

The sharing economy: make it sustainable

Damien Demailly (IDDRI),
Anne-Sophie Novel (journalist and author)

A REGENERATING SHARING ECONOMY THAT PROMISES MUCH FOR SUSTAINABILITY

Reselling, giving, swapping, short-term renting and lending—with or without monetary exchange and whether practiced between individuals or through companies or associations—are all models that can help to increase the usage duration of resource-consuming goods. They are part of a real sharing economy that is undergoing regeneration due to the development of digital technologies. “Shareable” goods account for about a quarter of household expenditure and a third of household waste. If sharing models could be operated under the most favourable conditions, savings of up to 7% in the household budget and 20% in terms of waste could be achieved.

FROM AN INTUITIVE SENSE OF ENVIRONMENTAL BENEFIT TO THE CONDITIONS FOR ITS REALIZATION

The environmental balance sheet of sharing depends on several conditions that are highly specific to each model. In general, we can see the emergence of the following issues: *the sustainability of shared goods*, e.g. renting may enable a reduction in the number of goods produced provided that the rented good does not wear out much faster; *the optimization of the transport of goods*, because the long distance transport of goods is reduced while transport over shorter distances increases; and *consumption patterns*, sharing models can be the vector of sustainable consumption but also a driver of hyperconsumption.

MAKING THE SHARING ECONOMY A SUSTAINABLE ECONOMY

Public authorities should build an economic and regulatory framework that is favourable to virtuous models. Emerging initiatives that enable the exploration of new avenues should be supported through: increased visibility, funding and incubators, and the adjustment of certain regulations. Sharing economy entrepreneurs should analyse and improve their environmental performance. Such entrepreneurs are best placed to develop practical solutions and to use their influence to produce eco-designed goods and promote their recycling. *Users* have a particularly important role in the case of peer-to-peer models. Environmental impact depends heavily on user behaviour and on the values that drive their actions. Currently, purchasing power is the main user motivation, although environmental considerations are not absent.

Copyright © 2014 IDDRI

As a foundation of public utility, IDDRI encourages reproduction and communication of its copyrighted materials to the public, with proper credit (bibliographical reference and/or corresponding URL), for personal, corporate or public policy research, or educational purposes. However, IDDRI's copyrighted materials are not for commercial use or dissemination (print or electronic).

Unless expressly stated otherwise, the findings, interpretations, and conclusions expressed in the materials are those of the various authors and are not necessarily those of IDDRI's board.

Citation: Demailly, D., Novel, A.-S. (2014). *The sharing economy: make it sustainable*, Studies N°03/14, IDDRI, Paris, France, 30 p.



The authors wish to thank Eric Vidalenc, Véronique Benony, Gabriel Plassat, Alain Geldron, Eric Lemerle, Philippe Quirion, Marine Albarede, Gérard Cornilleau and Xavier Timbeau, Anne-Laure Buisson, Renaud Attal, Denis Baupin, Baptiste Legay, Flore Berlingen, Cédric Ringenbach, Michèle Debonneuil, Benjamin Tincq, Antonin Lénoard and Prabodh Pourouchottamin. The authors also thank Virginia Boutueil for coordinating internships for students at the *Ecole des Ponts ParisTech* on the subject of car sharing as part of a joint reflection, and all of IDDRI's team for their critical proofreading and administrative and logistical support. Finally, the authors would like to thank the forty participants involved in IDDRI's April 2014 workshop.



This work has received financial support from the Environment and Energy Management Agency (ADEME); it has also benefited from French government support through the French National Research Agency in the framework of the “Investissements d'avenir” programme, under the reference ANR-10-LABX-01.



For more information about this document, please contact the authors:

Damien Demailly—damien.demailly@iddri.org
Anne-Sophie Novel—asnovel@gmail.com

ISSN 2258-7535

The sharing economy: make it sustainable

Damien Demailly (IDDRI), Anne-Sophie Novel
(journalist and author)

INTRODUCTION	5
SUMMARY	7
1. THE ECONOMIC AND ENVIRONMENTAL PROMISE OF SHARING	11
1.1. Economic impact of shareable goods	11
1.2. Environmental impact of shareable goods	11
1.3. From impact to economic and environmental potential	12
2. DIFFERENT MODELS OF THE SHARING ECONOMY	13
2.1. Redistribution	13
2.2. Mutualization	15
2.3. Shared mobility	16
2.4. Diversity of sharing models	18
3. FROM AN ENVIRONMENTAL PROMISE TO THE CONDITIONS OF ITS ACHIEVEMENT	18
3.1. Redistribution	19
3.2. Mutualisation	20
3.3. Shared mobility	21
3.4. Cross-cutting conditions	22
4. MAKING THE SHARING ECONOMY A SUSTAINABLE ECONOMY: THE ACTORS THAT MAKE THE CHOICES	23
4.1. The role of public authorities	23
4.2. The role of entrepreneurs in the sharing economy	25
4.3. The duality of consumers	26
5. A BETTER UNDERSTANDING	26
ANNEX	27

INTRODUCTION

Is it rational to own a car when 92%¹ of its time will be spent in a parking space? Does it make sense to buy an electric drill and then to use it only once a year? Or to consign a pushchair to the attic when it is no longer needed by the youngest member of the family, where it simply sits gathering dust? For proponents of the “sharing economy”, such actions represent nothing less than an underuse of material goods and assets, and therefore constitute both an economic and environmental waste.

Reselling, giving, swapping, renting or lending items... while the sharing economy is not new, it has been reinvented through the “digital revolution”. Whether we are talking about direct exchanges between individuals or through private companies, associations or public services, with or without monetary exchange, many practices can enable the optimization of the use of goods through “sharing”. In parallel, the concept of the sharing economy—or the related concept of collaborative consumption—is gaining prominence,

a fact that is being reflected by the structuring of a movement of entrepreneurs and by public action plans in a number of “pioneer” towns.

Is the sharing economy a tool for ecological transition? The main objective of this report is to analyse the environmental potential of the sharing economy, considered in its full diversity, and the conditions for the realization of this potential.

To conduct this analysis, IDDRI carried out a literature review and organized a workshop on 10th April 2014 that brought together around 40 actors with different views on the sharing economy, including associations and companies that are innovative in this area, companies with traditional business models that are exploring new opportunities, researchers and representatives of the public authorities. Numerous interviews were also conducted.

Action research on the sharing economy is gradually increasing, particularly in France. This report has benefited from the input of other projects (the *Sharevolution* programme of the French organisation *Fing* or the “*Territoires en partage*” group of the *Fabrique écologique*) and the expertise developed by the *Ouishare* movement. We thank this community of actors for their invaluable support, and we hope that this report will help them to build a sharing economy that is truly sustainable.

