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Smart Cities and Sharing Economy

Paula Gori, Pier Luigi Parcu, Maria Luisa Stasi

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European University Institute

Badia Fiesolana

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Florence School of Regulation Transport Area
Robert Schuman Centre for Advanced Studies

European University Institute

Via delle Fontanelle 19

I-50014 Fiesole (FI)

Tel.: +39 055 4685 795

Fax: +39 055 4685 755

E-mail: fsr.transport@eui.eu

Web:

www.eui.eu/DepartmentsAndCentres/RobertSchumanCentre/Research/Programmes/FlorenceSchoolRegulation.aspx

Abstract

The concepts of smart city and sharing economy are at the centre of a number of current debates, which touch upon, among others, issues like the current urbanisation trends, the particular economic situation we are facing in the last years, the spread of connectivity and of new technologies and the innovation process in general.

This working paper looks at the different and common characteristics of both smart cities and sharing economy models, in order to explore their interaction and complementary dynamics. This is done by analysing the specific features of the two, as well as at regulatory and competition issues they trigger within our current legal framework. The final aim is to make some policy suggestions to the local governments, which are called to cope with these phenomena, and for which the latter could constitute a great opportunity to enhance the local welfare.

Keywords

Smart city, sharing economy, competition, regulation

Part I: Definitions of a smart city and the sharing economy: common and different features

1.1 Definitions

The smart city and the sharing economy are concepts that have gained popularity over the past few years and that definitely now draw great attention. There are a number of factors that have triggered the diffusion of the two, amongst which we can highlight the spread of connectivity, the evolution of design and the use of electronic devices and applications, the enormous appearance of online platforms and the difficult economic situation that has characterised recent years. Indeed, both smart cities and the sharing economy rely on the aim of better using resources, whether they are time or money. If it is true that waste is irrational, something that should be avoided, it is clear that a situation of economic hardship and necessity seems automatically to lead to a smarter and wiser management of goods, especially public goods, but also of private assets. Another relevant factor that has favoured both the sharing economy and smart cities is the current trend to urbanisation. Indeed, according to the UN World Urbanization Prospects 2014, while in 1950 only 30 per cent of the world's population was urban, by 2050 66 per cent of the world's population will live in cities.

Smart cities and the sharing economy comprise a variety of elements and one of the present peculiarities is that they both lack a universally agreed definition and are often defined through a list of characteristics, rather than through a comprehensive conceptual definition.

Smart cities is commonly described through a number of dynamic actions towards declared aims, for instance, environmental care, good governance, online public administration, urban planning, improved mobility, a better way of living, enhanced security, energy saving, etc. The *file rouge* that serves as the instrument with which to implement all those principles is connectivity.

According to the European Commission, smart cities are “*systems of people interacting with and using flows of energy, materials, services and financing to catalyse sustainable economic development, resilience, and high quality of life; these flows and interactions become smart through making strategic use of information and communication infrastructure and services in a process of transparent urban planning and management that is responsive to the social and economic needs of society*”.¹ Again, this European definition also appears to represent a list of targets rather than a closed conceptualization of the idea.

There are also numbers of definitions of smart cities in academic literature. One example which is sufficiently omni-comprehensive of instruments and aims, is provided by Caragliu *et al.*, who believe that *a city is smart when “investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance.”*² This is the type of definition that we will provisionally adopt to develop our reasoning.

The challenge in agreeing on a common definition of a smart city is also reflected in the very fact of affirming that a certain city is smart. There is, indeed, a trend to (self) attribution of smartness to a city when implementing something that is *per se* smart. However, for a city to be really smart, specific or limited sectoral improvements clearly appear to be insufficient. A smart city is a matter of *horizontally cumulative elements*, such as smart governance, smart mobility, smart living, smart use of natural resources, smart citizens, a smart economy, all taken together.

¹ European Innovation Partnership on Smart Cities and Communities, Strategic Implementation Plan, 14.10.2013.

² Caragliu A., Del Bo C. and Nijkamp P., *Smart cities in Europe*, Journal of Urban Technology, 2011.

