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Co-production models and organizational control of deviant customer behavior : the example of peer-to-peer car-sharing

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This paper presents exploratory research in which three French peer-to-peer car-sharing companies are studied in terms of how they handle their co-production service models and control deviant customer behavior. The study draws on a theoretical framework based on the literature on customer involvement in service co-production, on deviant customer behavior management, and on the general typology of organizational modes of control proposed by Chiapello (1996). Three co-production models related to three control patterns of consumer behavior are identified. First, the transactional model of industrial co-production is associated with strong, highly instrumented control exercised by the organization. Second, the model of relational co-production is associated with control by the market and delegation to consumers. Third, the model of community co-production is associated with strong control based on the community itself. The paper concludes by discussing the strong links that may exist between co-production systems, control systems and business models for each of the companies studied.

Key words: co-production, deviant customer behavior, organizational control, peer-to-peer car-sharing

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INTRODUCTION

Peer-to-peer car-sharing refers to the service provided by companies which put vehicle owners and potential renters in touch with each other and organize the rental. This sector is growing rapidly in France: six peer-to-peer car-sharing companies have been set up since 2008, five of them in 2010.

The emergence of such a service raises many questions for providers, especially in relation to organizing the production process and controlling customer behavior. The service provided in fact results from the collaboration, in part remotely through a website, of three different actors pertaining to the vehicle concerned: the car-sharing company that directly or indirectly connects customers, whether car owner or renter; and the owner who makes available his vehicle, which the renter then uses. The particular features of the co-production of car-sharing give rise to various risks regarding the behavior of renters and owners that lead to major dissatisfaction and serious economic consequences for the company providing the service. The renter, for example, may behave inappropriately toward the vehicle (theft, damage, non-compliance with traffic rules, failure to return the vehicle to the right place or at the specified time), toward the owner (non-payment, rudeness, etc.) or toward the company itself (false name or address, failure to fulfill the rental contract, etc.). The owner in turn may have lied about the characteristics of the vehicle made available or does not comply with the time and place of availability. Car-sharing services thus face significant risks of deviant behavior on the part of customers, and they need to avoid these if the business is to survive and develop. HiGear, a U.S. startup specializing in peer-to-peer luxury car-sharing, ceased operations in January 2012 following the theft of four cars worth more than 400,000 dollars overall, because it could see no way of avoiding the problem in the future.

Although customers' deviant behavior and its implications for organizations have been studied in marketing and in services management (Fullerton and Punj 1997, Fullerton and Punj 2004, Harris and Reynolds 2003, Reynolds and Harris 2006, 2009), the arrangements set up by organizations to protect themselves remain largely unexplored, and all the more so in the complex context of operating a peer-to-peer service. How is it possible to ensure the satisfactory performance of a business such as car-sharing and to prevent customer behavior from harming the service experience or other customers' experience? What forms of co-production and what ways of managing customer behavior have been developed by companies? And with what results?

To answer these questions, and within a context of exploratory research, we studied three very small French peer-to-peer car-sharing businesses¹ by means of qualitative interviews with staff, participant observation and analysis of websites and production processes. The companies were chosen because they had distinct characteristics in terms of offerings and production processes, allowing us to explore a variety of answers to the questions raised by the study.

¹ None of them has more than 3 or 4 people on the staff, including the founder or founders. They all carry out a number of tasks, such as designing the service and its production process, IT provision and operational management of customers and rentals.

In the first part of the paper, consisting of a literature review, we find that the co-production model can define the customer's expected role in the production of the service. Work in marketing and services marketing reveals customers' actual behavior, and in particular what may constitute deviance. Organizational control theory gives us a framework for analyzing ways of controlling deviant behavior associated with a given co-production model.

In the second part, on the basis of this analytical framework, we characterize three types of co-production in peer-to-peer car-sharing: a model where the co-production is supervised by the company, a model where the co-production is delegated to the owner and renter customers, and an intermediate model where the co-production is shared between the company and its customers. We show that the preferred organizational mechanisms for controlling customer behavior differ according to the co-production model used by the company, and that they are linked to this in a coherent way.

The third part provides a summary of the main findings, and then goes on to discuss their theoretical and managerial implications and to identify the limitations of the study and indicate possible future research.

Customers' expected behavior in co-production

Service businesses are characterized by a phenomenon crucial for their management and their performance, i.e. co-production of the service by customers. This concept means that customers take responsibility for production tasks, and to a greater or lesser extent depending on the characteristics and nature of the service. Many studies have shown that the efficient implementation of these tasks by the customer determines the performance of services for the client himself, other customers in similar situations and the company (Eiglier and Langeard 1987, Larson and Bowen 1989).

In many situations, the company has designed and organized this co-production: it has detailed the various tasks that are taken on by the customer and their temporal sequence, the resources the customer mobilizes to carry them out (including interactions with contact personnel or technical interfaces), and the outcome he is supposed to achieve in the various stages of the process. The company will have also set up a management system for this customer involvement, including the definition of the objectives of the co-production and the establishment of action levers allowing the customer and the company to achieve them: detection of customer problems or mistakes, understanding these difficulties, and correction by the customer and/or the company during the co-production or to prevent them occurring subsequently. Many tools and methods can be mobilized in the design and

organization of co-production, as well as in its description and understanding: service blueprint (Shostack 1982), servuction (Eiglier and Langeard 1987), service script (Orsingher 2006), and analysis of services production systems and of processes (Bancel-Charensol and Jougleux 1997, Jougleux 2005, 2006).