1. Centre d'études sur les réseaux, les transports, l'urbanisme et les constructions publiques (French Study centre on networks, transport, urban planning and public buildings) (2008). *L'auto-partage en France et en Europe. État des lieux et perspectives*

SUMMARY

The environmental promise of sharing

Cars, electric drills, pushchairs that the little ones have grown out of... are just a few examples of the many material goods that we produce that we may intuitively regard as “underutilized”. Reselling, giving, swapping, short-term renting and the lending of items: are all examples of the sharing economy—whether monetized or not, between individuals or through companies or associations—that can help increase the length of use of such products and to promote their usage to their full technical potential. It would seem intuitive that such models could provide the same levels of service while reducing the production of goods and thus also reducing the associated extraction of resources and the generation of waste.

Clothing, vehicles, furniture, telephones, televisions, toys, sporting goods, home improvement and gardening tools, are all examples of the “shareable” goods that represent about a quarter of household expenditure and a third of household waste. If sharing models could be operated under the most favourable conditions, savings of up to 7% in the household budget and 20% in terms of waste could be achieved.

Sharing models are diverse and undergoing a regeneration

Models of redistribution (reselling, giving and swapping) are already common—especially giving to associations, relatives and friends—and concern all types of goods, at varied intensities. Today,

these models are being regenerated through Internet platforms such as *eBay* or *leboncoin*, which already attract large numbers of users, or through the emergence of new business models in which companies no longer sell goods, but instead rent products for extended periods before recovering and reusing them.

Mutualization models (renting and short-term lending) are, however, much less developed, not least because there are far fewer goods that easily lend themselves to such systems. Typical products that suit the application of this type of model include books, DVDs and DIY tools. Again, these models are being regenerated by the emergence of peer-to-peer models such as the French website *Zilok*, which is very locally oriented, relying on the close proximity of lenders and renters.

Carsharing, a specific case of mutualization, is a model that is struggling to grow in the car market where ownership remains the standard. Alongside the well-established rental companies such as *Avis* or *Hertz*, new innovative players are appearing in the carsharing field, such as *Autolib* or *Mobizen*, along with private rental platforms such as *Buzzcar*, *Drivy* and *Deways*. Car manufacturers are also starting to take an interest in carsharing. In parallel, carpooling is undergoing changes with the rapid emergence of Internet platforms such as *Blablacar*.

All of these models are contributing to the building of a real sharing economy, one that is not new but that is being revitalized by the development of digital technologies and the associated reduction in transaction costs. It is bringing hope that the

environmental potential of shared goods can one day be achieved. However, in reality, exactly how environmentally beneficial are these models?

From an intuitive environmental benefit to the conditions of its realization

The environmental benefit of the sharing economy is sometimes raised by the “entrepreneurs” of the sharing economy and more often by the proponents of the concept, however the reality is less clear-cut than we may at first presume. Overall judgments are difficult given the wide diversity of models and goods. There are few studies available to review and the research gap is wide. It is important to note, however, that the current environmental performance of these practices, which will a priori continue to increase, is less important than the conditions for improving their sustainability.

The *quality* of the shared good appears to be a key requirement for the environmental sustainability of sharing models, whether for redistribution, mutualization or even shared mobility. Sharing models must prioritize goods that are the most durable on the market (e.g. recycled and long-lived goods), or even—in the case of business to consumer (B2C) models where companies can influence or control production well upstream—bring new eco-designed goods to the market that are fabricated with the intention of being shared. Two other key conditions for the sustainability of sharing models concern the optimization of the transportation of goods and the consumption modes they are associated with. Indeed, in the latter case, it appears that sharing models can either be a vector for a sustainable, less material type of consumption or, conversely, a vector for the hyper-consumption of goods.

While the current models of the sharing economy do not always meet all of the required conditions, it appears that mutualization models and those based on giving are presently the most beneficial from an environmental point of view.

The carsharing example, which is the most studied model, shows in particular that the environmental contribution derived from sharing models is not limited to the potential optimization of vehicle usage: an additional benefit is that a shared car is not used in the same way as a private car, with sharers travelling by car up to half the distance travelled by car owners, favouring public transport options instead. Does this mean that sharing in general, by distancing users from a good, through changes in the way we consider property, opens up new areas for innovation that could encourage ecological transition? Can sharing transform the way we use goods?

These questions remain open and any answers that can be obtained at this stage relate to specific examples.

Finally, it is important to note that the potential “rebound effect” can be seen from two perspectives: the environmental perspective, for which the rebound effect is not positive (greater impacts), and the economic and social perspective that sees it as positive (the provision of more services).

Making the sharing economy a sustainable economy

An analysis of the environmental sustainability of sharing models reveals conditions that are drivers of action and choice—consumer choice, the choices of public authorities and entrepreneurs. The sharing economy can contribute to sustainability if this is the goal that its actors set.

The role of public authorities

To make the sharing economy sustainable, public authorities must first build an economic and regulatory framework that is favourable to “virtuous” models—in reality, this is usually done in parallel and generally lags behind the action being undertaken. Specifically, ecological taxation and regulations to promote eco-design, recycling and efficient public transportation reinforce the value and environmental benefit of sharing.

As part of a strategy to highlight successful models from an environmental point of view and to support them, our analysis found that public authorities should support sharing initiatives, provided that they are emerging and small-scale, because it allows us to explore new avenues. Local and national authorities should be encouraged to monitor all sharing economy models to shine a light on practices that may otherwise go unnoticed. Then, once projects have moved beyond a certain scale, entrepreneurs must make efforts to analyse their environmental balance sheets and to make their own improvements.

How can sustainable models be supported? The demands of the sharing movement can be grouped into four action areas:

- Enhancement of visibility through communication campaigns or labelling;
- Funding and incubators for innovative projects;
- Adaptation of regulations to benefit new models;
- Encouragement of public authorities to implement best practices.

Note that certain “semi-public” institutions, such as in France the *Institut de l'économie circulaire* or the Economic, Social and Environmental Council

(ESEC), could create a working group on the sharing economy, and make it a place for dialogue between all actors for the study of environmental opportunities, and for the proposal of regulatory changes and incentives for private actors to integrate environmental considerations into their business models.

The role of entrepreneurs

Entrepreneurs (associations or companies) and sharing economy proponents in particular, often use environmental arguments to promote their activities. In doing so, they run the risk of greenwashing. To optimize the sustainability of sharing economy models, entrepreneurs must start out with a better understanding of the necessary conditions that must be addressed so that their models can achieve sustainability.