A common agreement on a definition of the sharing economy is also not easily reached. The difficulty may depend on the very different business models that are comprised by a sharing economy, and also because a misleading use of the verb “sharing” tends, quite irrationally, often to eclipse the fundamental element that, in this definition, should certainly be comprised of the reality of an economic transaction. This is actually the reason why other more uncertain formulae, such as collaborative consumption, peer-to-peer businesses, or the access economy, are sometimes used in substitution for the sharing economy.

The sharing economy can be defined as the (economic) model in which demand and supply are immediately in contact through an online platform, in order for the supply side to directly provide services and/or products with an underlying aim to improve the use of assets and to reduce transaction costs. In other words, one typical characteristic of sharing economy models is the better exploitation of the use of pre-existing assets and the reduction of the costs inherent to all economic transactions, while this is commonly realized through the help of innovative online platforms. These platforms generally function as a multi-sided market, where the users are both on the demand and supply side of the platform and, as is typically the case in these types of markets, this creates and exploits a number of the effects of the network and externality.

The above definition may appear sufficiently wide to include all the different business models that are inspired by the sharing economy, but an element may still seem to be missing and must be recalled. We refer to the fact that, in the majority of sharing economy models, the sharing component is more a matter of access rather than of owning the goods (from the demand side). By way of an example, many sharing economy transactions refer to the right of access to goods that remain in the ownership of another subject i.e., access rights often substitute for the transfer of full ownership rights. What is traded in these transactions is not the property *per se* but, rather, the access to a good or a service for a limited period of time. Probably, adding the concept of access as an alternative to the transfer of ownership, could better represent, in our definition, of the true extent of the sharing phenomenon, without losing its essential economic dimension.

A sharing economy business can be both profit-oriented and non-profit oriented. Moreover, under the wide umbrella of the definition, we should include two major economic models: so called “asset hubs” and “peer-to-peer networks”. In the first case, a single company owns the goods or assets and sells access to users on a temporary basis (per-hour or per-day). In the second case, various would-be suppliers are connected with various would-be users. In very general terms, asset hubs primarily constitute an evolution of traditional business models, while peer-to-peer networks often create new ones.

Finally, different examples of the sharing economy models can be organized according to their core business:

1. *Individuals offering services through their own assets*: individuals increase the use of their assets by providing short-term services to other individuals, as is the case when offering a room on AirBnB, or a ride on BlaBlaCar.
2. *Private companies offering “micro” services*: in this case, private firms offer the possibility to use (rent) for short periods some of the assets that are owned by the company. Examples are the different car-sharing services, such as Car2Go.
3. *Peer-to-peer marketplaces*: platforms that give companies or individuals the opportunity to sell goods to other companies or individuals. This model can have different variations, for example, in the case of Ebay, we mainly find items produced by a fourth party, while, in the case of Etsy, the supply side is also the producer.
4. *Peer-to-peer labour services*: through these platforms, potential workers can offer their workforce for a specific task, as is the case for Taskrabbit, but the same could probably be said even for Uber drivers.

As is clearly included in the definition, one element that characterises all of these groups is that it is essential to have a platform as the intermediary that facilitates and follows the transaction between the parties.

Once a tentative definition is reached, or even just a comprehensive description of the two concepts, in the next paragraph we try to demonstrate how they enter into contact and explore their possible synergies.

1.2 Similarities

Smart cities and the sharing economy present a series of common traits: to begin with, they are both characterised by the very fact of sharing. It is quite immaterial whether the specific sharing relates to assets, goods or services.

A second major common element is that both smart cities and the sharing economy are driven by connectivity and enabling technologies. You cannot profit from a ride from an Uber driver, or access more information about an historical building by being in front of it without connectivity and a connecting device. Connectivity is not only the tool used for these innovations, but is also one of the main effects (characteristics), in the sense that it allows immediacy.

Although, in smart cities, the aims and needs are public (and are implemented through public policy) there is, as in the sharing economy, an aspect of innovation that is driven by the consumers'/citizens' needs. Smart cities and the sharing economy are thus perceived as instruments that improve the way of life, and that are challenged and stimulated by the users themselves. The fact that consumers' needs appear to be among the drivers of innovation, together with business and/or public needs, is what has been called the "consumerization" of information technologies³. The involvement of consumers/citizens goes even beyond this in reality, as they are part of the process of letting it work and having a strong interest in it. This is an element of particular interest, especially with regard to the direct and immediate "proof test" of the new applications/services themselves. Another common feature, which is strictly related to and is consequent of the latter, is that both smart cities and sharing economies foresee, and are structured around, the involvement of a well identified community, which is very often a clearly localized community.