The various components needed for the design and understanding of co-production define what we mean by the co-production model (see Table 1). It defines in a particular service context the customer behavior desired and expected by the company: what he is supposed to do, and how, and with what resources and results for the company, himself and other customers, he should achieve this. It clearly distinguishes different forms of co-production in service businesses and how to characterize them. This co-production model is not, however, necessarily explicit in the absence of a clear definition of these elements by the organization. Observation of the practices of both clients and members of the organization nevertheless allows these to be clarified and discussed.

Elements of the co-production model	Description
Production taken over by the customer	Transformations implemented on material, immaterial or human media: nature and characteristic of tasks carried out and of the media concerned, temporal sequence of these tasks. Aims of this co-production.
Resources mobilized by the customer in this co-production	Resources provided by the company: information, contact personnel, technical interfaces, etc. Resources provided by the customer: information, physical support, time, knowledge, etc.
Organization of this co-production	Division of labor between the customer and the organization. Mechanisms for coordination between the customer and the organization

Table 1. Characterization of a service co-production model

The customer's actual co-production behavior

Although the co-production model describes the customer's expected behavior, his actual behavior may, however, be very different. Various studies have analyzed the actual behavior of customers in service situations. Two streams emerge and are mobilized in this study: the analysis, in marketing, of deviant customer behavior, and the analysis of the shortcomings of the co-production of services.

Deviant customer behavior in marketing

The first stream falls within the analysis of deviant customer behavior, especially in marketing, with some studies strongly focusing on services. It analyzes "consumer misbehavior", "deviant customer behavior" and "dysfunctional customer behavior" and defines such deviant or dysfunctional behavior as behavior that violates generally accepted norms in consumption situations and disrupts the order expected in such situations (Fullerton and Punj 1997). Reynolds and Harris (2009) adopt this definition, but emphasize the deliberate aspect of such behavior. They show that research has mainly focused on three themes. The first identifies the various forms of customer deviance, including theft, vandalism, fraud, verbal or physical aggression towards other customers or employees, and illegitimate claims. Fullerton and Punj thus distinguish behavior directed against employees, merchandise, other customers, financial assets or the organization's physical media. The second research theme examines the consequences of these behaviors on contact personnel, other customers and the organization in general (Harris and Reynolds 2003). The final

theme explores the antecedents of these behaviors, particularly the effect of personality traits and individual predispositions, the negative evaluation of the service provided and its production process, and the perception of the service environment (design of the premises, atmosphere, other customers' behavior and the external environment).

These studies appear to have two important characteristics. On the one hand, they focus primarily on the transgression of commonly accepted social norms and describe deliberate behavior on the part of customers. Hence they exclude unintentional behavior due, for example, to lack of knowledge of the behavioral norm expected by the organization. On the other hand, these studies are relatively little interested in methods for managing these behaviors in organizations, even though some studies identify the tactics used by contact personnel (Reynolds and Harris 2006) or emphasize the existence of generic mechanisms such as customer education or deterrence (Fullerton and Punj 2004).

Analysis of the shortcomings of co-production

The second stream of research lies within services management and marketing and focuses more directly on the analysis of co-production and its performance conditions. The existence of the co-production of services raises the question of customer behavior and the effective and efficient implementation of tasks entrusted to customers. Some studies point out that this does not always occur and that for many reasons the customer does not want to, know how to or is unable to carry out the required tasks or more generally the role assigned to him (Tax *et al.* 2006). These customer failures thus concern all situations where the customer's behavior has a negative impact on his own experience, the satisfaction or productivity of other customers and contact personnel. His behavior thus does not conform, whether unintentionally or intentionally, to the co-production norm specified by the organization.

Thus a central characteristic of this research is its viewing the customer as a "partial employee" of the company (Mills and Morris 1986) and its questioning of the principles of human resources management for managing his participation conditions in the production of the service (Bowen 1986). From this standpoint, the clarification of his role, training, development of skills, and motivation are all paths to be explored in helping the customer comply with the role envisaged by the company. Organizational socialization of the customer is then defined as a way for service consumers to become familiar with the role associated with the service encounter (Kelley *et al.* 1990). Such socialization would include three dimensions, namely knowledge of and mastery of his role by the customer, his degree of social integration, and finally his knowledge of the organization, its values and culture (Goudarzi and Eiglier 2006). Other studies inquire how the customer's failings may be identified and prevented. Tax *et al.* (2006) thus define a continuous improvement loop consisting of identifying shortcomings, analyzing their root causes and initiating

corrective action through the modification of the co-production design process, technological solutions or customer behavior management.

This second approach is interesting in that it recognizes the existence of organizational norms of customer behavior in service production, and the possibility of unintentional behavior in relation to these norms. It thus questions the relevance of the co-production model set up by the organization and the organization's responsibility in cases of non-compliance by customers.

To summarize this literature review, we define deviant customer behavior in services in broad terms: it designates behaviors that do not conform to the co-production models more or less explicitly defined by the organization. It includes the two behavior categories described above and it may be either intentional or unintentional. Such non-compliant behavior raises questions about the co-production model used in the organization. What defines behavior as deviant, and on what basis? To what extent is the model responsible for the existence or absence of such behavior? What does it envisage for managing co-production? What are the characteristics and consequences for the company and customers of customer behavior management systems?

Organizational control of co-producer customers' behavior: a proposal for a theoretical framework

To answer the question of customer behavior management systems, it is useful to refer to studies on organizational control. After showing how this work applies to the customer management, we put forward an analytical grid identifying, firstly, the dimensions involved in such control and, secondly, the various forms it can take. This grid provides a theoretical framework for analyzing the organizational tools and devices used to control customers' behavior.