What types of action can therefore be developed? The provision of long-term renting could avoid frequent asset renewal, websites for the resale of goods could enhance the value of the most sustainable products, carpooling platforms could target the commuter market, etc. Sharing entrepreneurs are best placed to develop practical solutions. They must also use their influence in the area of production, encouraging the tailoring of goods to make them particularly suited to sharing and recycling, and to limit the distances involved in goods transportation. Sharing entrepreneurs and proponents must therefore set targets to optimize their environmental impacts: environmental protection must not only be used as justification, but become an actual objective, and within the coalitions of businesses in the sharing economy, an inner lobby aiming to ensure sustainability could be given an equivalent position to that of the outer lobby that works to change regulations.

The role of consumers

Peer-to-peer models exacerbate the role and impact of individual consumer choice. The environmental contribution of these models depends largely on user behaviour and on the values that drive them. While some are driven by the search for “personal development detached from symbolic consumption”, others are “hyperconsumers”. In truth, the majority of users simultaneously display both of these tendencies to some degree. Studies into the current motivations of users involved in the sharing economy or in collaborative consumption converge on the idea that the main motivation of users is to optimize purchasing power, although environmental considerations are not absent.

A better understanding

Even though models of the sharing economy have been around for a long time and are currently

Box 1. Definitions of the sharing economy

Rachel Botsman, a prominent advocate of the sharing movement, acknowledges that the “sharing economy lacks a shared definition”. Indeed, the existing definitions vary in their level of inclusivity, depending on whether they:

- focus solely on the sharing of material goods (which is the definition applied in this article);
 - include exchanges of services and property;¹
 - include the sharing of food and housing;²
 - or even include—in its broadest sense—the sharing of all “commons” through cooperatives, public services, the participatory democracy, etc.³
- In addition, definitions vary in scope, depending on whether or not they incorporate:
- “early” models that make limited use of digital technology, although the borders are thin and shifting (Novel and Riot⁴ include such models, while Rachel Botsman does not);
 - B2C models: Botsman does not exclude these initiatives, whereas others—who are committed to the idea of “individual empowerment”—only take account of practices that take place between individuals within their definition of the sharing economy (Shareable);
 - monetary or commercial exchange: for some, exchanges that result in personal financial gain cannot be classified as sharing⁵, taking the view that only non-monetized practices deserve to be associated with the term, or monetized practices that are managed by structures that are primarily non-profit, such as associations.
 - It appears that the definition of the sharing economy is not free from political considerations, and that discussions on definitions reveal contrasting “ideological views”.⁶

1. Rachel Botsman and Roo Rogers (2011). *What's Mine Is Yours: The Rise of Collaborative Consumption*.
2. Shareable & Sustainable Economies Law Center (2013). *Policies for shareable cities*.
3. Agyeman et al. (2013). *Sharing Cities. Briefing for Friends of the Earth*.
4. Anne-Sophie Novel and Stephane Riot (2012). *Vive la co-révolution*, Editions Alternatives.
5. Matthew Yglesias, “There is no ‘sharing economy’”, Slate.com.
6. Adam Parsons (2014). *The sharing economy: a short introduction to its political evolution*.

undergoing a great regeneration, the literature in this area remains poor and many policymakers and project developers involved in the field are now insisting on the need for a better understanding of the potential of the sharing economy and its impacts. This is true for its environmental impact, but also for its economic and social impacts (see annex). At a time when the first tensions are beginning to emerge, such as taxes and regulatory issues involving *Airbnb*, research must anticipate and analyse these tensions, helping to put a dialogue in place that can support the emergence of avenues for action.

1. THE ECONOMIC AND ENVIRONMENTAL PROMISE OF SHARING

We produce many goods that—intuitively—seem “underutilized”. Our intuition tells us that by increasing the usage duration of these products, and by ensuring that they are used to their full technical potential, it is possible to reduce the production of goods while maintaining the same level of service; this would be an effective solution for reducing the consumption of many resources—especially energy—and the generation of waste. The anticipated benefits are both environmental and economic.

There are a multitude of systems, old and new, that can help optimize the usage of produced goods by households and that can be grouped within the concept of the sharing economy (see Box 1). Reselling, giving, swapping, lending, renting... are some of the many sharing practices that are being reinvented by the “digital revolution” which is giving new momentum to practices carried out between individuals or through peer-to-peer systems, with or without monetary exchange. Proponents of this *high-tech* version of the sharing economy also put great emphasis on its potential to build a sustainable, resource-efficient economy.

While the diversity of these systems and their environmental impacts is discussed in later sections of this article, we firstly estimate the orders of magnitude of the economic and environmental impact of shareable goods and of the economic and environmental potential of sharing.

1.1. Economic impact of shareable goods

The “household budget” survey conducted by the French National Institute of Statistics and Economic Studies (INSEE) provides highly disaggregated data on the average annual expenditures of French households, by differentiating many types of goods. For each category of goods we can judge the relevance, or otherwise, of sharing; that is to say, of the practices of reselling, giving, swapping, lending, renting, etc. We can say that “consumables” such as food, tobacco and energy, and services such as health, education or housing cannot be shared, or at least not according to any of the definitions of sharing that are examined in this study.

From a budget analysis of French households, it emerges that shareable goods account for about 25% of expenditure.²

1.2. Environmental impact of shareable goods

Based on data from the French Environment and Energy Management Agency (ADEME³), it appears that shareable goods account for about one third of household waste.

2. In this calculation, carpooling practices are not taken into account: thus we do not include fuel expenses, even though they are shared by the carpoolers.

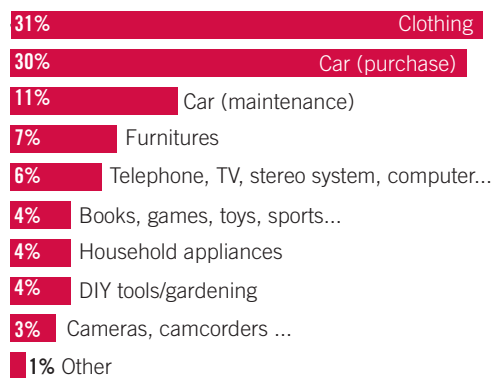
3. ADEME (2012a). *Actualisation du Panorama de la deuxième vie des produits en France*. Ademe (2012b). *Déchets : chiffres clefs*.

Table 1. Impact of shareable goods in average annual household expenditure (per unit of consumption)

Total expenditure (in euros)	27,627
Shareable expenditure	6,271
Economic impact of shareable goods	23%
Clothing	1,938
Car (purchase)	1,855
Car (maintenance)	414
Furniture	700
Telephone, TV, stereo system, computer...	252
Books, games, toys, sports...	250
Household appliances	233
DIY/gardening tools	185
Camera, camcorders...	44

Note: the aggregation of goods into categories in the household survey does not allow a more detailed analysis of goods that are—or are not—shareable.