The role played by platforms is another key issue that is at the core of the sharing economy, but also of smart cities. We have seen that, for sharing economy models, online platforms are essential. When we move to smart cities, the issue is twofold: on one side, a smart city, as a whole, could be seen as being a platform where the two sides are, respectively, the citizens and the government/private partners; on the other side, a number of services that lead a city to become smart work *only* thanks to an online platform.

The improved use of assets is another crucial aspect of both phenomena, and can be seen as one of the trigger elements (especially due to the particular economic situation of crisis in recent years). It is important to remark that for cities, which are always more congested, improving the use of assets implies a number of very positive consequences, for instance, energy saving, congestion reduction, making investments as profitable as possible, and the reduction of soil exploitation.

Environmental care, as an aim, may also emerge as a common element. While this is self-evident in smart cities, in relation to the sharing economy there are different opinions, and it seems that an exact calculation is still missing. Car sharing services, for example, should, in the long term, reduce private car ownership in cities, but it is still to be understood if this also means a reduction of the use of cars

³ Sundarajan A., *Peer-to-Peer Businesses and the Sharing (Collaborative) Economy: Overview, Economic Effects and Regulatory Issues*, Written testimony of the hearing entitled, The Power of Connection: Peer-to-Peer Businesses, held by the Committee on Small Business of the United States House of Representatives, January 15th, 2014.

in general, or not. Moreover, should it be true that consumers would tend to buy fewer cars, it must be analysed whether this may be an incentive for the speeding up of the market for, as an example, electric cars. Here, it is relevant to understand the weight of not having maintenance costs that bear on consumers' decisions, i.e., the influence of the alternatives between access and the ownership of goods that was discussed above. On the same theme, when thinking about the effect of models, like AirBnB and the environment, it seems that the possibility of having accommodation at a lower price (and that is maybe connected to low cost flights) may enhance human movement and thus carbon emissions. So, finally, if it is generally true that an efficient and closer to 100% use of an asset - thanks to the sharing economy models - may mean environmental improvements, an exact estimate of the impact of sharing economy models on the environment is still difficult to calculate.

Trust is another common element to consider, although with some differences. Both the sharing economy and smart cities often require a higher basis of trust in respect of their traditional counterparts. In the first case, it's about trusting the platform and its service, as well as trusting the private person who, through the platform, becomes an entrepreneur (e.g., Uber's drivers, Airbnb's hosts, Etsy's producers). Indeed, trust, rating and reputation are keywords in the sharing economy debate. In a smart city, it's more about the citizen trusting the public authorities - especially with regard to the use of their personal data - that, together with private partners, makes the city smart.

Last, but not least, and strictly related to trust, the use of data, its protection and its security are other delicate elements that affect both smart cities and the sharing economy. In both cases, data are used to offer targeted services to citizens/consumers and are at the core of the model itself. Although we will look at interactions in the following paragraph, it is worth mentioning that the link between the sharing economy and smart cities is unavoidable also in relation to data security and protection. For example, in a so-called data-driven urbanism, Zipcar owns data that are of great interest for the local administrations and their mobility plans. The issues of whether or not online platforms should thus share the data, and, if so, in what form, are of great importance and this is not at all self-evident as, on the other side, trust (and reputation) play an important role in the sharing economy business models (this is even more blatant in activities such as AirBnB).

Moreover, in both cases, the ability to collect and process data becomes an essential asset that may deeply influence market dynamics. In fact, the more data a company owns, the more it knows about consumers'/citizens' behaviour, and the more this may represent a barrier to entry to the market (or into the markets) for other competitors. This is true for sharing economy firms, but may become true also in case of smart cities. Indeed, should there be a company that is horizontally providing different services for a city, it will acquire a very large amount of data, which could then be used to establish its market power in the same, or even in other, markets.

Although there are a number of similarities, sharing economy models and smart cities also differ in some fundamental aspects as to their structure, mission and model, as well as in the regulatory and competition issues that they raise.

