentiated according to the type of subscriptions. Revenue streams integration are also evidenced in P.2, where the changes cover both the revenue model and the paying side; the platform started with a transaction fee on demanders in year 1, and completed it with the introduction of a subscription fee for the suppliers in year 2. Finally, a transitional Innovation emerged in P.8, where a fixed price usage fee in year 2 was replaced by a subscription fee with differentiated pricing in year 3.

has been labeled as Radical innovation, as it concerns all of the analyzed variables, with changes covering at the same time the revenue model, the paying side and the pricing strategy. Interesting examples are P.6 and P.5. As for the former, the initial situation was set on a transaction model where the fee was defined through a bargained pricing strategy, that was then changed from year 2 to year 3 in favor of a subscription model, where the fixed fee has to be paid by all the members of the community, whether they supply or demand the goods. The case of P.5 is even more complete, as changes have been detected in all of the three moments of data collection. P.5 had no revenues in 2018, it moved to the freemium model (differentiated pricing) charging the supplier side in 2019 and finally it added a subscription fee (differentiated pricing) for demanders in 2020 (Table 3).

Lastly, the deeper typology of innovation emerged, that

Once the typologies of innovation have been detected, a case studies analysis has been performed, to gain insights about the phenomenon and to outline which can be considered the main patterns and the main paths of value capture innovation in sharing economy companies.

A first element that has to be underlined is that the driving element in those innovations emerges always as being the revenue model, with the introduction or integration of new streams bringing changes in the paying side and/or in the pricing strategy. Also, regardless of the different typologies of innovation and the specific sub-variables involved in the changes as starting and arrival points, there seems to be a common path in terms of pursued objectives (Fig. 1).

In the Network phase, the need is that of attracting a critical mass of users, thus very often no revenue models are foreseen. This choice depends on several reasons such as the introduction on the market, the need to be known and understood by the users, or the conduction of an idea testing to gather evidence of its potential appealing. Of course, this cannot be a long-term solution, and the pressing need to ensure an economic sustainability lead the platforms towards

#### Table 3 Value capture innovation typologies in the cases

| Case | Value capture innovation typology              |  |   |                          |
|------|--|--|---|--------------------------|
|      | Year 1   | Year 2   | Year 3  |                          |
| P.1  | Rev.: Transaction<br>Pr.: Differentiated price | Rev.: Transaction + subscription<br>Pr.: Fixed price       |   | Innovation (integration) |
| P.2  | Rev.: Transaction<br>Pay.: Supplier            | Rev.: Transaction + subscription<br>Pay.; Demander         |   | Innovation (integration) |
| P.3  | Rev.: Advertising                              | Rev.: Freemium   |   | Reconfiguration          |
| P.4  | Rev.: Advertising                              | Rev.: Freemium   |   | Reconfiguration          |
| P.5  | Rev: No revenue                                | Rev.: Freemium<br>Pay.: Suppliers                          | Rev.: Freemium + subscription<br>Pay.: Suppliers + demanders          | Radical innovation       |
| P.6  |  | Rev.: Transaction<br>Pr.: Bargained price<br>Pay.: Renters | Rev.: Subscription<br>Pr.: Fixed price<br>Pay.: Suppliers + demanders | Radical innovation       |
| P.7  |  | Rev.: Transaction<br>Pr.: Fixed price                      | Rev.: Transaction + subscription<br>Pr.: Differentiated + fixed price | Innovation (integration) |
| P.8  |  | Rev: Usage<br>Pr.: Fixed price                             | Rev.: Subscription<br>Pr.: Differentiated price                       | Innovation (transition)  |

#### Source Authors' elaboration

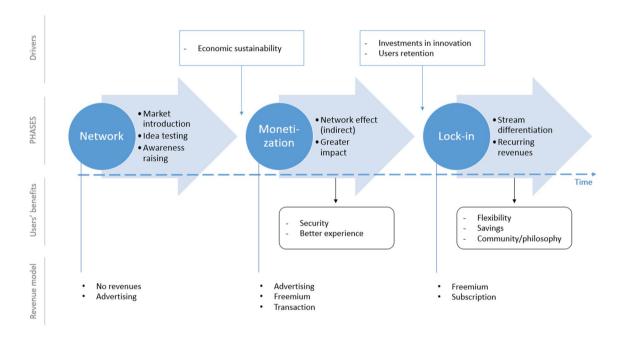


Fig. 1 The paths and patterns of value capture innovation

the adoption of revenue streams to monetize the business model. In the analyzed cases this passage takes on different forms: from no revenues to advertising or transaction fees, or from advertising to freemium or again transaction fees. On the other hand, these changes need to be justified to the users that are asked to pay for something they have benefited from for free lately. The analysis shows that the customer benefits that are connected to such changes mostly refer to the increased security in the use of the platform or to the better experience that could be delivered. In the Monetization phase, the platforms can benefit from indirect network effect, for example by attracting advertisers, but also to reach a greater impact when the goal is to scale up. However, the need to invest in further innovation and to increase user's retention might lead the platforms to adopt tighter revenue models, such as the freemium and even more the subscription model, and moving to a Lock-in phase. In this phase the platforms often integrate new and existing streams to differentiate the revenues and to add actors on the paying side. A common goal is often that of overcoming the transactional nature of sharing platforms, that often presents the risk of users bypassing the platforms after the first match. A key benefit from this point of view is also having recurring revenues that have a long-term perspective but also that are utility unbounded. In terms of users' benefits, these changes are promoted as increasing flexibility in using the platform, allow users to save money when paying only a periodical subscription fee, supporting the sense of community and defending the core philosophy of the platform.

## Conclusion

The research deals with an under-investigated yet important topic, adding on the application of business model innovation studies to the field of sharing economy companies, that is a recent and promising avenue for inquiries (Grieco et al. 2021; Grieco 2021).

The research aims to increase the understanding about value capture innovation, that can be an important element in supporting platforms creating and maintaining their competitive advantage. Further investigation will also allow to shed light on the specific benefits and risks related to the specific revenue models. Future research avenues opening from here can focus on those platforms that failed, to understand if the changes in the value capture can really be considered as determining the survival of the company. The main limit so far lies in the fact that important information has been drawn from secondary sources and this might hamper the comprehension of the strategies behind the detected innovation or the real implication they have brought about. The case studies analysis aims to fill this gap, supporting and completing the data collection process. Other limits derive from the nature of the sample, that covers a wide but not complete set of sharing economy platform. Finally, limitation can also come from dealing with the topic of value capture, where earning logics are a sensitive information to collect, and it is not always easy to have transparent information about it.

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