Figure 1. Shareable goods and their respective economic impact



We note that the environmental impact of shareable goods cannot only be measured in terms of waste generated. We must at least take the energy dimension into account: the industrial production of these goods consumes energy, while their usage may also require energy, especially in terms of transportation. Indeed, the environmental impact of using such goods must be examined in more depth because sharing can lead to a modification in the way these goods are used: the archetype is car sharing, which, as shown later in this article, can lead to a halving of the distances travelled by car, in favour of public transport.

1.3. From impact to economic and environmental potential

What economic and environmental benefits can we expect from an increase in the usage duration of shareable goods? In section 3 we describe how the exploitation of this potential benefit is subject to numerous conditions, particularly regarding

Table 2. The impact of shareable goods in household waste

Household waste* (tons/year)	34,400,000
Waste generated by shareable goods	11,375,000
Environmental impact of shareable goods	33%
Textiles	700,000
Cars	1,500,000**
Furniture and decoration	2,700,000
Recreational facilities (non-EEE ***)	4,800,000
EEE: washing machines, televisions, computers, telephones...	1,600,000
Books, CDs/DVDs	75,000
DIY/gardening tools	-

* We include scrapped private vehicles in the standard definition of household waste

** Figure reconstructed from ADEME data (2012b: p34). 1.5 million passenger cars are disposed of each year, i.e. an average weight of one tonne

***Electrical and Electronic Equipment

the sustainability of shared goods (life cycle, recycling). However, an initial estimate would be useful as a guide to the right order of magnitude and to give an indication of the upper boundary of the environmental benefit of sharing.

Redistribution practices (reselling, giving and swapping) enable us to give a second life to many products that they would otherwise lack, and therefore to extend the usage duration of a good closer to its “technical” lifetime. While the used car market today is such that there is little room for an extension of the redistribution potential of this good (as opposed to the mutualization potential of cars, which remains huge), this is not the case, for example, for electric and electronic equipment: washing machines, televisions, computers, phones... According to the ADEME study on the lifespan of electrical and electronic equipment⁴, 40% of refrigerators and freezers are replaced while they are still in working condition, as are 25% of dishwashers and 14% of washing machines. The technical lifetime of a television can be up to 80,000 hours, while its usage duration does not on average exceed 60,000 hours. The technical lifetime of a mobile phone is estimated to be over 10 years, but in France people change their phones every 2.5 years.

There are many conditions, which are discussed below, that if met could enable a “maximum redistribution” that would result in a one third increase in the usage duration of goods. Clearly, this is only

4. ADEME (2012). *Étude sur la durée de vie des équipements électriques et électroniques.*

a rough order of magnitude estimate that would differ according to the product. From this, it follows that sharing could reduce household waste by 3.2 million tonnes⁵, i.e. by 10%, on top of which is the waste reduction derived from the decrease in the production of shareable goods.

Mutualization practices (lending and short-term renting) involve a limited number of shareable goods. For example, it is currently unheard of to rent a mobile phone for the purposes of making a call, or a TV when you want to watch a film, or an extra sofa when friends are visiting. Although the number of products that can be shared in this way is low, their usage duration can be greatly increased under certain conditions, especially if mutualization goes hand in hand with durable products. For example, a DIY tool can be used by dozens of people instead of just one, recreational equipment such as ski gear can be used by two or three households, and a car in a carsharing scheme can replace more than four privately-owned cars.⁶ Similarly, it is possible to rent or borrow an evening gown or a good quality camera when going on holiday.

Based on the assumption that sharing systems double the usage duration of “mutualized goods”—i.e. those that are lent or rented for a short period—(mainly for recreational equipment or automobiles), about 3.2 million tonnes (or 10%) of household waste can be avoided. It is important to note a key assumption underlying this calculation, a condition that is often not met by existing mutualization systems: shared products require greater durability to compensate for increased usage during their effective lifespan.

This is different for products where the environmental impact occurs mainly during the usage phase: the extension of product lifespan may delay the spread of technological advances that enable lower consumption (this is particularly important for products such as refrigerators and cars, where considerable improvements are possible from one product “generation” to the next).

Regarding estimates of the economic potential of sharing, even the evaluation of a maximum order of magnitude is perilous, however, it is a useful exercise. If we consider, as above, that shareable goods may have a one third increase in usage duration, and that mutualized goods can meet the

needs of twice as many people, it is estimated that the potential gain for each unit of consumption of a household is respectively 830 euros⁷ and 1,100 euros⁸, totalling 7% of their total expenditure. Note that we do not take private vacation rentals into account here.

In addition to the operating conditions of this economic potential, another limitation to this calculation is that it does not take into account the cost of sharing. However, while the costs of peer-to-peer sharing systems are close to zero for households (the investment in time is not negligible, but this is not valued in monetary terms), B2C models incur costs because the sharing service relies on remuneration.

2. DIFFERENT MODELS OF THE SHARING ECONOMY

We now focus on the different models that could help with the realization of the environmental promise of sharing. While the next section considers the environmental impact of these different models—to reveal the conditions under which they can contribute to sustainable development—we aim here to illustrate the diversity of existing models, their diffusion, and their current regeneration especially due to the rise of the digital revolution and peer-to-peer practices.

There are three distinct types of sharing models: redistribution; mutualization and shared mobility.

2.1. Redistribution

2.1.1. A common practice, typically in the form of the giving of goods

In France a CREDOC study⁹, based on the responses of individuals, revealed that most “unwanted” products are not thrown away or stored, but given away, sold or swapped. Table 3 presents the data obtained from this study, which illustrate not only the extent of redistribution practices, but also their characteristics depending on the products in question. One limitation of this study was that the frequencies of these practices were not indicated.

Nearly 70% of “unwanted” motor vehicles are sold second hand—there is an extensive and efficient second-hand car network and it is illegal to abandon a vehicle; 60% of unwanted clothes

5. A 33% rate is applied to non-automotive shareable goods whose potential can be considered as already being exploited. The potential is also being partially exploited for other goods, albeit to a much lesser extent.

6. PAPPD (2014). *L'auto-partage est-il l'avenir de l'automobile?* Report for the Mastère PAPDD/École des Ponts, piloted by the Laboratoire Ville Mobilité Transport.

7. Shareable goods excluding cars = 3,600 euros. It is assumed that a one third increase in usage duration equates to a 23% reduction in the purchase of goods.