The implications of organizational control

The different forms of organizational control of customer behavior receive little attention in the literature. They can be analyzed within the framework of organizational control, defined by Bouquin (2004) as "the various systems used and disseminated by management to guide the processes that organize and connect the decisions, actions, and outcomes affecting the organization".

This approach to organizational control extends to the customer's behavior insofar as he participates in the production of the service and where it is in the interest of the organization that this be effective. Within this perspective, we define organizational control of customer behavior as encompassing all the tools and devices used by the organization to ensure that customer behavior conforms to what the organization wants.

Organizational control of customer behavior thus articulates two elements: first, the co-production model that defines the customer's expected behavior in the production of the service and, second, the control mechanisms of this co-production that assess the actual behavior of the customer and regulate it, either by bringing it into line with the pre-established conduct norm for co-production or by changing the co-production model and ultimately the service.

A grid for identifying and analyzing forms of organizational control of customer behavior

Taking the general typology of organizational control developed by Chiapello (1996) and combining it with work on co-production in services, we put forward the following

analytic grid (see Table 2) for identifying and characterizing the various systems of organizational control of customer behavior.

Characterization of control systems²	Possible ways of controlling customer behavior
Who controls the customer's behavior? (Dalton, 1971; Hopwood, 1974; Scott, 1992; Reeves and Woodward, 1970)	The organization (employees, technical equipment, IT) The customer himself Other customers
What is the control of the customer's behavior directed towards? (Ouchi and Maguire, 1975; Ouchi, 1977; Merchant, 1982, 1985; Fiolo, 1991; Anthony, 1965, 1993; Mintzberg, 1982, 1990)	His actions The results he obtains His personal characteristics His culture, norms and values
When does the organizational control of the customer's behavior take place? (Bouquin, 1991)	Before customers act While customers act After customers act
What processes are used in the organizational control of the customer's behavior? (Hofstede, 1978, 1981)	Control system that relies on different mechanisms and processes: - processes aiming to make the customer's actual behavior conform to the behavior expected in the co-production model: routine monitoring, by experts, by trial and error, intuitive control, by judgment or political control - processes aiming to change the customer's expected behavior, i.e. the co-production model: continuous improvement, organizational learning, etc.
What means are there for the organizational control of the customer's behavior? (Fiol, 1991; Ouchi, 1979, 1980; Bouquin, 1991; Flamholtz, Das and Tsui, 1985)	The market The organization (rules, procedures, training/information, help by employees, technical resources, IT) Culture (of the organization, of society, of professionals, of the customer, of other customers) Inter-individual relations between customers, between employees, between employees and customers
What is the attitude of the customer being monitored? (Etzioni A., 1961, 1971)	Moral involvement: positive attitude by the customer toward monitoring Instrumental relationship: evaluative attitude by the customer toward monitoring Alienation: negative attitude by the customer subject to monitoring

Table 2. Analytic grid of customer behavior organization control systems

By identifying and characterizing the modes of organizational control of customer behavior, it becomes possible to define the nature of the organization's intervention in this system and to reveal the different kinds of possible intervention. In this way we are in a position ultimately to understand the overall coherence of the mode of organizational control of customer behavior in a given co-production model.

² Literature review by Chiapello, 1996

This exploratory study examines peer-to-peer car-sharing services, which have grown rapidly in France since 2010. These services present important issues in relation to the management of customer behavior.

Issues around the organizational control of customer behavior in peer-to-peer services

Firstly, such peer-to-peer services make available to a customer property belonging to another customer: a car, a room or apartment, tools, photographic equipment, luxury clothes, etc. In our study, the property concerned is a vehicle. Generally speaking, the company is responsible for putting a vehicle owner in contact with a renter with a view to the renter using the vehicle, and this is done through a website and not a physical place. Using the service triangle (Gadrey 1994), we note the reduction in the part played by the customer in this service activity. This type of co-production involves at least three actors, two of whom are customers. The co-production model thus raises the question of the division and coordination of labor between these three actors, and the question of the organizational control of the behavior of two different customers – the owner and the renter –, who are moreover physically distant from each other, regarding an asset that does not belong to the company. Their status is not the same: one owns the property made available, in this case the vehicle, while the other is its user. The company's role is to arrange and supervise, at a distance, the relationship of these two kinds of customer with each other and with the vehicle.

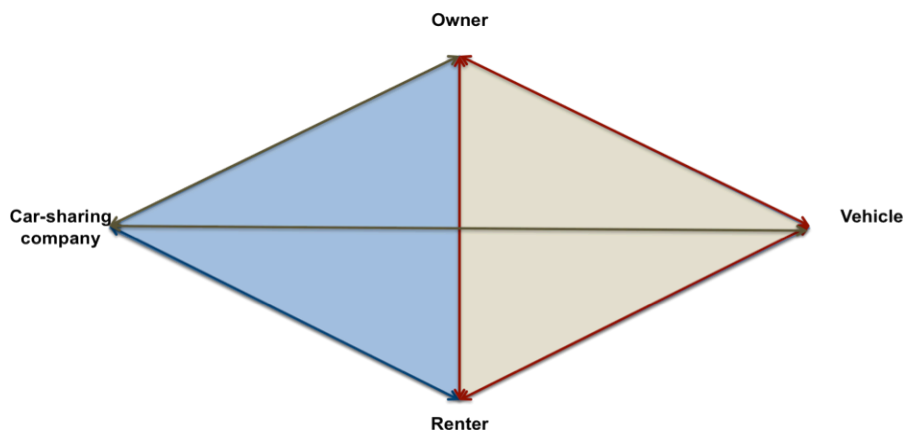


Table 3. Model of the relationship between the different actors in car-sharing

Secondly, the physical medium of the service is an asset whose use can generate frustrations for the customers, and even have serious consequences. Indeed, the use of the vehicle may lead to damage, theft, loss of use by the owner due to non-compliance with the rental conditions (late return of the vehicle, for example), and even serious accidents affecting the customers and other people. There are potentially many forms of deviant behavior, as with conventional car rental. The

growth of these businesses has, moreover, been shaped by the possibility of insuring both the renter and the owner during the rental period.

