



## Urban Sustainability Project

# **The Sharing Economy and Sustainability**

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## Introduction

Previous papers ([Heb](#), [Eng](#)) in the context of the project on 'urban sustainability' have clearly shown that a sustainable future will require behavioral change to more sustainable lifestyles. This paper considers whether the sharing economy could be one of the paths to more sustainable urban lifestyles and if so, how cities can strategically engage with the sharing economy to advance sustainability.

The paper is based on the review of a wide range of academic and non academic resources, interviews with some of the leading personalities in the field and participation in webinars.

### 1. Shifting the focus to sustainable lifestyles

Sustainable living requires a behavioral shift by society to change consumption patterns to reduce energy and material inputs and to reduce the impacts of goods and services on the environment.

Improving production processes and the more efficient use of energy and resources has not managed to achieve the level of change needed for society to live within planetary boundaries. Attention is now shifting to the consumption side of the agenda. International organizations and countries promoted pro-environmental behavior, but 'greening consumption' may have been counterproductive by encouraging the purchase and ownership of goods. When climate change showed that incremental improvement through "greening" was far from reaching the target of not exceeding 2 degree warming and when the global footprint showed a huge and increasing overshoot, policy analysts and research institutions have focused not only on greening existing products and processes in the current economic framework but questioning the economic framework itself and seeking different lifestyles with a lower level of material consumption (eg Tim Jackson, SLRG Surrey).

### 2. The evolution of the consumer society and indications of a post-consumer society

Mass consumerism evolved post World War II and was driven by several trends: (Maurie Cohen)

- The baby boom, a rapidly growing population, dominated by the needs of young families with children
- The rise in employment and incomes, which released greater purchasing power
- The desire for an 'American Dream' following a war period of scarcity and austerity
- The rising role of the car as the vehicle for connectivity

These trends were harnessed deliberately by governments to promote mass consumerism as the way to achieve rapid economic growth. The consumer was therefore envisaged as a key to enabling the country to progress to a better life with higher incomes for all: the more you spend, the more you contribute to reviving the economy. The spread of suburban residential areas served by private car access was the symbol of personal and national success. Liberty to consume was associated with political freedom.

Those symbols stayed and flourished in a society based on mass consumerism until the 2008 financial crisis. It is clear today that the context has changed and there are indications that current trends could bring about a post-consumer society:

- Demographic trends in most developed countries are stable or even negative;
- Incomes have dropped, employment is uncertain and no longer secure over a lifetime;
- The role of connectivity by the private car has been taken over by digital mobile devices;
- The desire for an American Dream is no longer relevant to the millennials, who are seeking meaningful lives rather than multiple possessions.

These trends have been labeled as moving from 'bricks to clicks' ([Steven Strauss](#)) and could be harnessed to moving from a mass consumer to a post consumer society. Strauss identifies the loss of midlevel jobs as an additional driving force to seeking more affordable consumption patterns.

### 3. The sharing economy as a path to more sustainable lifestyles

The sharing economy is one promising avenue that could capture some of the post consumer trends and pursue a radical change of consumption practices. Through a shift from the ownership of multiple goods to access to sharing goods, space, skills and services as needed, consumers would require fewer goods, less energy and fewer material resources and consequently reduce waste. It also has the potential to contribute to social cohesion, engagement, empowerment, and strengthen links and connectivity. In an economy based on access, an increase in interaction has the potential to influence social norms and practices and to stimulate active citizenship in the community.

From an economic perspective, as the nature of employment changes, the sharing economy offers a more flexible and dynamic way to earn extra income. The growth of the sharing economy would lower the threshold for entrepreneurial activities, reducing or even removing transaction costs and allowing any digitally connected person to become an entrepreneur in his or her own time and space. Such growth could contribute to strengthening the local economy and to a better distribution of wealth.

### **What is the sharing economy, where did it come from, who is promoting it in what ways and why, and where is it going?**

Historically, there have always been many forms of sharing in societies; however developments over the past 5-7 years have increased exponentially in scale and importance in comparison to previous more traditional forms of sharing. Beginning with Craigslist and EBay which offered 2<sup>nd</sup> hand goods, after the 2008 economic crisis individuals were unwilling or unable to take out credit to own homes and cars, unemployment soared, and the financial future became uncertain. The sharing economy offered an alternative way of continuing to live at a high standard of living and it grew at an unprecedented rate. Venture capitalists invested heavily in sharing economy corporations such as Airbnb and Uber as they recognized the opportunity for profit. As it

grew harder for individuals to own goods, people joined the sharing economy for quick and convenient access to what they wanted but could not afford to own. After Airbnb (for tourist accommodation), Uber (for trip sourcing), Taskrabbbit (for task sourcing), and others were successful in the tough economic climate, more capital poured into sharing economy ventures. The leading global players in the sharing economy have largely been driven by profit motives, but others have joined primarily driven by an ethical agenda which sometimes included sustainability.

Digital platforms have played a critical role in the development of the sharing economy. They connect suppliers and consumers creating "prosumers". Digital connectivity connects people to services, harnessing the assets, skills and time of individuals through platforms or through social networks anywhere and at anytime across cities and across the world.

The sharing economy has spread quickly because platforms allow virtually anyone, anywhere to enter the economy by offering access to goods, space, skills and services. A sharing organization is able to expand at unprecedented rates by relying on the availability of existing underutilized assets or spare unused capacity, whether that be the ability to fix a broken pipe, or a spare room in an existing apartment. It does not require building new physical infrastructure. It has novel ways of cutting costs, by removing almost all transaction costs and by heavily reducing advertising by developing a peer review and reputation function. Sharing platforms generate trust between strangers. (Robin Chase)

The platforms themselves are becoming powerful and even monopolistic in determining how the sharing economy system operates. Huge amounts of data on all aspects of the prosumers are obtained through these platforms and are currently held by the major operators. It is not so easy for new entrepreneurs to attain the data needed to enter the market and succeed. Paradoxically, the democratic power of the platforms when unregulated may be leading to increasing power in the hands of few.

### Defining the sharing economy

The sharing economy is defined as a process through which an individual or organization harnesses excess capacity for more efficient use. Despite being solidly defined, the boundaries of the sharing economy are fuzzy and there is often overlap with other domains. There are several basic tenants of the sharing economy which may be the key to understanding how and why the sharing economy has become a powerful and growing economic reality:

- i. Harnessing the value of excess capacity and underutilized assets especially where they have high value or are rarely used goods and services

Through the sharing economy, idle resources can be turned into profitable resources through enabling access to them. Peer to peer transactions offer the connectivity and the financial vehicle for the utilization of excess capacity, allowing individuals to do business directly with one another. A car on average in America sits unused for 95% of its lifetime; this excess capacity could be utilized through car sharing. Similarly, individuals and families who own homes with extra rooms could harness that capacity to rent out

rooms or space. Individuals who are seeking additional income and have extra time and desired skills could hire out their skills.

## ii. Minimal transaction costs

The advent of the digital platform and person to person lending greatly reduces transaction costs because the platform makes the middle man (corporate entity) much more efficient or in some cases can even eliminate the middle man (as with blockchain). The platform simply displays options and provides user reviews from which the prosumer can directly choose, order, and pay for the service. The platforms gather relatively small fees for each usage of the platform but with widespread usage, that becomes profitable, so scale is an essential factor.