8. Mutualized goods = 2,200 euros, mainly in the automobile category.

9. CREDOC (2012). *Les secondes vies des objets*

Table 3. Analysis of redistribution practices in France

Products	Resold (%)	Given away (%)	Swapped (%)	Disposed of (recycled or not) or stored (%)
Automobiles	68	12		20
Telephones	6	22	1	71
Clothing	2	60		38
Bicycles	30	55	3	12
Books	12	75	10	11
DVDs	23	63	9	12
Computers	11	52	3	37
Sports equipment	13	55	5	27
Decorative objects	22	53	6	27
DIY or gardening materials	9	45	6	42
Children's clothing	11	88	3	4

Source: CREDOC (2012). *Les secondes vies des objets*.

Note: Participants responded to the question: if you have dispensed with any of these objects in the past six months, what did you do with them? For each product type, the sum of the rows may be greater than 100% as respondents may have disposed of several products in the past six months.

are given either to specialized organisations or to close friends and family, a figure that rises to more than 90% for children's clothing. However, for other products, the most common option remains disposal—either into the rubbish bin or through specialized collection systems—or storage. For example, in France most unwanted mobile phones are thrown into a drawer and forgotten about, even though many remain in working condition. Unfortunately, the CREDOC study does not examine practices related to home appliances and furniture, which constitute, along with clothing, the bulk of waste in France (excluding construction waste, which is not considered as household waste).

Most individuals state that they are greatly involved in the practice of redistribution, and this is certainly the case for some products, such as cars, but this is nuanced by the ADEME study on the second life of products.¹⁰ For instance, the amount of textiles received by dedicated associations are well below the amount that is put onto the market each year, despite the fact that a large proportion of French people claim to give their used clothes to relevant associations.

Redistribution therefore appears to be a very common practice, which concerns all goods, although with varying intensities, and it often takes the form of giving. Are we currently witnessing an

10. ADEME (2012a). *Actualisation du Panorama de la deuxième vie des produits en France*.

Box 2. Sharing, collaborative, peer-to-peer: a conceptual mess

Sharing economy, collaborative consumption, peer-to-peer economy, collaborative economy, co-revolution are all terms that more or less describe the same trend. However, these concepts are different and overlapping, which results in a vagueness around the concept of sharing. Rachel Botsman considers that the concepts of the sharing economy and collaborative consumption are almost interchangeable.¹ For others, collaborative consumption broadens to include practices that lead individuals to collaborate, to form networks—online or offline—in order to consume differently. Collaborative consumption may then include shared housing and gardens, community-supported agriculture and purchasing groups.²

The concept of collaborative economy has a very broad definition: “An economy built on distributed networks of connected individuals and communities versus centralized institutions, transforming how we can produce, consume, finance, and learn”.³ This economy includes collaborative consumption, collaborative production (e.g. “Fab Labs” or open source), collaborative education (e.g. open education or open knowledge) and collaborative finance (e.g. crowdfunding).

The concept of peer-to-peer economy encompasses the activities of the collaborative economy that occur directly between individuals *via* Internet platforms, thus excluding B2C activities.

Finally, the term “co-revolution” used by Novel and Riot⁴ refers to a collaborative economy that includes all practices affecting the changes in the modes of governance of organisations, and also the ability to open innovation modes towards approaches of “coopetition” and co-creation.

Figure 3. Conceptual differences and overlaps in the collaborative economy



Source: Rachel Botsman, *the sharing economy lacks a shared definition*.

1. The most notable difference between the two concepts is that B2B practices are included in collaborative consumption, and not in the sharing economy.
2. For example ADEME/IPSOS study (2013). *Les Français et les pratiques collaboratives*.
3. Rachel Botsman (2012). *The sharing economy lacks a shared definition*.
4. Anne-Sophie Novel and Stéphane Riot (2012). *Vive la co-révolution*, Éditions Alternatives.

increase in these redistribution practices? There is limited data available to compare the development of these practices over time.

2.1.2. The regeneration of redistribution

Within the field of redistribution practices, what is the role of Internet platforms such as donnons.org, freecycle.org, eBay and leboncoin? Although there is little data on the practices of gift giving through the Internet, 33% of consumers say they purchased a used product on the Internet in 2011, compared to only 27% in 2007; while 34% report selling a product in 2011, compared to only 16% in 2007.¹¹ Such practices are on the rise and already commonplace, a fact confirmed by the ADEME-IPSOS “collaborative practices” survey involving 4,500 French people, which showed that more than half of respondents “have already practiced” selling goods to other individuals *via* classified advert posting websites.

The exchange of second-hand goods—and even gift giving—is commonplace on the Internet and is a major part of redistribution practices, a fact confirmed by the ADEME study¹² which evaluated that nearly half the volume of products that are redistributed today are exchange *via* Internet platforms.

While it may be easy to reach the conclusion that peer-to-peer practices are currently regenerating redistribution, it is more difficult to define this renewal. Do Internet practices complement more “traditional” practices, enabling a drastic reduction of transaction costs and thus facilitating the giving of goods, or their resale at a low cost? Do such practices replace the more traditional ones, as may be suggested by the fact that the quality of goods donated to a charity such as Emmaus has declined?¹³ Internet practices have certainly largely replaced classified ads in newspapers. Do they hybridize with traditional actors or push these actors to reinvent themselves? Does the Internet facilitate access to giving and reselling practices for people outside of the immediate sharing circle: the family? Studies to address these questions have yet to be instigated, and they therefore remain unanswered.

Finally, it should be noted that redistribution is not only revitalized through the Internet. There is an increasing number of business models that give a second, or even a third life to goods used by households. By offering long-term rentals of home appliances and multimedia equipment, Lokéo retrieves such products when customers no longer

11. CREDOC (2012). Les secondes vies des objets.

12. ADEME (2012a). Actualisation du Panorama de la deuxième vie des produits en France.

13. Personal communication.

Table 4. Development of mutualization practices in France

Products	Purchased as new	Gift	Second-hand purchase	Renting or lending (short or long-term) (including free)
Automobiles	38	3	49	10 (9)
Telephones	78	12	4	5 (5)
Clothing	91	6	2	1 (1)
Bicycles	53	n.d.	23	28 (22)
Books	81	n.d.	16	27 (25)
DVDs	76	n.d.	9	28 (19)
Computers	87	n.d.	10	6 (6)
Sports equipment	92	n.d.	6	5 (3)
Decorative objects	92	n.d.	14	0
DIY or gardening materials	85	n.d.	6	18 (14)
Children's clothing	96	n.d.	14	2 (2)

Source: CREDOC, 2012. *Les pratiques d'acquisition des objets*. n.d.= non documented.