Smart cities are supported by the local government, which is actually the driver that believes, together with the citizens themselves, that intelligent management of a city could improve society's or consumers' welfare. In order to reach this goal, local authorities need to interact with private partners in order to settle the different services that make the smart city mechanism work. Public officials, in these cases, often operate, as we remarked above, also on the input they receive from the citizens. Brave traffic management, for instance, is only possible when analysing specific relevant data that may be owned by local transportation, social networks and car sharing companies, as well as collected thanks to specific devices that are installed by the city. So, in this sense, there is a sort of permanent triangulation between citizens, private companies and public actors.

On the contrary, in a sharing economy model, public policy objectives are not necessarily part of the core of the business. This does not mean that some of the sharing economy businesses do not have an impact on local dynamics, such as the case of bike and car sharing services, or AirBnB.

Nevertheless, in principle, smart cities and the sharing economy move from a different approach: based firstly on public policy objectives, and that are secondly, aimed at satisfying users' economic needs. This essential difference, however, albeit important and always to be remembered, is not a good reason not to attempt to exploit the many important elements of synergy, as we discuss in the next paragraph.

Part II: The interaction between Smart Cities and the Sharing Economy

Due to its potential, its peculiar features and a number of factors that match the concept of a smart city, the sharing economy certainly constitutes an opportunity for the cities. More specifically, by creating a favourable environment for the rise and spread of sharing economy businesses, a city may better and faster achieve the objectives and features that characterise it as being smart.

Moreover, cities are the “natural” habitat for sharing economic services, and this is primarily related to the very fact that the systems the online platforms build work best on the local community and at short distances. You can share food or bikes only if you are in, and move in the same city, and those sharing services are for the interest of the users, precisely due to the very fact that they are immediate, not only in the digital sense, in that they are just a click away, but in the physical sense that they are close by, and are almost ready to use.

As Sundarajan has said: “cities are already natural “sharing economies”--the space constraints and population density of urban living favours consumption that involves access to shared resources over asset ownership”.⁴

Sharing economic models may thus constitute one of the primary instruments through which a city becomes smart. The complementarity between smart cities and the sharing economy depends on the approach cities have towards innovation and on their forward-looking attitude, in general. It is hard to believe that innovation and, in this case, the spread of online platforms, could be stopped in some way, so, in most cases, it is simply a matter of how to integrate this in a city vision.

As previously mentioned, the relationship between smart cities and the sharing economy is bi-directional, the role played by the sharing economy for smart cities being also quite important, both directly and indirectly. In particular, sharing economy platforms directly contribute to the smartness of a city by providing services that match the needs of a smart municipality. This is the case with bike and car sharing, or with food sharing, for instance.

It should also be noted that sharing economy services may also contribute indirectly to the “economic” success of a city and this is particularly evident in regard to the attraction that they can assure. In other words, if a city is known to be innovative and open to those services, this may definitely attract interest, business opportunities, visitors, and can provide the city with the capacities to do so. More visitors not only means more tourism, but also the possibility to organise large events with the consciousness of being well equipped to host many people for short term periods. This would finally mean improving the urban economy. The very fact that a city is not open to sharing economy services could have the negative effect of being considered less attractive.

Let's now look briefly at the main issues that animate the regulatory and competition debate in smart cities and sharing economy services, and see what the issues are that arise from their complementarity.

In regard to sharing economy platforms, we are currently witnessing animated debates with regard to their competition with traditional businesses (and thus the relevant market definition) and, in

⁴ Sundarajan, A, *Peer-to-Peer Businesses and the Sharing (Collaborative) Economy: Overview, Economic Effects and Regulatory Issues*, Written testimony of the hearing titled, The Power of Connection: Peer-to-Peer Businesses, held by the Committee on Small Business of the United States House of Representatives, January 15th, 2014.

consequence, on the issue of how to assure a level playing field among the competitors. The first complexity of this discussion is to understand who the actors are that compete against each other. Sharing economy firms often claim that they are only a platform from which consumers and entrepreneurs are put in contact and from which they make transactions. Thinking, for example, of Airbnb, the question is whether the platform, or the single owners who rent their real estates (or part of them), are the actors that will eventually compete with hotels.

This is actually strictly related to the regulatory side of the debate. Sharing economy businesses normally operate in a less regulated environment, and have thus to comply with fewer rules and have fewer burdens. This is, for instance, one element, that is maybe not the most key one, in the clash between taxi drivers and Uber, or between Airbnb and hotels.