## iii. Access not ownership

The sharing economy represents a social shift away from the ownership of goods and an evaluation of the convenience and affordability of access. Consumers therefore seek how to obtain the needed service (eg. a ride to the supermarket), rather than the purchase or ownership of the tool (eg. car). Emphasis on functionality moves society away from the concept of purchasing capacity. This paradigm shift could enable flexibility of employment, where multiple changes may occur over a lifetime as work opportunities change in time or place. Access rather than ownership removes the burden of acquiring and selling accumulated goods (eg. Car, housing, equipment). It also enables greater resilience to change, whereas purchasing sinks capital in goods which are not then easily realized when needed.

## Categories of the sharing economy

Although all categories of the sharing economy harness excess capacity, they vary widely from for-profit, to social enterprise/cooperative, to non-profit, to community sharing, to public sector sharing.

- **For-profit sharing** involves actors who use digital platforms to significantly lower transaction costs to enable strangers to trade, swap, buy/sell, loan, rent, barter, invest, donate/receive goods. The for-profit actors extract a profit from the transaction. Prominent examples in the for-profit sector are Airbnb, Ebay, Uber, and Zipcar. Airbnb, for example, offers the opportunity to rent an apartment for a short period of time. The apartments are made available online with pictures, descriptions, and user profiles through the Airbnb platform and trust is built between prosumers and apartment owners through a system of peer-review. Airbnb receives a profit from a small transaction fee paid through the platform. Airbnb, as of December 2015 is valued in excess of 25 billion USD. Taskrabbit, on the other hand, which is a platform for skills and services, takes a significant transaction fee, adding 20% to the costs.
- **Social Enterprises/Cooperatives** are very similar to for-profit sharing. The essential difference is not in form, but in motivations: this category is motivated by social and/or environmental goals more than profit. Examples of social enterprises and cooperatives are tool libraries. A tool library may use an online

inventory and platform to show prosumers what is available and how much it will cost them to access, but the tool library may or may not receive revenues from the transaction. The main goal of the tool library is to build local community and reduce the need to buy new tools in the community.

- **Non-profit sharing** is similar to for-profit and social enterprises/cooperative with the large difference that they do not generate any profit as they are non-business actors whose main goal is to advance their mission. Yad Sarah in Israel is an example of non-profit sharing. The organization manages a community of volunteers to provide equipment, goods, and services to individuals in need.
- **Community sharing** is focused at the local or neighborhood scale. It can be organized differently although generally community sharing is either non-profit or informal. Almost all community sharing transactions do not involve money although they may use platforms to connect users to goods as with the other categories. The aims in this category are by nature more modest because the focus is to stimulate interpersonal interactions between community members. Sustainability is often an explicit focus of this group. Examples of community sharing include timebanks, seed libraries, tool sharing, repair and fixit clinics, community gardens, and community swaps. Community gardens, for example, require shared labor input from the community and then the yield of the garden as well as the opportunity to enjoy the garden is shared by the community. As is common in community sharing, there is no monetized aspect to the community garden.
- **Public-sector sharing** is very different from the other categories of sharing because by its nature it is highly regulated. Advanced infrastructure is often implemented in public sector sharing to help to create partnerships between residents or outside actors to facilitate sharing. Examples of public sector sharing include public libraries, community centers, multiple use of public buildings and open spaces.

## Stakeholders in the sharing economy

The sharing economy has been theorized, promoted, and implemented by a diverse group of stakeholders.

### i. Business Stakeholders

There are several prominent advocates of the sharing economy on the basis that it is a way to do business efficiently, to cut costs, transfer risks to users, and to generate profits. These stakeholders see the sharing economy as an economic force. A byproduct of this are social and environmental benefits that are a positive extra but not the main motivation for the business stakeholder interest in the sharing economy. This group of stakeholders is interested in the recognition of the system as a legitimate part of the mainstream economy and they are requesting regulators to remove impeding barriers.

Robin Chase, the co-founder of Zipcar and author of "Peers Inc" argues that the "Inc" "industrial strengths" like companies, governments, and institutions can best deliver economies of scale and have the ability to apply significant resources and talent to complex problems. "Peers" or "individual strengths" can tap into local networks to

understand community needs and can utilize social networks. Her philosophy of business has three tenants: using excess capacity (or sharing) makes economic sense, platforms make it easy to share, and individuals are great collaborators. Chase focuses on how the sharing economy has the potential to grow exponentially. To illustrate this she compares the growth of Airbnb to a hotel chain to show how with a platform and peers, the sharing economy can grow at unprecedented rates.

[Rachel Botsman](#) refers to an economic term, "the coincidence of wants" to describe the assets that one person wants and another person does not need. She refers to the utilization of this economic phenomenon as "collaborative consumption." She proposes that the sharing economy can cope with 5 kinds of vulnerability in existing companies: redundancy, broken trust, limited access, waste and complexity.

[Jeremiah Owyang](#) (CEO and founder of Crowd Companies) sees it as an innovative business model which evolved out of crowd sharing. He notes how platform operators are seeking innovative ways to expand their operations. An example is the possible expansion of Airbnb from short term to long-term rentals and to the whole tourist experience ([Bryan Chesky](#) at Aspen).

#### ii. Stakeholders with an employment/supplementary income agenda

The sharing economy is often seen as an opportunity for employment because it enables flexible work hours, can add extra sources for low income earners, and add temporary income to fill gaps between employment, and to enable the use of skills otherwise untapped. These stakeholders are not interested in social inclusiveness, but rather in income potential and affordability. Their participation in the sharing economy enables them to gain experience and to establish a reputation for quality and reliability. Task rabbit is an example of a company catering to this agenda.

There has always been freelancing, however it is now a rapidly expanding trend. By 2020 freelancers are likely to reach 50% of employment and so the welfare of freelancers is becoming a major issue facing society. Wyndham Rowan of the [United Kingdom Beyond Jobs](#) initiative, advocates intervention by governments to establish databases to promote and encourage part-time online employment.

#### iii. Stakeholders with a Social Agenda

These stakeholders approach sharing as a way to build community inclusiveness. They are not radical or looking to change the economic system, but instead want to encourage change from within the system. Often this requires better management of public and private spaces. (Foster and Iaione 2015) Often these stakeholders are focused on the local level and interested in the sharing economy as a small scale way for community building.

#### iv. Stakeholders with a Political Agenda—"Commoners"

The "urban commons" is a term which is evolving<sup>1</sup> around the discourse on how to manage public and private assets for the public good.

Some in this group of stakeholders can be radical. They aim to change the political operating systems and economic systems. This group questions private ownership and seeks to bring back public ownership by having governments claim privately owned entities. This calls for a radical reorganization of resources.

Other conceptions of the "City as a Commons" are far less radical. Sheila Foster of the Fordham Urban Law Center advocates for better management of private assets and for organizing scattered community practices. Foster and others see the excess capacity of publicly and privately owned goods in the city as an opportunity for social inclusion, for example, creating community arts spaces in abandoned buildings. These spaces could facilitate interpersonal interactions and community development.

#### vi. Government Stakeholders

The sharing economy offers both opportunities and challenges for governments. While some governments have promoted the sharing economy, such as the Seoul municipality, others have tried to destroy sharing economy companies, as in the case of New York City and Airbnb. Although the sharing economy can be harnessed to deliver ecological, economic, and social benefits, it is also hugely disruptive and poses regulatory and taxation problems for governments. Governments around the world are grappling with the changes brought by the sharing economy, some better than others.