Finally, the peer-to-peer car-sharing market has only recently developed in France. The three very small businesses (VSBs) studied appeared during 2010 and really only started operating in early 2011. They are therefore in stage of service design, implementation of their model of co-production and analysis of customers' behavior. The consequences of deviant behavior by a customer are viewed by the management of these businesses as significant, and in serious cases as likely to undermine the future of this new activity in France. They are therefore very careful, as too is their main partner, the insurance company that covers the activity. In addition, the service is new and gives rise to many questions and concerns on the part of customers as to what it consists of, its terms of use, and the consequences of non-compliance with the rules laid down by the company or of problems such as accidents or theft of the vehicle.

Research methodology

We analyzed three peer-to-peer car-sharing companies that we call AUTO 1, AUTO 2 and AUTO 3. This approach is situated within a logic of studying multiple cases (Eisenhardt 1989, Yin 1994) that allowed us take account of the diversity of competing co-production models. The data collection was based on:

- A detailed analysis of websites of businesses that explain the conditions of access and use of the service and monitoring their evolution over a year.
- A semi-structured interview with the founders of each business as well as regular discussions with them to monitor the evolution of the service (7 interviews). The interviews focused particularly on anticipated and/or observed deviant customer behavior and on the mechanisms introduced by the businesses concerned to prevent and regulate such behavior.
- Four semi-structured interviews with AUTO 3 and AUTO 2 customers.
- An observation-participation system: 3 of our 4 researchers registered on the sites as a renter or owner. In the latter case, one of the researchers implemented AUTO 1's requirement that a monitoring system ("box") be installed in his vehicle. He also was able to test the service as an owner with AUTO 3.

All the interviews were fully transcribed, and for the interviews with the company founders the recorded interview was played back for validation and discussion.

The production process of the service was analyzed, with three distinct stages being identified.

- **A customer identification and qualification stage**, for both owners and renters. In this stage, the aim is to accurately identify the customer, check that he meets all the conditions set by the company for being accepted as an owner or renter, and make sure that he is aware of all the terms and rules applying to the car-

sharing process. For the owner, this stage also involves a vehicle identification and qualification procedure and determining the rental fee schedule.

- **A vehicle rental stage** as such, which includes the selection and reservation of a vehicle by the renter, its collection from where it is parked, its use together with possible assistance if required, its return, and payment for the service.

- **An after-service stage** including identification of any disputes and their resolution, as well as an assessment of the service by both the owner and the renter.

For each of these stages and on the basis of the co-production model (see Table 1), we identified the work assigned to the three actors and the coordination procedures, as well as the resources made available in these different stages by the company (reservation planning, a tool for setting the rental charge, a rental contract, communication tools, telephone help, etc.) or the customer (information, documents, etc.). A production process flowchart was implemented for each company, to help us understand the role played by the company in the car-sharing service and, symmetrically, the roles of the renters and owners. Based on the grid shown in Table 2 (above), we then analyzed the customer behavior management systems used by the three businesses.

CHARACTERIZATION OF THREE CO-PRODUCTION AND CUSTOMER BEHAVIOR ORGANIZATIONAL CONTROL MODELS

Our analysis of the three VSBs made us aware of distinct forms of organization and service development. Three co-production models were identified, each with a different vision of the role assigned to customers and of potential deviant behavior. They thus offer three organizational customer control methods that draw on mechanisms ranging from very tight control of customers based on limiting their role in production (AUTO 1) to complete delegation of the service production based on minimal behavior control (AUTO 2), with an intermediate model that combines co-production and shared organizational control (AUTO 3).

Tightly controlled co-production by AUTO 1, the manager of a fleet of private vehicles

Very strict control by the company from the description stage onwards and a clear definition of deviant behaviors

AUTO 1 has a founder with extensive experience in car rentals and the phenomena associated with this type of service (theft, accidents, vehicle breakdowns, delays, etc.). From the outset, it has specified a large number of requirements for access to the service, including a recent vehicle with low mileage to reassure the renter in regard to breakdown or safety risks, and tight control of the renter's identity by means of driver's license, proof of address, identity card and credit card.

In addition, the owner and renter both confirm that they will comply with the AUTO 1 rental agreement when they register on the website. This agreement itemizes all the conditions for accessing and using the service and gives a complete list of deviant behaviors on the part of the renter and owner, along with the corresponding financial penalties, payment of which is ensured by putting down a deposit. Table 4 below lists the various behaviors deemed unacceptable by the company. A description of the vehicle and owner is implemented by means of a “box”, an onboard device for tracking the vehicle and collecting information (mileage, speed, battery, etc.). Finally, AUTO 1 sets the vehicle rental price on the basis of a predetermined price scale.