Note: Respondents have answered the question: If you have accessed one of these objects in the past six months, how did you do it? For each product type, the sum of the rows may be greater than 100% as respondents may have accessed several products in the past six months.

need them and can re-use them for other clients (although does this actually happen?). Similarly Vodafone offers the choice to rent a mobile phone rather than buying one.

2.2. Mutualization

2.2.1. An underdeveloped practice

Generally, short-term renting or lending appear to be underdeveloped practices, at least in comparison to redistribution. This can be concluded from the data of the CREDOC study (which does not distinguish between short or long-term renting/lending). The study also shows that renting (involving payment) is much less developed than lending (free).

Limited dissemination of mutualization practices can be explained by the fact that all types of goods cannot be easily mutualized. Of course, even a washing machine can be pooled as shown by the (relative) development of the lamachineduvoisin.fr website, or the shared laundries of certain buildings. In reality, some goods are currently very rarely rented or borrowed, such as clothes, phones, computers or decorative objects. The more an object is used on a regular and daily basis, the less relevant the options become for short-term rental or lending. Carsharing is an exception, which is discussed below. DIY equipment, books and DVDs are well suited to these practices because they are used on an occasional and infrequent basis.

2.2.2. The regeneration of mutualization

While tool and equipment rental companies and multimedia libraries are well known mutualization models, a number of new practices are emerging on the Internet, such as the rental of student books (Chegg) or evening dresses (rent the runway). In addition to these B2C rental examples, there are numerous peer-to-peer initiatives such as Zilok for the rental of all types of objects. This category of practices also encompasses non-monetized peer-to-peer forms such as Peerby and Sharewizz. However, while second-hand platforms involving exchanges between individuals are very popular in France, the French rarely rent goods *via* the Internet: only 6% of the population have done so, according to the ADEME-IPSOS study.

Here again it is unclear whether this emerging market of peer-to-peer rental is complementing or substituting the traditional rental market and the practices of free lending. We are already seeing a hybridization between traditional and peer-to-peer models. For example, the Zilok website now allows both individuals and professionals to rent out their goods. In future, the current main retailers may organize the peer-to-peer rental of goods to individuals.

It should be noted that peer-to-peer models have a significant advantage over more traditional models: proximity. We are more likely to choose to rent a product instead of buying it if that product can be easily obtained through renting. While it is difficult and expensive to install a rental shop for multiple types of goods on every street corner, Internet platforms are able to mobilize all of the goods that our neighbours are willing to rent out. This model has a particularly high relevance in cities. Urban areas, because of their density, appear more appropriate for mutualization compared to rural or peri-urban areas.

2.3. Shared mobility

The sharing of transport is clearly nothing new. A taxi, bus or even an airliner can indeed be regarded as sharing, which highlights the difficulty in precisely defining this notion. In this paper we use the term shared mobility to mean the sharing of individual cars through carsharing or carpooling systems. The latter type of system differs from the former, and from the models studied so far, in that it does not involve the mutualization of a good (a vehicle), but rather a service (a journey). The purpose is not to make better use of a vehicle that spends too much time being parked, but rather to increase the seat occupancy rate of a vehicle. Nevertheless, it is one of the flagship activities of the sharing economy and is often cited as a prime example by proponents.

It should be noted that this report does not concern itself with bicycle sharing, a practice that is developing and becoming more widespread and that could—like carsharing—have the capacity to radically transform individual mobility in favour of low impact transport.

2.3.1. Car rental: a narrow market in transformation

The short-term rental of a vehicle is a well-established and highly structured practice that is carried out by major corporations such as Avis, Hertz and Europcar. According to a survey in France carried out by Obsoco, 17% of respondents had rented a car in the previous year.¹⁴ The same study revealed the already high significance, and the future potential, of “new” rental systems that often rely heavily on the use of digital tools: out of those French people who rented a car in 2013, 22% of them used a carsharing platform (such as Mobizen or Autolib) and 21% rented a car from an individual (Buzzcar, Drivy, etc.).

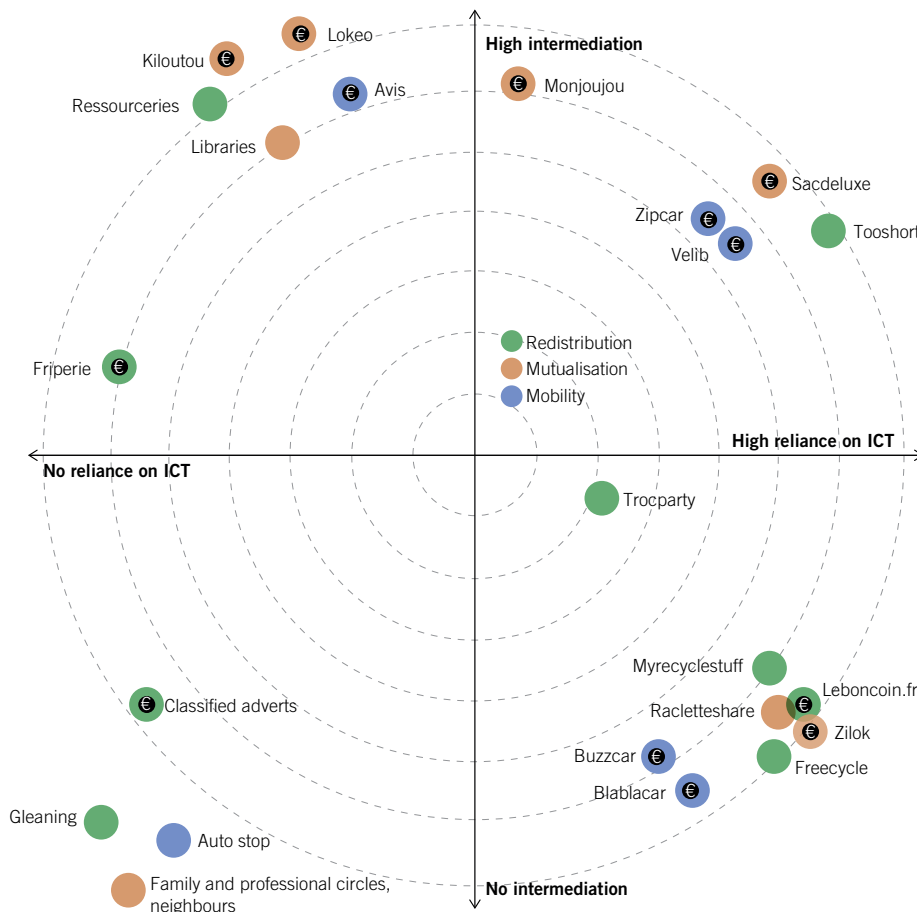
Short-term car rental systems are therefore undergoing major regeneration, with alternative models offering numerous advantages, such as enabling easy access and return of the vehicle, which may be done rapidly and at any time. Although these systems currently attract relatively low user numbers (only 3.7% of French people use carsharing systems such as Autolib), their potential for development appears high, as is also true for the rental market in general.