#### **The impact of the sharing economy on the traditional economy**

Although the sharing economy is unlikely to eclipse what existed before it, it has already emerged as a hugely competitive and disruptive innovation. For example, in San Francisco competition from Lyft and Uber decreased yellow taxi business by 65% in 18 months. Some raise hopes that it will enable some reallocation of wealth from concentrations of capital to small producers and consumers.

The sharing economy is becoming an unavoidable reality that will put great pressure on traditional sectors of the economy. The two largest sharing corporations, Airbnb and Uber, have a combined valuation of 76 billion USD as of December 2015.

The sharing economy is squeezing some existing services. For example, Uber is disrupting the taxi cab system, because the platform makes Uber easier, more convenient and increasingly cheaper than taxis, some of which are protected by a regulatory system allocating limited rights (medallions in New York). Inevitably, existing services are going to have to adapt, join, or shut down when faced with competition from the sharing economy, which cuts down transaction costs to almost zero (Jeremy Rifkin).

Opinions on the major impacts of the sharing economy are divided. Some note that platforms enable people who want to work to find employment, demonstrate their capabilities and discover where opportunities lie and how they can harness them

<sup>1</sup> Foster and Iaione, 2015

(Peers). Others maintain that such open competition for the performance of tasks generates 'a race to the bottom', with decreasing payment for skills and results in income volatility. Critics maintain that the sharing economy has transferred risks once managed by companies to the workers.

A major impact of the sharing economy relates to worker's rights and their protection. For some, the sharing economy is a way to earn a little extra money, while still receiving a pension, social security, and vacation and sick leave from a primary employer. Freelancers largely working through the sharing economy however will receive payment for the task but without any social security payments or labor protection. That would constitute a severe loss of employment benefits and protection which have been developed as an integral part of the welfare state since the 2<sup>nd</sup> world war.

The impact of the sharing economy may very well be revolutionary in the same way that the web or the printing press were, pushing us into an uncertain but hopefully better future.

## The impact of the sharing economy on consumption patterns

### i. Urban context

The Eugene Memorandum pointed to the importance of the urban context for sustainable consumption:

'As cities build toward more compact, cohesive and livable communities, urban form must align with more collaborative patterns of human interaction, including consumption. People living in close proximity have more opportunities to share idle resources, to launch small-scale commercial ventures, and to build community engagement and cohesion. Sustainable urban neighborhood form fosters both informal and commercial exchange, augments social capital and builds stronger neighborhood networks and resilience in the process.'

The sharing economy thrives in an urban context since it requires physical proximity. As individuals own less goods, they are able to live in smaller dwellings and are more willing to share joint space. It is therefore particularly attractive to people seeking lifestyles in urban centers where property values are high, access to services and activities excellent and well served by public transport. It is attractive to employment which can use shared spaces for workplaces and meetings, requires high accessibility and services and does not require storage capacity. Airbnb claim that by bringing in income from the use of underutilized rooms in private properties, they have contributed to urban revitalization in inner urban areas.

At the same time, the sharing economy poses great risks to cities. Unregulated it could be deeply destructive without delivering substantial social or environmental benefits to urban dwellers. Airbnb, for example, when unregulated, has driven up the cost of housing in central urban areas. It has also enabled individuals or companies to purchase residential apartments solely for the purpose of short-term leasing which resulted in increased rates of rentals to the disadvantage of local residents. When regulated, however, as in Amsterdam or Portland, Airbnb can impose taxes through the platform and abide by city regulations designed to protect the housing market and discourage micro-businesses of Airbnb entrepreneur apartment owners.

### ii. Identity and status

Consumption has to a large extent replaced traditional elements which defined identity and status in society in the past, such as religion and culture. It is used to demonstrate self esteem and success in relation to others. It is therefore always cultural and comparative and therefore insatiable. Positional or conspicuous consumption provides a vehicle for exhibiting status and obtaining reward. It also provides a means for coping with threats to identity, by substituting maladaptation or a loss of happiness by elevated material consumption. Henwood and Pidgeon maintain that 'challenging identities that are currently anchored in unsustainable consumption practices and an economics growth ideology sets one of the most intractable changes in the ....sustainability area for government.'

Behavioral change as promoted by 'nudge' does not come to terms with issues of identity. It relates to the context for behavior, tends to give preference to short term actions and downplays identity and political organization. Some propose that it may be

reflecting a governmental unwillingness to face up to and challenge the basic paradigm underlying consumption.

However, symbols of identity and status seem to be changing among younger age groups (see below). Monetary reward and material possessions are being replaced by identity affirmation relating to sharing experiences. The sharing economy provides ways to anchor personal identity with experiences and relationships without the need for demonstrating status through the acquisition of material possessions.

### iii. Social norms and practices

Consumption patterns are strongly related to group affiliation. Social belonging has recognizable and organized socially shared characteristics and activities, involving a complex array of material and non material components. An individual adopts the patterns of the group of which he is a member or aspires to be a member and will change his patterns according to the expectations and practices of the group. Consumption patterns are therefore not only dependent on individual identity and status, as outlined above, but also on social norms and practices.

Elizabeth Shove and others have shown how social practice in household activities has changed over the years, for example, concerning the use of water for washing. Social practices, she claims, are entities with trajectories which evolve around routines and sequences. A shift in practice occurs as a group moves its routines and habits. The expansion of the sharing economy will therefore depend if sharing becomes an accepted social norm and practice, adopted by groups and communities.

### iv. Age and consumption patterns

Surveys of millennials (18-35 age group) have shown that this group of consumers are less interested in the acquisition of goods and do not want the burden of ownership. According to a [report](#) from the Brookings Institute in Washington, DC, millennials "display a greater reverence for the environment and less interest in the acquisition of things as opposed to experience." Whereas their parents measured life by ownerships, millennials are measuring life by experience.

The report, "[The Pursuit of Happiness](#)" found that that "millennials gather experience in the way that earlier generations amassed prized possessions." [HSBC Lifestyle Travel Loans](#) echo this trend by offering small loans for travel, highlighting how individuals are choosing to go into debt for fleeting experiences rather than the long-term ownership of goods.

Since millennials are highly connected by digital mobile devices, the sharing economy is particularly appropriate to their consumer preferences and capabilities. A report from Capital One on baby boomer consumption in Quebec concluded that the sharing economy is having a influence on consumption in cities with millennials leading the way of adoption and use of sharing economy platforms. Millennials are not only transforming their own shopping behaviors, the report concluded, but also those of their parents as their parents become more comfortable with digital technology.

The sharing economy could be greatly beneficial for older citizens who are no longer working, may have limited mobility, and are often searching for engagement in activities and community. If senior citizens were comfortable and competent in using sharing economy platforms, they could find cheaper alternatives to supply their needs. Senior citizens have not yet benefitted from the sharing economy partly because they need a higher level of digital competence to use them but also because platforms are not necessarily designed for their needs.

#### v. Income levels and consumption patterns

Even though low income communities could benefit greatly from the affordability of the sharing economy, spreading the sharing economy to lower income populations has been limited. Sharing in these communities has been associated with the stigma of lack of affordability, lack of financial success and therefore low-status. Although millennials are leading a move away from status associated with ownership to a focus on obtaining the least expensive, most durable, and most convenient options, this trend has not yet spread to low income groups and disadvantaged communities.