Lateness on the part of the renter Parking the vehicle more than 5 minutes walk from the departure point No ignition key (forgotten by the renter) Loss of ignition key by the renter Vehicle returned with headlights on Minor damage to bodywork Vehicle interior not clean Burn marks or tears inside the vehicle Vehicle exterior not clean Failure to respect no smoking rule in vehicle Charge for refusal by bank Management of violations
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Table 4. Example of list of deviant behaviors in car-sharing

Minimal co-production in the rental and after-sale stages, arranged and controlled by AUTO 1.

The rental stage is organized without any contact between the owner and the renter, as a result of the mandatory installation of the box in the vehicle. On its website, AUTO 1 only provides information on the vehicle and its rental, with no information being given about the owner. The company also provides a vehicle availability and reservation schedule, informs the renter and the owner of the vehicle’s location, handles payments, makes available a history of rentals and payments, identifies any problems, arranges possible compensation for one or other party, and invoices them.

The whole process is fully defined and mainly managed by the company, through a model very similar to that of traditional car rentals. Co-production by the owner or renter is minimized in the renting and after-sale stages (monitoring compliance and use of the vehicle) and there is no direct contact between the two parties. Interaction between the company and the two customers is carried out by email, SMS and phone and allows advice, assistance and the monitoring of the customers’ actions and outcomes (vehicle return on time, mileage limits respected, etc.). The customers’ behavior is framed by the definition of the process and the use of the company’s tools at the various stages. The company views itself as the manager of a vehicle fleet that it does not own but whose reliability and proper usage it is responsible for. It also establishes a special relationship with the owners, to whom it offers services

facilitating the good maintenance of the vehicle (servicing reminder, prices negotiated with garages).

A transactional and industrial co-production model

The peer-to-peer car-sharing service offered by AUTO 1 is organized like a traditional car rental service, without any owner/renter contact. It can thus be described as transactional. It is also industrial in that it makes available a reliable vehicle with a process basically planned and controlled by the company with a view to avoiding any deviant behavior on the part of customers, whether intentional or not. Relationships exist exclusively between the company and each of the two customers – renter and owner. Control is based both on sophisticated technical devices such as the box, insurance, carefully defined compliance procedures and financial penalties in the event of deviant behavior by the customers. The company also insists on a description of the renter, owner and vehicle upstream, so as to check their characteristics.

AUTO 1's economic model is consistent with its stated aims: "car rental between private individuals, fully insured and no exchange of keys!" Indeed, AUTO 1 is the only company to have invested in setting up a free, compulsory onboard system for owners – the box – which allows it to directly control the transaction and monitor its customers' behavior. The company's revenue comes from a 40% commission on all transaction amounts, which also enables it to partly finance its technological investment (the box).

AUTO 2: a high degree of co-production with delegated control of customer behavior

Explicit co-production, but with little control by the company in the qualification stage

By contrast, AUTO 2 is characterized by a very simple and undemanding identification and qualification stage. All vehicles are accepted apart from luxury cars and sports cars, and at this stage all the company requires is a declaration of the registration number of the vehicle offered. Similarly, no documentation is required from the owner or renter, this verification stage being delegated to customers at the time of the rental. Only the means of payment is checked – credit card for the renter and bank details for the owner (for payment of the rental fees). Up until January 2012, there were no age limitations for the driver, the only condition being that the driver had to have held a driving license for at least two years. In addition, the vehicle does not have to be equipped with an onboard system. Finally, there is no online charter on the website specifying the obligations and rights of each party. The terms of the process are given in the form of answers to questions that explain the tasks of each party and role they play as owners and renters in the co-production of the service. What are the conditions for renting a car? How is this done? Extra benefits for well-behaved renters? The answers to these questions specify the behavior expected by the company and the owner, though in the form of advice: show your documents spontaneously; arrive on time for the appointment; don't eat in the car, etc. This clarification stage is important in that the role of the customers will be central in the renting and after-sale stages.

A high level of customer co-production and self-monitoring in the renting and after-sale stages

In the renting stage, the owner and renter are responsible for most of the tasks: they communicate in order to come an agreement on the terms of the rental and the exchange of keys; they meet to sign the rental contract and hand over the car keys; together they arrange for the return of the vehicle and determine any financial penalties (e.g. for exceeding the agreed mileage) or deduction from the security deposit; and they evaluate each other's behavior on the website at the end of the rental. These comments are posted on the website and are supplemented by AUTO 2 with a measurement of the percentage rate of response to messages (SMS, email) evaluating the responsiveness of the owner and renter in their interactions.

Monitoring of customer behavior is largely carried out on a reciprocal basis by the renter and owner, each of whom may advise and help but also evaluate the other party. This form of control, however, allows for mutual arrangements and adjustments between the customers, which the company is not necessarily aware of. Thus, a late return of the vehicle that does not inconvenience the vehicle owner may not be reported or charged for, even though the vehicle is no longer covered by the company's insurance.

A relational co-production model, with monitoring of behavior delegated to the customers

AUTO 2's peer-to-peer service is akin to an internet service for putting people in touch with each, combined with the provision of insurance for the car used. Once registered, owners and renters largely co-produce the service and carry out all behavior control, which is based on personal judgment and linked to the customer's experience (past experience or monitoring by means of comments posted on the site and reflecting the quality of the service for both owner and renter).

On the other hand, AUTO 2 specifies the behaviors expected in the co-production through its website and plays a central role in controlling the outcome of the transaction, insofar as payment must be made by credit card and via the site. Although the rental fees are set by the owners, the company nevertheless provides a simulator to help calculate the rental price.