In general, however, it seems fair to recognize that both the supply and the demand side in a sharing economy business accept the risk of operating in an environment that is less regulated, and which could potentially also have negative outcomes. The taskers of Taskrabbit are undoubtedly much less protected than the workers who are officially employed and, at the same time, the clients who profit from their work, have less certainties about the outcome of the work that they demand. However, both groups know and accept this from the start of their interaction. As another example, Airbnb guests know that they may be disappointed by the living situation in which they will end-up, with relatively limited possibilities for complaint. They can, of course, leave bad feedback on the platform, but this will have an impact for potential future guests, rather than solving the actual problem of the present disappointed guest.

These risks are particularly present for those business models that Lisa Gansky had already defined, in 2010, as Own-to-Mesh⁵. They work on the interaction between three very different actors, namely: individuals looking for goods and services, the providers (often individuals) of such goods and services, and a third online platform that offers the place where the first two actors can meet and mediate the transaction between them. The risk that something can go wrong is part of the model.

The other model that operates in the sharing economy, which is defined by Lisa Gansky as being the Full Mesh model, appears when the supply side is the platform itself, as we are indeed talking about a company that owns an asset and lease it to consumers through micro-transactions, is probably much less risky. The peculiarity of Full Mesh models is that they do not necessarily compete with traditional businesses and, in some cases, even complement them. Zipcar is maybe the main example of such a model, and the fact that it has been acquired by Avis is not that much of a surprise.

Regarding regulation, sharing economy businesses, as has been the case for online platforms in general (think of Facebook, Google, Amazon, etc.) are examples of the consequences of the Collingdrige dilemma. In particular, they entered the market and had the possibility to become “big” in quite a short time, in part because of the absence of regulatory provisions. It has often been argued that this is part of the strategy of these firms, namely, entering the market and rapidly attracting consumers before the possible regulatory constraints emerges. The consequence is that if a need for regulatory intervention is finally perceived, this is going to be very difficult to adopt, as it would go against companies that are already large and that benefit from a large community of loyal customers.⁶ The choice is then mainly between introducing different regulatory rules, or in having the same rules for different actors (be it de-regulation on one side, or regulation on the other). No matter which the right decision is, it is clear that this opens up a complex debate on both market and product definition. It is to this debate that we turn in the final paragraph of the study.

⁵ Gansky L., *The Mesh: Why the Future of Business is Sharing*, 2010

⁶ Rauch D.E. and Schleicher D., *Like Uber, but for Local Governmental Policy: The Future of Local Regulation of the “Sharing Economy”*, George Mason University Law and Economics Research Paper Series, 2015

Part III: Policy considerations: the role of local regulation

At present, the regulatory debate encompassing smart cities and the sharing economy models is primarily linked to the role of local authorities. In fact, local regulation may constitute, in a number of cases, a barrier to the sharing economy companies. There is here a need to balance the advantages that such firms bring to the cities and the perceived need for regulatory intervention and consumer protection. As we have seen, sharing economy services may constitute an important instrument for implementing smart cities, but it is undeniable that, at the same time, they directly challenge the cities themselves in relation to their traditional regulatory policies. Even when cities allow, or encourage, sharing economy platforms, consciously deciding that the sharing economy contributes to making a city smart, they have to face new regulatory challenges.⁷

One first, albeit general, problem regards competition in the market. Online businesses, and specifically platform-based businesses, present a sort of winner-takes-all feature based on a relevant first mover advantage, especially for the Own-to Mesh models. Indeed, Uber and Airbnb, for example, entered the market and very rapidly gained an almost monopolistic position, so it would now be quite hard for potential new entrants to compete. Localized competition could maybe emerge in the future, in the sense that there could be some space for platforms offering the same service or product at a very local level, thus benefitting from a sort of natural trust in local consumers, exactly because of their proximity, but technical complexity may deter this possibility.