### Social Impacts of the sharing economy

#### 1. Community resilience

It is frequently claimed that the sharing economy can contribute to strengthening social connectivity and to building community networks. However, the level of community building through sharing varies wildly depending on the type of platform. Smaller scale sharing and community sharing initiatives aim to build communities through sharing. Often tool libraries will offer classes or workspace to encourage interaction between users. However, in the situation of Airbnb or Uber, the relationship between user and provider and users as a group is very distant and rarely if ever results in community.

Even where sharing platforms do not contribute to generating community relationships, they can contribute to strengthening community resilience. This is especially beneficial in time of need, such as providing immediate assistance in response to a disaster. [Airbnb identified available alternative accommodation for New York residents affected by Hurricane Sandy](#). Similarly, short term rentals can provide a solution for a temporary need, such as the provision of accommodation for a sports event or a conference, without the need for construction for which there may not be a continuing demand.

Sharing between strangers has raised questions concerning trust. Digital trust is built by verification of the authenticity of prosumers and by user reviews and discussion boards. As the sharing economy grows, mechanisms to build trust between strangers will grow and could contribute to a more connected and trusting society.

#### 2. Racial exclusion in the sharing economy

In order to engender trust, profit platforms make race explicit in personal profiles of prosumers, with pictures and descriptions of the individuals. Since users are able to select with whom they would like to interact, the bias of a population can often be expressed through the platform unfairly favoring some groups over others. Research has shown that factors such as race and ethnicity play a part in the decision to exchange

with one person over another. One Harvard study found that African Americans renting apartments in Manhattan on the Airbnb platform were at a disadvantage to Caucasians renting similar apartments in similar locals in Manhattan on the Airbnb platform. In addition, users were less likely to select non-central apartments of African American hosts than Caucasian hosts. (Edelman and Luca 2015)

### 3. Income equality

The sharing economy has the potential to lower the cost of living through decreasing the need to own goods and the costs associated with their ownership while at the same time to supplement incomes. However, many of the benefits of the sharing economy may in fact only be available to the owners of existing assets, such as apartments and cars, which they can offer to platforms, which would perpetuate existing inequality of capital assets.

Research on the distribution of sharing economy earnings and savings is mixed. There are studies that show that lower income users are more likely to benefit from the sharing economy and there are also studies which show that the majority of people who share are young, Caucasian and middle to upper income. The sharing economy could potentially offer lower income people with time and skills the opportunity to become upwardly mobile.

### 4. Privacy

A problematic impact of the sharing economy concerns the exposure of personal profile data and personal opinions which may reflect individual characteristics. The data is currently held by the individual platforms but suggestions have been made that such data should be accessible to all and not be dependent on the platform operator. Benefits would come from creating a 'portable reputation profile' for those offering to undertake tasks or offering assets and services. However, this could also expose personal data to public access. In the future, people who join the sharing economy may have to be willing to forgo privacy of their personal data.

## Environmental impacts of the sharing economy

The sharing economy has great potential to deliver ecological benefits through enabling more sustainable lifestyles. The sharing economy not only reduces the need for ownership of many items, but it also could reduce the desire on a societal level for ownership by building community and breaking down the identity affiliation to consumption. Potential benefits are decreased demand for new building and infrastructure, decreased pressures on natural resources and energy and reductions of emissions and wastes.

Research to date on environmental impacts of the sharing economy is inadequate, but there are indications that not all sharing activities result in the claims being made by the platforms that they contribute to sustainability.

The Urban Sustainability Director's Network (USDN) suggested a "Sustainability Filter" to give local governments a framework from which to judge the possible benefits and challenges in the sharing economy. This review relies on the USDN framework and a [report](#) from IDDRI to analyze some of the effects of the sharing economy on the environment.

Traditional car sharing and ride sourcing has been found to reduce emissions and materials where it increases car occupancy to the same destination. Car sharing and ride sourcing have been found to increase walking by 2% and biking by 6%. (Martin and Shaheen 2011) Where comprehensive mobility planning includes car sharing, emissions are likely to be significantly lower. Sharing is particularly beneficial when it provides a service for 'the last mile', enabling an efficient and convenient door to door service incorporating sharing and public transport.

Cohousing or co-living, which provide joint or communal spaces for joint or occasional uses, offer ecological benefits in that they reduce private household space. Green building did not achieve the anticipated energy saving benefits since household space increased in parallel to improving the efficiency of building materials. Sharing goods and spaces between households could reduce the need for individual facilities and may be particularly beneficial to one person households for the younger or older populations who want to live in city center locations, are willing to forgo car ownership but face high property values. An [example of co-living](#) is currently under construction in London, providing a transition between a hotel and a private apartment.

There are however some indications that the sharing economy can have undesirable effects on the environment, as shown by the following results:

Studies of some major car sharing companies, such as Uber and Blablacar have shown that they are becoming more convenient and cheap enough that customers will use these services instead of public transportation. Although still more sustainable than a private car, ridesharing is generally less sustainable than public transit. At the same time, Uber is working with public transportation providers in some cities to close the first and last mile gap for potential customers by developing Uber hubs near and at public transport centers to get passengers to places where the public transit system cannot. This could make it more likely that individuals will use public transit for the majority of their journey which will reduce emissions. Uber has already begun closing the gap between the first and last mile in several cities where it is already widely used and where there are significant gaps in public transit.

In terms of short term rentals, by reducing costs of accommodation, short term rentals are increasing tourism and attracting new demand. As a consequence, short term rentals currently may result in more CO2 emissions through travel by car or plane.

To garner ecological benefits from the sharing economy of goods, those goods must be durable so they withstand increased use. Studies also indicate that people use the sharing economy (used or borrowed goods) to access goods that they otherwise would not have bought.

A rebound effect may result in increased consumption, either sustainable and non-material, or non-sustainable and material. Two types of rebound consumption occur due to savings through a sharing activity: one is the increase in the quantity of consumption

of a good and the other is the use of savings for other forms of consumption. The sharing economy could catalyze net positive gains if the rebound effects are minimized.

## An Institutional Framework for a Sustainable Urban Sharing Economy

Although the evidence is far from clear, it seems that an unregulated sharing economy may change consumption patterns but may not promote sustainability. If sustainability is seen as a major goal and the opportunity of the sharing economy seen as a new business model which has the potential of leading towards more sustainable lifestyles, it seems clear that institutional frameworks are needed to guide it into the right directions and avoid undesirable consequences, whether social, environmental or economic.

Sharing economy platforms are becoming highly influential stakeholders with data on large numbers of users. The platforms are centers of power and determine the codes by which the prosumers can operate.

An institutional and regulatory framework needs to be built both at local and national levels to recognize the sharing economy as an economic driver, enable it to bring benefits and prevent undesirable consequences. Governments could create procedures that make it convenient for users, suppliers, and corporations to operate within the sharing economy legally and safely. Just like the mainstream economy, the sharing economy needs regulation to ensure the collection of taxes, consumer and worker safety, quality and safety of goods and services, prevention of adverse environmental impacts, insurance, and employment rights and benefits.

As the sharing economy grows, it is seen as a way of avoiding tax payments, both income tax and local or tourist tax. However, current taxation bureaucracy does not seem appropriate for micro entrepreneurs. New regulations and systems of tax collection are needed to enable the sharing economy to move out of the grey market.

The issues of safety and quality have not yet been comprehensively addressed to protect workers and users. Measures could be taken to ensure a level of quality so users can know what to expect when they enter into the sharing economy.