Are these new practices of short-term vehicle rental supplementary to well-established systems, or do they replace them? Intuitively, we may expect a replacement of the traditional systems. However, this intuitive idea should be analysed in more detail. Will alternative systems be able to meet the very short-term demand for mobility, in a way that traditional actors have been unable to achieve? Will they be able to meet “peak time” demand (weekends and holidays)? What if the future will see a hybridization of these models? Such an outcome seems possible in the light of the purchase of Zipcar in 2013 by... Avis?

It should be noted that car manufacturers are also developing sharing deals: Peugeot has launched its Mu mobility service that provides access to the most appropriate vehicles to suit user needs (a small or large car, a scooter, etc.), and Renault has an electric car sharing scheme known as Tweezy Way. These developments take place in the context of a potentially major reconfiguration of the mobility value chain, with car manufacturers

14. Obsoco (2013). Observatoire des consommations émergentes.

Figure 2. The diversity of the sharing economy



running the risk of losing the direct contact with the end client and leaving space for companies that provide mobility services.

2.3.2. Carpooling

Carpooling remains an underdeveloped practice in France. The ADEME-IPSOS study on “collaborative practices” found that 8% of the French population practice carpooling on a monthly or weekly basis.

While carpooling can be regarded as a well-established practice, in the form of hitchhiking for example, it is today taking on new more organized forms, run by companies, communities and associations. Most of these systems use Internet platforms for interconnecting their users, blurring the line between the “old” sharing economy and the “new” one. We note here the growing success of Blablacar, a carpooling platform that operates between individuals, which now boasts one million carpoled trips per month and has seen a doubling of its “community” in less than a year. Unlike other systems, Blablacar and its equivalents have

developed most strongly on occasional and long distance trips, rather than on regular commuting: indeed the latter type of usage can disappear from the “radar” of these platforms once people know each other and can organize themselves directly or *via* social networks, allowing them to avoid the transaction fees charged by the platform.

Another innovation in the area of carpooling, one that constitutes a flagship practice for the proponents of the “new sharing economy” is dynamic carpooling. People who wish to make a journey—typically a short trip—contact the service a few minutes before their departure, and the service finds them a driver who can carpool with them on the requested route. These services are often Internet or smartphone-based and are now being confronted with the fact that they must first attract many users before they can function properly. Moreover, there is a thin line between a driver who carpoles for a journey that would anyway be made, and a driver who acts as an illegal or unregulated taxi (see Annex).

2.4. Diversity of sharing models

Before discussing their environmental impact, we should note that sharing economy models are highly diverse and ingrained in our society to varying extents, and above all it should be underlined that they are undergoing regeneration particularly through the development of digital technologies in peer-to-peer systems. These new models are developing due to a drastic decline in transaction costs that has been enabled by the Internet, but they face different challenges: Can I trust a particular individual that I don't know? Can I have access to a good when I need it?, etc.

This revitalization should challenge researchers to better understand the impact, opportunities or conditions for the diffusion of these renewed practices; it should challenge the traditional actors of the economy who are, or will be, affected; and finally, it should challenge the policymakers who will need to regulate—or not—these new practices.

Figure 2 illustrates the diversity of sharing models. In this illustration, models are categorized according to whether they involve redistribution, mutualization or shared mobility, but also according to three dimensions that are at the heart of the controversy over the sharing economy and its scope (see Box 1): does it involve the exchange of money? Is the sharing conducted between individuals or is it organized by “cumbersome” public or private intermediaries? Does it require the intensive use of digital technologies? It must be kept in mind that an intensive use of new technologies is not automatically synonymous with disintermediation and peer-to-peer models (such as Autolib), or a prerequisite for modernity and the renewal of business models (like Lokéo).

Does the sharing economy have a bright future? This is a difficult question to answer without taking a leap of faith. However, it should be noted that the drivers of its dissemination, which are the preservation—or even the improvement—of purchasing power, the diffusion of digital technologies and the pressures on resources, seem unlikely to dissipate soon.

It is also difficult to predict the form that the sharing economy could take in order to proliferate. Will it be in its high-tech or “traditional” version? Monetized or not? Peer-to-peer or B2C? The major traditional companies are currently taking hold of these practices, although it is too early to know whether or not this is superficial. Will they overshadow alternative practices? Will they be forced to transform themselves so that they do not become obsolete? Will they become drivers of diffusion for sharing due to their power (an existing

network, consumer confidence...)? Will there be a few sharing platforms (oligopolistic model) or a multitude of local sharing sites (decentralized model)? Obviously, it is impossible to answer these questions at present, because the scenarios that will unfold will depend on individual and collective choices.

3. FROM AN ENVIRONMENTAL PROMISE TO THE CONDITIONS OF ITS ACHIEVEMENT

The reduction of the ecological footprint, which is sometimes raised by the “entrepreneurs” of the sharing economy and more often by the proponents of the concept¹⁵, is an intuitive benefit of these emerging modes of consumption: the practices considered enable a better use of underutilized capital, an increase in the usage rate of material goods, and thus help to reduce the amount of material goods that need to be produced to ensure the same level of service. We should note that the “materials” in question are diverse and often poorly identified.

Can the sharing economy be a lever for ecological transition? We discuss here the environmental impact of sharing practices, in their diversity, with a focus on practices that have been regenerated by digital technologies and the Internet—peer-to-peer practices. As discussed below, the environmental impact of these practices, in the way that they have developed today, is rarely obvious and there are many reasons to raise doubts: a degree of pragmatism is required. Above all, these practices are changing along with their balance of impacts: our objective is not to give a definitive review of the good and bad points of these sharing practices, but to highlight the necessary conditions for these practices to contribute to the ecological transition.

To move beyond intuition, it is essential to differentiate between practices: redistribution, mutualization and shared mobility. For each type of practice, we describe a few elements for consideration, with a focus on new peer-to-peer practices. We then conclude with a discussion on the issues that are common to all sharing models.

15. See for example Rachel Botsman (2012), *The sharing economy lacks a shared definition*; the opinion of the European Economic and Social Committee on the theme “Collaborative or participatory consumption: a sustainable model for the twenty-first century”; the presentation of the new Sharing Economy Coalition of the EESC; and the minutes of the Bercy Jam organized by the Ouishare movement on 25 June 2013.