These features are consistent with the business model chosen by the company. On the one hand, the financial argument is the means used by AUTO 2 to reach its car owner target, "Make a profit from your car. Your car can pay for itself." On the other hand, AUTO 2 is remunerated by taking 30% of each transaction between owner and renter. The secure payment system is therefore central for ensuring the owner's remuneration and the monitoring of the payment by AUTO 2.

AUTO 3: highly formalized shared co-production

A registration stage based on communication of the company's mission and values and extensive monitoring of customers

AUTO 3 is distinguished from the outset by a very complex website that thoroughly explains its mission and the values it supports and intends sharing with its customers. It describes its mission as being the promotion of a "more intelligent use of available car resources" and situates itself within the framework of collaborative consumption (Botsman and Rogers 2010). Making his car available for hire allows the owner both to render a service and to earn money, and in a way that contributes to sustainable development.

The AUTO 3 website provides extensive information to assist its customers, whether renters or owners, in the various steps involved. Presenting itself as a social network dedicated to car rental, it requires each "member" to draw up a profile, which it helps construct. The owner profile involves an identity check and the provision of photographs of himself and the car, but does not impose specific conditions in regard to the vehicle's age or mileage. These, however, are checked by its identification number and photograph, which Auto 3 monitors, rejecting, for example, any photo from a commercial catalog builder. An onboard system (Auto 3 box) may be installed but is not mandatory; it is, however, recommended if the service is used regularly. This system enables the vehicle to be accessed through the renter's phone, the key being inside the box. The owner determines the rental price. On his side, the renter must provide a legible photocopy of his driving license and fill out a full profile on the website, together with a photograph. The existence of the address provided is checked. Furthermore, the renter only has access to the rental if he has put down a deposit by credit card covering a six or twelve month rental period, as a guarantee of his commitment. He is also required to state his agreement to the terms of use, which specifies in great detail the rules of the service.

Regular reminders will be issued if the profile does not conform to the standards specified, if it is not "a quality profile". For example, an owner who draws up a profile without including photos of himself and the vehicle will be regularly chased up by the company. Customers are strongly encouraged to provide information about their personality and areas of interest. A cell phone number and email address are also required in the profile and are verified by sending a code by SMS and an initialization message by email to validate the registration. Any incomplete or suspect profile will be rejected in this crucial qualification stage.

Finally, although the company does not list deviant behaviors, like AUTO 2 it provides a specification of desired behavior in line with its values by means of answers to questions and its definition of good practice, in particular through the terms of use and a FAQ section.

Highly formalized co-production, linked to checking between customers on the satisfactory course of rentals

Once registration is completed and checked by AUTO 3, customers have to get in contact with each other. The renter contacts the owner whose price, geographical location and type of vehicle suits him best. His choice is also guided by the owner's profile and the comments left by renters who have already been in contact with the owner or engaged in a transaction with him. Similarly, the owner will have information about the renter through his profile and the comments left by owners who have dealt

with him. "Labels" set up by the company also describe customers' behavior. These distinguish members who have carried out specific actions and have a name and logo that gives a general idea of the member.

Once contact has been made, tenants and owners agree (via the website's messaging or by phone) on the price and the time and place of handing over the car (if it is not equipped with a box) at the beginning and end of the rental period. After using the car, the renter leaves the payment in the glove compartment (if there is a box) or pays the owner directly in the case of handing over the key. Then both parties post their comments on the website (or if they do not, will be strongly encouraged to do so by AUTO 3, because this is the primary means of monitoring customer behavior). AUTO 3 provides various resources for this co-production, and these are tools used by customers: a standard insurance contract, an information sheet at the beginning of the rental (vehicle, location, characteristics of the rental, price, etc.), an insurance certificate, a logbook for recording the condition and contents of the vehicle, help with pricing, telephone support, etc.

A relational co-production model regulated by a shared culture

AUTO 3's peer-to-peer service is a model that puts owners and individual renters in touch with each other and is based on the idea that its customers behave in a responsible manner. Indeed, upstream of the transaction, AUTO 3 sets up all the elements for creating trust and specifies rules of "good conduct". But once contact has been made, it is the customers who, on this solid basis, manage the service relation and their mutual behavior by making any adjustments required, while drawing on the various resources made available to them.

The main control mechanism is based on creating a sense of belonging to a community that shares clearly displayed, common values such as civility and calmness. Indeed, the key message of AUTO 3 is "Car rental with confidence and with insurance cover between private individuals." The way this trust is created is through the existence of "communities of trust", which consist of renters and owners who qualify themselves and monitor their own behavior. They are all "members" of the company, with which a customer may get in contact either to rent a car or to get information about another customer. In fact, the management of behavior is done through self-monitoring and internalizing the good practices and values of the community.

This co-production model involves community-type organizational norms and is consistent with AUTO 3's business model. The company's financing is based on an annual subscription from renters, which covers the services offered and the provision of insurance. In fact this formula encourages renters to use the service and the way of creating a sense of belonging by members and building up their loyalty. Even though AUTO 3 needs owners for its service to function, the main target is renters, for the founder of the business is committed to the principle of developing responsible consumption. Together with his associates, he has previous experience of car-sharing as the founder of a business in Paris that makes available a fleet of

cars for short-term rentals. Consequently he is familiar with the profile of renters who are attracted by this principle. He is less familiar with the car owners' motivations. He knows that the financial aspect is important, but does not currently use this lever, which he views as contradictory to the company's values.