Insurance regulations depend on where the risks lie and who is responsible for them. In many cases, the sharing economy has transferred the risks to the users of the platforms. Uber is currently in a grey area of regulation in most cities which makes it difficult for insurance companies to define coverage. Airbnb, on the other hand, is somewhat more black and white in a select few cities (eg. Portland, Austin, Amsterdam) which have taken steps to regulate the company. The homeowner needs insurance for his or her property, so Airbnb requires insurance for the household owner against damages: a clear insurance risk that can be covered. At the same time, insurance is not simply a hassle, but also an opportunity. Peerby, in Amsterdam, for example, provides a free service but sees insurance as its revenue generator in the future.

Insurance is essential for guaranteeing liability for risk to users and suppliers as well as to cover damages of either party. Sharing organizations could issue obligatory insurance to both suppliers and users through the platform. Governments could create standards

to monitor and regulate the insurance infrastructure of the sharing organizations to ensure all parties are protected.

The freelance phenomena encouraged by the sharing economy, often referred to as the gig economy, can expose workers to great vulnerability because they are no longer protected by the state's mechanisms to protect employees. Uber maintains it is just a platform for connecting demand and supply of services, that the drivers are freelance and that the company has no rights or obligations to them. Taskrabbit commoditizes personal services at the cheapest rate and enables providers to benefit from far more flexible and independent lifestyles

There is currently no model to protect worker rights at the national level and cases may be tested through claims to the Courts. To ensure that employees are not exploited and protected through work hours, sickness and old age, local governments can work with sharing organizations to monitor the treatment of employees, implement an employee benefits system (ie. Healthcare, savings, retirement, sick and vacation leave) through the platform.

A government body could represent the rights and interests of prosumers in negotiating trade and employment agreements. In the settlement of disputes on the local, national, and even international, there needs to be a legal body with expertise in P2P and the sharing economy. Under the sharing economy, employees do not receive social security and pension rights as they would in traditional employment. Again, governments could work with employees and sharing organizations to incorporate the rights into the platform.

Open data policies are keys to the implementation of sharing economy regulation. Governments and sharing economy platforms hold data on individuals and trends and by sharing that data they can better protect people and monitor the impact of the sharing economy. Sharing data could also be key in ensuring more opportunity for individuals looking for work through the sharing economy. Wingham Rowan of Beyond Jobs, United Kingdom, has suggested that governments could use their leverage (as they do in the traditional economy) to display data on available jobs in the sharing economy, connecting people who want to use their skills, time, and assets to opportunities.

Also, one's reputation, built from reviews, on a platform becomes incredibly valuable in the sharing economy but at this point is platform specific. If one's reputation was their own digital property, in the form of a "reputation passport" they could easily enter into new sharing platforms to volunteer their services. At this same time, this measure would keep bad actors from moving to one platform to the next.

### **Models for institutional frameworks for local government**

The city is a meta-intermediary, linking sharing operators, aggregating micro entrepreneurs, providing quick and easy access for users.

In practice, two models of collaborative economies have developed in cities: some cities are taking a passive role to the sharing economy, waiting for sharing initiatives to begin and then supporting them once they develop; other cities are taking proactive measures

to initiate and enable the sharing economy. Amsterdam is an example of the former model. In Amsterdam, the municipal government has not played an active role in developing the sharing economy but it has enabled the economy and now it is using the existence of the sharing economy to brand itself as Europe's "first sharing city." Seoul is an example of the second model. The city government has taken steps to initiate the sharing economy from scratch by developing a municipal body for the funding and administration of 50 projects.

Figure 1 is a chart from the USDN report which outlines government roles in implementing the sharing economy ranging from low level of effort from authorities to a high level of effort from community led initiatives with no action on the part of the government to city led initiatives with implementation by the government. Figure 2 provides examples of how local governments could get involved again from a range of low effort to high effort.

USDN favors taking a holistic approach to enabling the sharing economy rather than approaching it in a piecemeal way according to the individual platform. They suggest cities should intervene, but leave the level of intervention up to the local government.

A low level of intervention could provide considerable support by making information available, through an inventory of multiple small scale dispersed services and by mapping its own assets which could be shared.

A medium level of intervention could positively advocate, plan and encourage sharing as a more sustainable lifestyle.

A high level of intervention could revise regulations, lead by example, enable trials for sharing platforms, give preference to shared services in tenders and promote data sharing with the platforms.





LOCAL GOVERNMENT EFFORT, ACTIONS AND ROLES			
LEVEL OF EFFORT OF LOCAL GOVT.		LOCAL GOVT. ACTION TYPE	LOCAL GOVT. ROLES
<div>LOW</div> <div>...level of effort for local governments...</div> <div>HIGH</div>	 <b>COMMUNITY-ONLY</b>	No action	No role for Local Government
	 <b>COMMUNITY-LED</b> FOR-PROFIT, NON-PROFIT, COMMUNITY	Facilitative actions	<ul style="list-style-type: none"> <li>· <b>Monitor</b></li> <li>· <b>Inventory</b> – assess, survey, map, identify gaps</li> <li>· <b>Promote</b> – celebrate, profile</li> <li>· <b>Fund</b> – provide grants</li> <li>· <b>Support</b> – other resources including space, in-kind advice, capacity building, leveraging others to provide support</li> <li>· <b>Make minor policy adjustments</b> – business as usual policies (including permits) adapted to sharing economy activities</li> <li>· <b>Convene</b> – bring together stakeholders</li> <li>· <b>Partner / collaborate</b></li> </ul>
	 <b>CITY-LED</b>	Preparatory actions	<ul style="list-style-type: none"> <li>· <b>Educate/outreach</b></li> <li>· <b>Advocate</b> – to higher levels of government</li> <li>· <b>Develop plans</b></li> <li>· <b>Make major policy and code adjustments</b></li> </ul>
	 <b>CITY-LED</b>	Implementation actions	<ul style="list-style-type: none"> <li>· <b>Demonstrate</b> – lead by example</li> <li>· <b>Develop programs / services</b></li> <li>· <b>Improve facilities / infrastructure</b></li> <li>· <b>Own</b> – manage and operate</li> <li>· <b>Regulate</b> – mandate, incentivize</li> <li>· <b>Enforce</b></li> </ul>