The potentiality for new “quasi monopolies” is inherent also in the smart cities panorama, although in a different form. A smart city model intervenes in a large number of sectors, such as transport, tourism, energy, public administration, health, etc., and, as previously mentioned, the *fil rouge* of this ecosystem is connectivity. Moreover, for the functioning of the mechanism as a whole, the more integrated the strategies are, the better the result. Indeed, as we remarked, fragmented intervention would mean single smart elements, but not a smart system. As a consequence, there may be a place for single industry players to present an overall offer that covers almost all the different opportunities, thus guaranteeing a horizontal platform for the cities. This may be of particular interest, for example, for telecommunications companies, which may play an active role, rather than only passively providing connectivity, or for manufacturers of networking equipment. Alternatively, the lead could be taken by new business players, usually native digital operators, who are able to provide innovative and highly technological solutions, which sometimes can also be disruptive. In general, such players may be in charge of all of the infrastructure upgrades that are needed to realise a smart city, and that constitute a one-stop partner for the local authority. If this is the context, it is extremely likely that a winner-takes-all dynamic raises and, as a consequence, this could also lessen the incentive for traditional operators to upgrade their infrastructures. In any case, the possibility for the establishing of a single dominant solution is a concrete element of risk for long-term market contestability and continuous innovation.

However, if there are new gatekeepers in the markets, it should be clear that, at the very least, they are exposed to the rule of special responsibility and the full control of competition law.

Smart cities and the sharing economy business models create a number of specific and unexpected frictions with the existing rules and regulations. The frictions generally derive from a misalignment between the rules developed for traditional ways to provide and consume goods and services at the local level, and new models that are enabled by the Internet and by technological developments.

In general terms, the frictions we are discussing can expand into many different fields of law, and contract law is one of them. Sharing models, especially peer-to-peer ones, require temporary and shared access, rather than ownership. In addition, the contract models used by the sharing economy

⁷ The vote (lost) in November 2015 in San Francisco calling for stronger restrictions on short-term rentals is just an example.

can vary, even with some recurring characteristics. To mention only a few, they stress the role of private autonomy and self-regulation; being placed on two sided or in a multi-sided market, they often do not follow the simple traditional logic for the provision of services/goods versus remuneration and, finally, they tend to use a series of related contracts, where the risk is modulated through the overall structure of the deal, rather than on the single contract. Labour law is another field that is relevant when new areas of conflicts can be raised. In many sharing economy businesses, the roles of the providers and users are not clearly separated. Moreover, the providers of sharing services are not considered to be employees but, rather, are freelancers, micro-entrepreneurs, or independent contractors. As a consequence, they suffer the erosion of essential worker protection rules, such as those concerning health coverage, insurance against injuries, paid vacations, etc., in broader terms, they bear the full risks of the economic activity that they provide. In any case, the de-professionalization of the provision of goods and services, if it, on the one hand, allows sharing firms to escape from compliance with sometimes obsolete regulations, on the other, it may also raise other concerns in terms of consumer protection.

In any case, the most typical problem for local regulation, is that the majority of sharing firms operate in ways that directly conflict with old, but existing, local regulation of real economy activities (transportation, housing, catering, etc.). For example, Uber certainly does not purchase taxi medallions, nor does it comply with pricing regulation; AirBnB very likely violates traditional lease terms, using residentially-zoned private properties for commercial activities, and does not comply with hotel requirements concerning guests' safeguarding, such as hotel fire standards, etc. In addition, it is extremely difficult to tax sharing activities, as they easily elude traditional requirements for taxation. Some, or many, of these rules, but clearly not taxation, may nevertheless be simply obsolete. A smart re-examination of local regulation and a new equilibrium is probably necessary and unavoidable.

Finally, concerns have been expressed with reference to privacy and data protection, considering that a peculiar feature of all smart and sharing business models is that the more data they are able to collect and process, the better they work. However, the precautions adopted by these firms do not always appear to be sufficient for the efficient safeguarding of these fundamental rights.

Another perspective, that of the private interests which are endangered by disruptive innovations that are brought about by the sharing economy models, need also to be taken into account. Practically, this is the most heated front of the conflict at present. The fact that sharing economy firms operate in a less, or rather in a non-regulated mode, exposes them to the accusation of exploiting unfair competitive advantages towards their competitors, that is, the traditional operators who are subject to existing local regulation.

If we look at concrete experiences, we notice that the reactions of local authorities to all these frictions are extremely varied. A number of local governments simply oppose the sharing economy businesses, by forbidding them, declaring them illegal or sanctioning them. The same is true of the courts; as the sharing economy businesses usually operate in some normative vacuum, it is not rare that stakeholders who have conflicting interests have recourse to court litigation in order to solve the frictions.