Organizational control systems incorporating learning loops

The three companies have set up different organizational systems for monitoring and controlling customer behavior, all of them consistent with their co-production model. They all currently claim to have had good results and to have encountered few problems. In particular, intentional deviant behavior such as theft of the vehicle or vehicle parts (e.g. tires) have not occurred, even though they had been expected and feared. Settlement incidents have, however, occurred with the direct payments by renters to owners. Such intentional behavior is central to the control process, insofar as it can have a major adverse impact on the functioning of the process and even on the survival of these VSBs in the start-up phase. A number of instances of owners potentially at risk – through false addresses being given, for example – have been detected in the qualification stage. The companies for the moment seem to have only encountered unintentional behaviors, such as the late return of the vehicle, minor damage to the vehicle or negligence (e.g. failure to refuel the vehicle or clean the interior, items forgotten).

We also identified mechanisms that allow these control systems and the co-production models to be sustained and developed.

AUTO 1 changed its initial co-production model very little over the period of observation. It organizes the business and manages customers' behavior through a low level of co-production, high standardization of procedures, and considerable control by the company over customers' characteristics, actions and results. Customers have no room for maneuver, and either accept the system as it is or do not join it. Note, however, that in the important development stage of the car-sharing network, AUTO 1 is prepared to create tailor-made solutions for owners so to encourage rental: for example, leaving a rented vehicle in a private garage during its owner's holidays, so that it is not parked on the street for three weeks.

For AUTO 2, the strongly relational mode of co-production and the autonomy given to customers leaves customers with greater leeway. Transactions are very simple, and control by adjustment is very subjective since it is linked to the customers' own criteria. AUTO 2's control system, however, changed over the observation period in response to undesirable behavior on the part of customers. Firstly, it strengthened its renter qualification controls as of January 2012, requiring that drivers must now be 25 or older, in view of an accident rate three times higher among customers aged under 25. And second, AUTO 2 strongly encourages owners to make sure that the renter's name is the same as the name on the credit card used for payment, and it intends develop further control and security tools.

Finally, AUTO 3 differs from the other two companies in that the system relies on a logic of continuous improvement driven by the principle of community co-production. The company is very responsive to its customers even though the information supplied by the site is extensive and complex for them. It systematically analyzes all

the problems encountered by customers, which it becomes aware of either through its direct interaction with customers or through the exchanges that members have among themselves.

The FAQ system is thus directly fed by the issues raised by customers. It is therefore not a standardized FAQ system, but is closely linked to worries or difficulties experienced by customers. At the same time, customers' experiences have helped to develop the co-production model and the associated organizational control system. Originally, the company had explicitly planned on vehicle monitoring by means of a mandatory on-board box as well payment exclusively by credit card via the website. Taking account of customer feedback on this point has led to these two aspects being made optional from now on, bringing AUTO 3's operation in the rental stage closer to that of AUTO 2. The co-design of the co-production model is in fact recognized and encouraged by the company, which through its "Contributor" label notes that "members' engagement in a sustained dialogue with the company has enabled us to come up with a proposal to improve the website and the AUTO 3 service". Co-design is entirely consistent with AUTO 3's business model, which relies on the building of a community sharing the same values and providing car rental based on trust.

A summary of these findings is presented in Table 5.

Table 5. Co-production models and organizational control systems in peer-to-peer car-sharing

	Auto 1	Auto 2	Auto 3
Co-production model	A transactional industrial co-production model Production based on making the vehicle available, with minimal co-production, standardization of production procedures, no relationship between the customers.	A relational co-production model Production based on putting the two types of customer in contact with each other, strong co-production, resources available to customers (contracts, payment management). Mutual adjustment between customers and standardization of the outcomes of the co-production	A community co-production model Production based on the creation of a customer community, strong co-production, many resources made available by the company to manage interactions, develop the community and build trust.
Who monitors customer behavior?	Strong organizational monitoring , using technical and computer equipment, as well as by employees.	Significant monitoring delegated to customers and weak organizational control. Organizational control at the start of payment procedure. Reciprocal control by customers during the rental stage.	Strong organizational control in the qualification stage, then strong control by the customer community during the rental and follow-up stage. Organizational control at the beginning and end of the process by computer and staff. Monitoring implemented by the group (community culture) Interiorized control (self-monitoring)

What does the monitoring of customer behavior apply to?	The characteristics of customers and especially of vehicles Customer actions and outcomes	The characteristics of customers at the outset: Methods of payment Results: customer's revenue, given 30% commission on each transaction, damage.	The characteristics of customers and their values. Ritual monitoring at the outset. Customer "profiles". Actions and results, but not in their financial aspect.
When does monitoring occur?	Heightened monitoring upstream of rentals, regular monitoring during the rental and follow-up.	Light monitoring upstream of rentals, monitoring during the rental and follow-up stage.	Extensive upstream monitoring of the characteristics of customers and their vehicle by the organization and the community. Self-monitoring and reciprocal monitoring during the rental and follow-up Responsiveness by the organization to customers and analysis of problems encountered during rentals.
What type of customer behavior control process is used?	Routine monitoring and by the AUTO 1 expert in the event of problems. No current changes in the co-production model.	Routine trial-and-error monitoring by the organization and customers. Little alteration of the co-production model.	Routine monitoring, monitoring by the AUTO 3 expert and the community. Co-design of co-production model leading its evolution
What methods are used to monitor customer behavior?	Monitoring by organization: procedures, strong regulation (charter and insurance), technical equipment in the vehicle.	Monitoring by the market based on individual interactions (renters' and owners' comments visible to everyone).	Monitoring by the company's community culture: trust circle, label Monitoring by the market based on individual interactions: comments
Attitude of customers monitored Analysis not used in this study	Instrumental relationship Not known in this case because of absence of customer interviews, but it is a hypothesis we are currently exploring.	Instrumental relationship We have an interview that confirms this.	Moral involvement: positive sense of belonging to the values of the organization (internal culture) and the group (trust circles among customers) – based on interviews.