Figure 1

## EXAMPLES OF SHARING ECONOMY ACTIVITIES BY LOCAL GOVERNMENT ROLES

	ROLE	EXAMPLES	LOCATION
LOW EFFORT ↑	NO ROLE	Craigslist	Multiple cities
	LOW EFFORT FOR LOCAL GOVERNMENT	COMMUNITY-LED	FACILITATIVE ACTIONS
	Monitor	Airbnb impacts	Multiple cities
	Inventory	Community sharing assets	Portland and Flagstaff
	Promote	<ul style="list-style-type: none"> <li>Uber for first/last mile transit trips at St. Patrick's Parade</li> <li>Websites, social media, city publications promote Community Sharing</li> </ul>	Dallas Portland, Flagstaff, Hennepin County (MO)
	Fund	Tool library	Vancouver
	Support	<ul style="list-style-type: none"> <li>Pop-up retail</li> <li>Provide space for tool libraries in public libraries and community centres</li> <li>Research through The Sharing Project<sup>24</sup></li> </ul>	New York Multiple cities Vancouver
	Make minor policy adjustments	Kitchen incubator Short-term Rental Accommodation permit system and ordinances	Toronto Portland, Austin
	Convene	Local government staff convene Portland State University, SoMa EcoDistrict and the Neighbourhood Coalition to scale reuse	Portland
	Partner / Collaborate	<ul style="list-style-type: none"> <li>BeResourceful partners with LocalWork and GoodWill</li> <li>Bayshare partners with Department of Emergency Management</li> <li>Carsharing partnerships for stations at suburban transit centres</li> </ul>	Flagstaff San Francisco Multiple cities
HIGH EFFORT ↓	MEDIUM EFFORT FOR LOCAL GOVERNMENT	PREPARATORY ACTIONS	CITY-LED
	Educate / Outreach	<ul style="list-style-type: none"> <li>How to run a Fix-It Clinic</li> <li>Blogs and Facebook posts about how to buy smart, reuse, borrow and share, fix and maintain</li> </ul>	Hennepin County (MO) Portland and Flagstaff
	Advocate	City advocates that ridesourcing regulation should happen at local level	Houston
	Develop plans	(Under development) Integrated Mobility Plans	US cities – guidance from Shared Use Mobility Centre
	Make major policy adjustments	Short-term Rental permit system and ordinances	Portland, OR; Austin, TX
	HIGH EFFORT FOR LOCAL GOVERNMENT	IMPLEMENTATION ACTIONS	CITY-LED
	Demonstrate	<ul style="list-style-type: none"> <li>City governments join carsharing</li> <li>Sharing city data for transportation apps</li> <li>Catalyzing new snow removal app</li> </ul>	Multiple cities New York City; Portland Montreal
	Develop programs / services	Resourceful PDX	Portland
	Improve facilities/ infrastructure	Electric charging stations open to carsharing organizations	Vancouver
	Own	Bikeshare	Multiple cities
HIGH EFFORT ↓	Regulate	Short-term rentals and ridesourcing	Multiple cities
	Enforce	Short-term rental regulations Ridesourcing regulations	New York City & others Houston & others

Figure 2

## Conclusions

Although the evidence is fragmented and often contradictory, it is possible to conclude that the sharing economy potentially has a strong capability for transforming current unsustainable patterns of consumption to more sustainable lifestyles. The potential is for radical change rather than the incremental improvements achieved to date by technological progress and economic instruments, both of which bring improvements within the existing context of mass consumerism.

However, sustainability is not a main goal of most sharing economy activities and will not be realized unless government at national and local levels realize its potential benefits and risks and take actions to build positive institutional frameworks. When frameworks which remove barriers and incentivize potential benefits provide a context for the sharing economy to flourish, cities may find them a powerful direction to promoting sustainable lifestyles.

## Annex 1 Examples of Cities which adopted the Sharing Economy

### Seoul

As one of the first global cities to officially endorse the sharing economy, [Seoul is actively working to create a culture of sharing](#). Seoul is ideal for a flourishing sharing economy with a highly digitally connected and dense population with a population density of 17,255 people per square kilometer. Since being leveled during the Korean War, the city has industrialized at a blinding rate. As the city has become an extraordinary economic engine for South Korea, happiness levels in the city and nation have plummeted and air pollution has increased.

In 2013, with an initial investment of 450,000 USD, the Seoul municipality lead by Mayor Won Soon Park, responded to the quality of life and environmental problems facing the city: they took steps to harness the Sharing potential in Seoul to build community and reduce consumption with the Sharing City Initiative. In the City's view, building community has the potential to make people happier and reduce consumption to improve the environment. Sharing City is an ambitious initiative that empowers individuals, start-ups, and corporations to get involved and innovate in the Sharing Economy.

The city's comprehensive plan to build the sharing economy encompasses public awareness, business incubation, new regulation, and mobilization of the city's underutilized assets. One of the main objectives of Sharing City is for the Sharing Economy to be accessible for everyone across all sections of the city. Creative Commons Korea launched [Sharehub](#) which aggregates all of the information about how, what and where things can be shared. The city has the most advanced digital infrastructure in the world and so residents are quickly able to connect to tap into the Economy.

To stimulate the growth of innovative sharing organizations, the government created a process for vetting and designating sharing nonprofits and corporations. By putting the city's stamp of approval on select sharing services, the city builds public trust in the sharing economy and introduces citizens to proven and trusted sharing services. The city has gone a step further to promote sharing enterprises to generate buzz and strengthen the public's perception of the Sharing City as something that crosses demographic boundaries.

Public-private partnerships have been the lynch pin of Sharing City Seoul. The Seoul Municipality has designated and supported 57 sharing organizations and businesses since 2013 and it will increase its support by 600% from 2015 to 2018 to promote 300 businesses. Since 2012 when Seoul declared itself to be a Sharing City, the designated sharing businesses have flourish and have increased revenue by 600% since 2013. Even more, the city has provided 10 sharing enterprises with the funding to either launch or scale up their platform gives the enterprises a bit of financial breathing room to focus on building or enhancing their service. On a larger scale, the city has incubated approximately 20 sharing startups with office space, consultation, and subsidies. Providing space, guidance and some funding to sharing startups will allow businesses to take their service to the next level and the city to support innovative ideas and thinkers.

Internationally, the city has publicized its brand as the Sharing City. Branding Seoul as one of the great cities for sharing has been a powerful way to attract international attention, accelerate the city's sharing economy and position the city as a forward-thinking hub of innovation. This part of the initiative includes a Seoul Sharing Promotion Committee made up of representatives from a variety of sectors including academic, legal, press, welfare, transportation and more. Having a team of representatives from numerous sectors who are all on board with the Sharing City plan is a good way to extend the reach of the sharing economy, make sure that it's being promoted appropriately in the various sectors and ensure that sharing is part of the discussion when decisions within those sectors are being made. In addition, there is an International Sharing City Conference to further brand Seoul as an innovative locale and provides other municipalities from around the world a chance to see a sharing city plan in action.

In terms of impact, by 2014, the city has dramatically increased its sharing activities. 286 million won (\$275,000) has been awarded to 18 sharing businesses and sharing organizations. 282,356 people participated in car sharing with 1,070 cars have been dedicated to be shared and 359 shared parking lots. There are 779 government-owned spaces used for more than 17,000 activities and events. More than 13,500 Urban Home Stay rooms have been shared and more than 31,000 children's clothing articles shared. In terms of open data, 1,300 data sets shared via Seoul Open Data Plaza. 13 tool libraries have been created and 19 public shared bookshelves have been installed" –cite annual report

The government has made an effort to take away all of the barriers to sharing while at the same time monitoring and regulating the Economy.

## Amsterdam

Amsterdam has branded itself as the leader of urban sharing in Europe with its [Sharing City initiative](#). The city is naturally a good environment for the sharing economy because it is digitally connected, oriented towards sustainability, compact and neighborhood centric, and there is already a thriving sharing economy. The initiative aims to harness the potential in the city by gathering together a diverse group of stakeholders to engage as much of the city as possible. Since the Dutch are well connected digitally and they also have high levels of trust for one another, people are hopeful that the program will operate throughout the city through online apps. Sustainability is already an integral part of life and identity in Amsterdam. An alderman is specifically dedicated to sustainability and Amsterdam is one of the most sustainable cities in the world. The municipality encourages sustainable lifestyles with emission-free transport, the circular economy, and sustainable energy saving. Sustainable living is a priority for the municipality and the people and so the sharing economy has naturally flourished as a way to reduce consumption and build community.

The sharing economy has already been active for decades. Bike sharing, carsharing, goods sharing and knowledge sharing were all active in Amsterdam before the city defined itself as the Sharing City. Peerby was the main network that arranged for the

sharing of things, the citywide bike share arrange for bike sharing, and Car2Go and MyWheels were available for car sharing in cooperation with the citywide public transportation passes, and Konnektid existed for face to face knowledge sharing.