By way of an example, Uber's activities have been banned or are subject to serious restrictions in numerous countries. In some cases, as in San Francisco and in Seoul, it has been the city government that has imposed the ban. In other cases, in some EU member States, such as Belgium, Germany, Italy and Spain, the prohibition has instead come from a court. The question is so debated that judges from Spain and Belgium, confronted with the issue, decided to stay the proceedings and seek guidance from the Court of Justice of the European Union in regard to the legal nature of the services that are offered by Uber

However, there are also different approaches. In some cases, local administrations have opted for regulating the sharing economy businesses in a "soft way", with the aim, on one hand, to leave them

free to operate in the city, and, on the other, to maintain a level playing field with traditional operators and to protect customers.

Staying with the Uber example, we might mention the California Public Utilities Commission, which, in September, 2013, created a specific regime to apply to “*companies that provide prearranged transportation services for compensation using an online-enabled applications (app) or platforms to connect passengers with drivers using their personal vehicles*”.

In another sector, the municipality of Amsterdam, in February, 2014, decided to authorise the private rental of houses to tourists, although setting caps on the number of tourists and months, with the aim of reducing the regulatory uncertainty and of addressing the problems that may be raised by the diffusion of AirBnB in the city.

In general, it seems that the prevailing situation is still one of *wait and see*. Local authorities, faced with disrupting novelties and exposed to conflicting pressures, have not yet decided which general direction to take. The final relation between cities and sharing economy remains uncertain.

Part IV: Conclusions

As we have noted, above, the picture for local regulation, in the future, is still quite blurred. In our view, local governments, however, should not lose the opportunities that are offered by the sharing economy in order to better and faster realise a number of important policy objectives. In fact, the sharing economy involves industries that strongly contribute, or that could contribute, to the achievement of fundamental urban development policy goals. Sharing platforms can generate vast surpluses, both for producers and consumers, as they allow already existing assets to be traded and used in new and more efficient ways. In other words, as we have discussed, they reduce the traditional overcapacity of assets. This, in turn, creates important positive externalities: from an ecological point of view, sharing models are more sustainable; in addition, they give access to goods and services to a vaster number of users, and thus they could also become a powerful means for the redistribution of income from rich to poor neighbourhoods.

While using smart and sharing business models to pursue complex policy objectives, local authorities are called to make an accurate balancing exercise. On the one hand, they should encourage innovation and create a favourable scenario for the diffusion of new smart and sharing business models. Overlaps and conflicts between the different fields of law and/or regulation may create an environment that is hostile to innovators, and the lack of legal certainty may hinder investments.

On the other hand, local regulators should guarantee that sharing firms do not have unfair anti-competitive advantages over traditional players, nor that the fact that they operate permanently in a sort of regulatory vacuum, which could endanger the protection of some citizens’ fundamental rights. They should also contrast the creation of new modern monopolies.

In broad terms, local administrations have at their disposal a number of tools. They could intervene *ex ante*, by means of different types of regulations, by imposing the issuing of licences when really needed, or by entering into public-private-partnerships and by directly playing a fundamental role in the process of change. Alternatively, they can adopt an *ex post* approach and pursue, by requiring the intervention of specialized authorities, strong and timely anti-trust enforcement, where necessary, to protect present competition and/or future innovation.

Clearly, local regulators can also call on more variegated strategies, including economic incentives and the promotion of best practices for self-regulation, in order to orient and control novelties in the public interest. In any case, there appear also to be a necessity for consistency, because the fragmentation of too many different “smart” cities’ models and characteristics could create new difficulties for Governments and consumers. Common standards, universal principles, inter-

operability, in an environment that unavoidably remains in rapid movement, all appear to be necessary elements for the preservation of a balanced evolution of truly smart cities.

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Author contacts:

Paula Gori, Pier Luigi Parcu, Maria Luisa Stasi

Robert Schuman Centre for Advanced Studies, EUI

Convento, Via delle Fontanelle, 19

I – 50014 San Domenico di Fiesole (FI)

Email: paula.gori@eui.eu

Email: pierluigi.parcu@eui.eu

Email: maria.stasi@eui.eu