SUMMARY OF FINDINGS AND THEORETICAL AND MANAGERIAL IMPLICATIONS

Distinct forms of organizational control linked to different co-production models

Organizational control of customer behavior in services entails both building a co-production model and setting up monitoring systems. This theoretical framework has been mobilized in the context of peer-to-peer car-sharing.

It allowed us first of all to reveal the existence, for the same peer-to-peer car rental service, of three co-production models associated with different organizational control systems, distinguished in particular by:

- The nature and extent of the tasks entrusted to the customer, and therefore the nature and extent of co-production;
- The resources deployed in this co-production;
- The mechanisms for coordinating the work of customers and of the organization;
- The actors and targets of the control of customer behavior;
- Times, methods and processes of this control.

Three types of organizational control of customer behavior were identified.

– The first type is based on a co-production model that we have called **transactional and industrial**, characterized by production focused on the provision of the vehicle, a low degree of co-production by the two types of customer, standardization of production procedures and the absence of relations between customers. This model is associated with the exclusive control by the organization of the characteristics of the vehicle and of the customers and their actions and the outcome of the rental. This control system basically seeks to restrain intentional deviant behavior, in that the relative lack of co-production gives rise to only a low risk of unintentional deviance, since any customer failings or problems are quickly detected and corrected (via telephone assistance or e-mail and through financial penalties).

– In contrast, the second type of organizational control is based on a co-production model that we have called **relational**. Production is centered mainly on putting the two types of customers in contact with each other via the website, and is accompanied by strong co-production through the mutual adjustment of owners and renters, drawing on resources made available by the organization for managing the rental – a contract – and payment. This model is associated with control of behavior delegated to the customers themselves, who evaluate compliance with the framework provided by the organization, but also, and especially, assess the other party's behavior in the rental stage. This second type severely limits unintentional deviant behavior because of the absence of standardized co-production procedures and thus too the simplicity of the contact and rental processes for the customer. But it seems less able to limit intentional deviant behavior, apart from informing and warning customers about the possibility of its occurrence. Changes currently under way in the co-production model towards tighter control by the organization confirms this analysis.

– The third type appears as an intermediate form and is based on a co-production model that we have called **instrumented community**. Production is centered on creating a community of customers and is accompanied by strong co-production on the part of both kinds of customer, who draw on the various resources made available by the company to guide interaction, develop the community and build trust. This model is associated on the one hand with control of behavior by the organization (selection of profiles, payment by subscription, moderation, support, labels) and the other with control of behavior by the community of "members" (through comments, the circle of trust) and every customer. This form of behavior control appears to be able to seriously limit intentional deviant behavior (theft, willful damage, etc.), but involves customers in a major learning process to limit unintended behavior, and considerable customer support by the company, as we observed. Indeed, the production process seems to be complex, the website is complicated and calls for a large initial effort by the customer to understand the company's values, the devices for building trust and the development of the community. Our interviews with customers confirm that some of these devices are not understood, or even not used.

Moving towards a simplification of this model seems to be under way on the basis of customer feedback and integrating customers into the co-production model.

The question of the existence of alternatives to these three models arises as a result of our exploratory research. Although our study was not so comprehensive for the other French companies, it suggests that they belong either to the so-called relational model (two companies) or the community model (one company). This is, however, a significant limitation of our study, and needs to be corrected by further research. Moreover, the theoretical framework used, particularly the item concerning ways and means of control, leads us to hypothesize that only one other model is currently conceivable. Such a model would entrust to a third party (i.e. the market) the task of guaranteeing the characteristics and abilities of the customer in collaborative consumption. If this role can, for example, be played by insurers for car-sharing in view of the information they have on customers, there is nothing to rule out solutions common to several providers, including in various collaborative consumption or peer-to-peer relationship sectors. Quality certification of customers or the goods offered proposed is thus possible, with the certification purchased either by the service providers or by customers themselves.

Findings to be enriched by analysis of the acceptability of control procedures by customers and of their outcomes

Over and beyond the findings in relation to peer-to-peer car sharing, this study highlights the relevance of adapting the grid of types of organizational control to the monitoring of customer behavior. In conjunction with the co-production model of, it can account for devices used by service provider organizations for managing customer behavior, whether intentional or not. The research leads, first, to the question of the effectiveness of one kind or another of organizational control for a given service, and secondly, to the question of the acceptability to customers or different customer profiles of various types of organizational control.

While the analysis of devices from the standpoint of the organization allows hypotheses to be outlined on these two points (see, for example, the question of the attitude of the customer monitored in Table 5), these hypotheses must now be confronted, on the one hand, with the point of view of customers of other car-sharing companies and the changing market shares of different companies and, on the other, with the changes that their respective co-production models may possibly undergo in the near future. It is these two areas that our research will now focus on, through more interviews with customers and continuing follow-up of the companies studied over the coming months.

Moreover, the theoretical framework of organizational control needs to be refined, by further clarifying the ways of answering the various questions characterizing behavior control.

Finally, although exploratory, this research underscores, in the case of the three peer-to-peer car-sharing VSBs studied, the overall consistency of the co-production model with the objectives aimed at by the organization (and its founder) and its culture, business model and organizational control mechanisms used. This also seems to be a line of research worth exploring for evaluating, in the design stage, the creation of innovative services.

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