Share NL was created as a part of the initiative to be the knowledge and network capital for the Netherlands. It is designed to be a hub for the sharing economy that plays an essential part in linking parties and disseminating information. ShareNL intends to inform, inspires, and advise all stakeholders in the sharing economy from the consumer as well as governments and companies. In addition, ShareNL is writing a book, arranging meetups for people interested in the sharing economy, and organizing events from presentations to masterclasses. ShareNL and the municipality see great potential in the sharing economy. They aim to harness the sharing economy to deliver several elements of sustainable living. They aim to harness environmental benefits by reducing consumption with an access economy. Also, they hope to increase social inclusion with more face to face contact between neighbors. The sharing economy in Amsterdam could also increase mobility with fewer cars, bikes and boats. Finally, they envision a better use of public space and a startup hub which could allow everyone to be an entrepreneur.

Amsterdam has attracted many ICT firms due to its excellent digital infrastructure. The high technology industry has boomed in Amsterdam in recent years and Appsterdam was established in 2013 to connect entrepreneurs and developer to help the economy system continue to develop. In addition, the ecosystem is focused on solving urban problems with programs like Startup in Residence and Startup Amsterdam. Amsterdam has been very successful in harnessing the burgeoning ecosystem for the city's benefit. The digital infrastructure, and to a lesser extend the start-up ecosystem have been essential in the sharing economy's growth in Amsterdam.

This coalition of strong digital connectivity and a growing startup ecosystem has led to an ecosystem of big data. The availability of data has been essential in the growth of the sharing economy.

Beyond policy and technology, however, Dutch culture has played an essential part in the growth of the sharing economy. Dutch people are open-minded and generous. They are very open to sharing things, skills and transportation with people they trust.

Early criticism of the sharing economy has been that it only benefits wealthy people who are digitally connected and have the time and things to share. To combat this, Amsterdam has started a pilot to connect lower income people in Amsterdam to the sharing economy. The program targets the 170.000 people who hold a "stadspas" (the city card for the elderly, lower income people, and kids of lower income parents). In its early stages, the program has worked to bring this demographic into car sharing and has instituted a meal sharing plan with the elderly. In 2016 there will be a comprehensive survey to test the efficacy of this program.

Amsterdam has been at the cutting edge of regulating the sharing economy to enable its growth and minimize its adverse consequences. On the one hand, the city stimulates the sharing economy and on the other hand the city regulates the economy by adjusting rules and regulations. For example, in a push to have fewer abandoned boats on the

canal and to make people use their boats more, the city is making legal to sub rent boats on the canals if the boat is under 7 meter.

The most notable example of [Amsterdam's sharing economy regulation has been with Airbnb](#). Instead of banning Airbnb as New York City did, the city made a law that one could only sub rent their house for 60 days or less to ensure people were not just buying houses and inflating the real estate market for Airbnb. Furthermore, to make sure that the city was still receiving the appropriate taxes from Airbnb rentals, the city arranged with Airbnb to include the tourist tax directly in the Airbnb agreement, so every tourist renting a house by Airbnb also pays local tourist tax.

The city is still working out issues of liability and insurance with the sharing economy. Insurance companies in the Netherlands are open to the changes that are coming to the industry with the sharing economy but they are slow to make changes. As a consequence, sharing platforms such as Cycle Swap (bike sharing) and Barqo (boat sharing), are making their own insurance products.

## Vancouver

For Vancouverites, sharing it is an integral part of belonging to the city. Much like Amsterdam, the city is particularly well designed for the sharing economy because it is densely populated and so people live in close proximity. Also, much like Amsterdam, Vancouver has always had a culture of being environmentally conscious and active. Already, there is an active sharing community. At the same time, the city has had strong and visionary political leaders who have the political will to create the policies that help ensure the infrastructure needed for a sustainable city are built and policies are in place to enable the sustainable growth of the economy.

Vancouver in particular is a hub of regional and worldwide technological innovation which has helped to grow the sharing economy. The municipality has bolstered the culture of technological innovation with hackathons. In addition, Vancouver was one of the first cities to initiate a digital strategy. Apps like Vancity have been developed by the municipality to help to connect citizens to sharing economy resources.

Vancouver is heading for an increase in the sharing economy with a Greenest City 2020 Plan which aims to lower Vancouver's carbon emissions by 2020. The sharing economy is a key tool in this vision.

The sharing economy in Vancouver, although supported by the government, is also largely informal and face to face. 58% of sharing happens between peers and one of the major reasons cited for this was trust. The sharing economy in Vancouver seems to be developing more neighborhood to neighborhood rather than citywide. This operates with the trust that naturally exists between neighbors rather than trying to create trust across groups.

## Bologna

Perhaps the most radical example of a sharing city is Bologna. In the past year Bologna has gone beyond sustainability to [reinvent the city](#). After citizens found that they were unable to make a simple change in the city, ordering park benches, the Mayor decided to revolutionize the city and rebuild it into a collaborative commons. In 2014, Mayor Merola instituted the Regulation on the Collaboration Among Citizens and Administration for the Care and Regeneration of Urban Commons. The Regulation was intended to govern the creation of an urban commons in which citizens will be connected to one another and empowered to affect change in the city.

The revolutionary Regulation outlines several essential principles to ensure the functioning of the city as a commons including: mutual trust between citizens and between citizens and the administration, civic autonomy over initiatives, informality between the citizens and the administration, transparency, and sustainability to ensure that the environment is protected.

The regulation is radically non-hierarchical. Any citizen, regardless of title or status, can start an initiative and be listened to by the administration. Each initiative will be managed individually by a collaboration agreement which ensures each party, the citizen and the administration, remain responsible to one another and to the initiative.

The city, under the Regulation, is explicitly responsible for fostering creativity as social innovation is essential to the urban commons. In addition, the city will promote urban creativity and social cohesion. Essential to this, is digital connectivity and open data. To this end, the Regulation states that the city government must provide citizens with the data, tools, and connectivity to innovate and communicate.

Although there are restrictions on the management of collaborative initiatives, there is no restriction on the number of or type of collaborative initiatives. The Regulation allows great latitude in the directions that the collaborative initiatives can take.

Public place is a feature of the Regulation. In it, the responsibility for public space is shared between the citizen and the administration. In addition, this Regulation extends out to the regeneration of old buildings in which it offers an opportunity for citizens to get involved and share responsibility in the regeneration process.

Education is a key element of the urban commons in Bologna. The Regulation outlines public courses and University programs to educate the public of urban governance so each citizen is informed to become an active participant in city governance.

To provide the citizens with the physical tools they need to innovate, the Regulation outlines a sharing system run by the city in which the citizen can borrow what they need. Furthermore, the city will help to cover costs of activities that they cannot lend the materials to facilitate.

To ensure the success and betterment of the commons, the Regulation outlines the reporting, measurement, and evaluation of the projects. Furthermore, the Regulations carefully stipulates where insurance liabilities lie as well as conciliation procedures if a disagreement arises.

## Portland

Portland, too, has much in common with cities like Amsterdam and Vancouver. The city is dense, biker-friendly, and highly digitally connected. Like Vancouver, are environmentally oriented as they enjoy the outdoors and are surrounded by beautiful nature. Portland, too, has had strong and innovative city leaders.

Despite its similarities to other sharing cities, Portland is unique because despite the success of grassroots movements, the car sharing giant, Uber, strong armed the government into passing regulation in favor of Uber.

Still, the grassroots sharing movement in Portland is taking hold and having a large effect on the city and on consumption habits. The grassroots movement is moving Portland in the direction of city as a commons. The organization Community Supported Everything, for example, was born out of the Occupy Movement and aims to empower citizens to make local change. In many ways, the Community Supported Everything organization is similar to the Bologna regulation: both aim to move their respective cities in the direction of a collaborative commons.

[Community Supported Everything](#), as a grassroots organizations, has more modest aims that the Bologna Regulation. Its target area of change is the universities. The motivating idea of the organization, however, is that small changes can address large challenges.

## San Francisco

The sharing economy was born in San Francisco and the nearby Silicon Valley. In San Francisco, the sharing economy is one of many points of innovation and economic activity. As such, the sharing economy has developed not necessarily as a tool towards sustainable lifestyles but rather as a lucrative industry.

San Franciscan municipal leaders have been very proactive and supportive of the sharing economy. In 2012, the city initiated a working group to research the economic and regulatory opportunities and challenges in the sharing economy. In particular, the municipality is interested in the sustainability of the sharing economy.

The major sharing companies such as Airbnb and Uber thrive in San Francisco. At the same time, there is a large grassroots sharing ecosystem. The city is densely populated and has one of the highest costs of living in the world so sharing is quite natural for San Franciscans. Also, San Franciscans are some of the most environmentally conscious and socially liberal Americans so they are particularly amenable to communal and environmental practices.

## France

Taxation has been addressed most progressively by the French government which has release a document from the Finance Committee in the Senate on taxation in the sharing economy. The report suggests building a system to automatically and electronically report all revenue in the sharing economy to tax authorities. Only annual revenues of more than 5000 Euros will be eligible for tax. Under 5000 Euros, the logic is, the revenue could be needed for maintenance of the shared car or home.

## Annex 2 Sources of information and references

*The JIIS Urban Sustainability Center is grateful for conversations with:*

Neal Gorenflo, Shareable.net

Damien Demailly, IDDRI

Leslie Ng, Vancouver Municipality

Chris Diplock, Vancouver Sharing Project

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Sinclair Besombes, The French Senate

Dirk Pilat and David Gierten, OECD

Sinclair Besombes, French Senate

## Sources

Agyeman J et al 'Sharing Cities' Paper prepared for Friends of the Earth 2013

Shareable and Sustainable Economies Law Center 'Policies for Shareable Cities' 2013

Owyang Jeremy 'Sharing is the New Buying' and 'The New Rules of the Collaborative Economy' Crowd companies and Vision Critical

Woskow Debbie 'Unlocking the Sharing Economy' 2014 and the UK government response 2015

UK Department for Business, Innovation and Skills

Nesta UK Making Sense of the UK Collaborative Economy 2014

Scenarios for a Collaborative Economy 2025

Matofska Benita 'What we Know about the Global Sharing Economy' Compare and Share 2015

Botsman Rachel 'Defining the Sharing Economy: What is Collaborative Consumption and What Isn't' 2015

Schor Juliet 'Debating the Sharing Economy' Great Transition Initiative 2014

Latitude 'The New Sharing Economy'

"Amsterdam Europe's First 'Sharing City' - Collaborative Consumption." *Collaborative Consumption*. N.p., 04 Feb. 2015. Web. 19 Sept. 2015.

Diplock, Chris, Charlie Easton, Kevin Craib, Francisco Luna, David Kurbis, Gala Milne, Kieran Wallace, Trevor Ricard, Paul Rauric, and Michael Boch. *The Sharing Project*. Rep. N.p.: n.p., n.d. Print.

ShareNL Web. 19 Sept. 2015.

Gibson, John, Matthew Robinson, and Scott Cain. *CITIE, City Initiatives for Technology, Innovation, and Entrepreneurship*. Rep. Nesta, Accenture, Catapult, June 2015. Web.

"Greenest City Action Plan." *Greenest City Action Plan*. N.p., n.d. Web. 19 Sept. 2015.

"I Amsterdam." N.p., n.d. Web.

"New Documentary Celebrates Amsterdam as a Sharing City." [Shareable](#). N.p., n.d. Web. 19 Sept. 2015.

N.p., n.d. Web.

"South Korea Archives - Collaborative Consumption." *Collaborative Consumption*. N.p., n.d. Web. 19 Sept. 2015.

"Community Supported Everything Incubates Social Change in Portland." [Shareable](#). N.p., n.d. Web. 20 Sept. 2015.

"Regulation on Collaboration Between Citizens and the City for the Care and Regeneration of Urban Commons." *www.comune.bologna.it Working Group Appointed by the City of* (n.d.): n. pag. Web.

"Airbnb Raises \$1.5 Billion in One of Largest Private Placements." *WSJ*. N.p., n.d. Web. 20 Oct. 2015.

Bouvard, Michel, Thierry Carcenac, Jacques Chiron, Phillippe Dallier, Jacque Genest, Bernard Lalande, and Alberic de Mongolfier. "L'Economie Collaboartive: Propositions Pour Une Fiscalite Simple, Juste et Efficace." Commission des Finances.

- Martin, Elliot W., and Susan A. Shaheen. "Greenhouse Gas Emission Impacts of Carsharing in North America." *IEEE Trans. Intell. Transport. Syst. IEEE Transactions on Intelligent Transportation Systems* 12.4 (2011): 1074-086. Web.
- "Uber." *About*. N.p., n.d. Web. 20 Oct. 2015.
- "Uber Just Beat Facebook's \$50 Billion Record." *Fortune Uber Just Beat Facebooks 50 Billion Record Comments*. N.p., 31 July 2015. Web. 20 Oct. 2015.
- "Vacation Rentals, Homes, Apartments & Rooms for Rent - Airbnb." *Airbnb*. N.p., n.d. Web. 20 Oct. 2015.
- "The City as a Commons Conference" IASC, Bologna, Italy
- "Millennials Care About Experiences, Not Stuff." *PROFITguide.com Millennials Care About Experiences Not Stuff Comments*. N.p., n.d. Web. 13 Oct. 2015.
- "Millennials Infographic." *Goldman Sachs*. N.p., n.d. Web. 13 Oct. 2015.
- The Pursuit of Happiness: Creating Meaningful Brand Experiences for Millennials*. Rep. N.p.: ZenithOptimedia, n.d. Print.
- "Who Are the Millennial Shoppers? And What Do They Really Want? | Accenture Outlook." *Who Are the Millennial Shoppers? And What Do They Really Want? | Accenture Outlook*. N.p., n.d. Web. 13 Oct. 2015.
- Winograd, Morley, and Michael Hais. "The Number: How the Drive for Quarterly Earnings Corrupted Wall Street and Corporate America." *Choice Reviews Online* 41.05 (2004): n. pag. Web.
- "Behind the Bargains: How the Sharing Economy Impacts Health." *Wellesley Institute*. N.p., n.d. Web. 16 Dec. 2015.
- Edelman, Benjamin G., and Michael Luca. "Digital Discrimination: The Case of Airbnb.com." *SSRN Electronic Journal SSRN Journal* (n.d.): n. pag. Web.
- Foster, Sheila, and Christian Iaione. "The City as a Commons." *SSRN Electronic Journal SSRN Journal* (n.d.): n. pag. Web.
- "Green Growth in Cities." *OECD Green Growth Studies* (2013): n. pag. Web.