3.1. Redistribution

The intuition that redistribution is positive from an environmental point of view can be illustrated by the classic example of the pushchair that has been abandoned in the cellar. Mr. X could sell his pushchair to Mrs. Y on the Internet or at a car boot sale, or he could even give it to her. In which case, Mrs. Y would not have to buy a new pushchair, lowering the number of goods that would need to be produced and distributed. One might even expect that Mr. X had planned to resell the pushchair at some point, and consequently bought a more solid and durable one: a positive environmental effect emerges—the increase of product lifespan, which also contributes to lower production.

The environmental balance of this example is positive because:

1. the “provider” no longer needs the product and will not therefore replace it with another purchase.
2. the “recipient” does not need to buy a new product, i.e. his or her acquisition replaces a purchase.
3. the environmental impact of the redistributed product is mainly linked to its production, and not to its usage: the extension of its usage duration—and therefore the slowing down of the diffusion of new products—is therefore positive from an environmental perspective.
4. redistribution, having been anticipated at the moment of purchase, leads to the purchase and thus the production of a durable good (in the sense of a long lifespan).

In reality, the practice of redistribution rarely meets all of these conditions. Thus, people who benefit from a gift of clothing from relatives do not necessarily consider these goods as replacements for new purchases, but will use them as additional items.¹⁶ Furthermore, people that get rid of certain products often still need to use these items, but simply want to replace them with newer versions (this is often the case for cars, sofas and mobile phones). However, this does not imply that the environmental balance of the operation is negative: the ability to give or sell used products has not necessarily played an instrumental role in the decision to replace it. Also, replacement allows more recent and therefore potentially more resource-efficient products to be brought to market.

As we can see, the environmental analysis of these practices is complex and it is difficult or impossible to determine *ex ante* under what criteria

¹⁶ Individuals often claim to give a lot of clothes to relatives, however, the overwhelming majority of clothes that they acquire are new purchases.

FOCUS 1. Peer-to-peer redistribution

The volume of goods exchanged through websites already far exceeds that managed by the traditional actors of redistribution,¹ but do we know whether their development is beneficial from an environmental perspective? In particular, do users utilize these platforms to sell unused products (Condition 1) and buy second-hand products in lieu of buying new ones (Condition 2)? Some answers are provided by the analysis of goods that are currently traded on eBay and their associated consumption patterns.²

The best selling goods are clothes and fashion accessories, a goods category that is already commonly passed on to relatives or associations. However, it appears that the type of exchanges on eBay involve different types of products that are relatively luxurious: traded by people that eBay defines as “fashionistas”. Therefore, it would seem that there is no competition with traditional practices, however, the environmental impact remains very uncertain: these “fashionistas” may sell their clothes to buy more new or used ones, in a strategy of accelerated renewal if not resulting in an increase in their wardrobe size. Does second-hand purchase replace the buying of new products or does it democratize luxury items by lowering their price?

The second best seller on eBay is rising steadily: the smartphone, a product that in France sometimes ends up hidden in the back of a drawer, even though it may remain in working order. Do peer-to-peer platforms enable the mobilization of this untapped potential? Possibly yes, but not only: the resale of phones or tablets increases when the producers release new products onto the market. This may be an indication of people reselling fully functional devices in order to purchase the latest models.

Finally, the third best selling goods category on eBay includes DIY and gardening equipment, as well as furniture; at present, some of these products are otherwise not highly redistributed. Is this a substitution of traditional sharing practices or is it a new market? Is it a way to accelerate access to quality products or a gold mine of unused products? These questions remain unanswered. To conclude, let us remember that Internet reselling platforms for second-hand goods can be used in ways that are beneficial to the environment if the users meet the requirements discussed above (Conditions 1-4). There is no doubt that some users do behave in this way, and we all do sometimes. But is this primarily the main motivation of users? Do their behaviours result from an objective of sustainable or “hyper” consumption? Today, the balance seems to be in favour of the latter, or at least for the maintenance of a high level of consumption.

1. ADEME (2012a). Actualisation du Panorama de la deuxième vie des produits en France.

2. See eBay’s annual documents on the purchasing trends of French consumers.

(type of good, type of practice, etc.) redistribution—like other sharing models—can be positive for the environment: individual cases are numerous. Our goal here is simply to highlight the major issues that arise and that require further study—from the perspective of in depth studies on certain types of practices and goods.

More generally, we can however suggest the following conclusions. While the environmental balance of redistribution depends on many conditions, we can say that if a household gives away a good, it means that the good was not currently

being used by that household (Condition 1). As for B2C business models, such as Lokéo or the new offer from Vodafone, they offer an advantage—and therefore an increased responsibility—from an environmental point of view: they have more leeway for a positive effect on the sustainability of the redistributed products (Condition 4). Indeed, they can better anticipate the redistribution at the time of purchase, and can have in depth discussions with the producers of goods to transform, repair or “upgrade” the goods before being passed from one user to the next, etc.

The “problem” with these business models is that their goals, still from an environmental point of view, are not necessarily to achieve a reduction in the number of goods that need to be produced, the improvement of their quality, durability, and more generally the ecological transition. They may have an adverse environmental impact if economic profitability or the company strategy makes it necessary. In this regard, the example of Vodafone is troubling: its long-term phone renting scheme is coupled with an offer to change phone every year, i.e. twice as fast than the current average rate.

3.2. Mutualisation

The intuition that short-term renting and lending is positive from an environmental perspective can be illustrated by the classic example of the drill. Rather than buying a poor quality drill, one may rent a good one from a local professional, or borrow it from a handyman neighbour.

The environmental balance of this example is positive if:

1. The borrower does not buy a product, i.e. the rental replaces a purchase.
2. The lender provides a higher quality good that is more resistant to intensive usage.
3. The (repeated) rental occurs at a local scale, minimizing transport, which is often non-motorized.

Condition 3 raises the issue of transport associated with mutualization, a question that has already arisen for redistribution but to a lesser extent (a product is not redistributed ten times, but it can be rented dozens of times). Condition 2 is particularly important: for many products, intensive usage reduces the number of operational years. If a good that is used twice as much lasts half as long, then the expected environmental benefit disappears: this does not lead to the production of fewer goods over a long period. It is therefore crucial that shared goods are the most durable on the market or are designed specifically for sharing.

In the environmental analysis of mutualization it is necessary to distinguish between the issue of

FOCUS 2. Online rental

What can be said about mutualization practices on the Internet? Let us take the example of Zilok. The goods that are rented through this online platform do not differ significantly from goods that are rented by other means. Equipment for gardening, catering and events, cleaning and maintenance are the typical types of rented goods. The issue raised by these peer-to-peer rentals is to know whether the rental is anticipated at the time of purchase, so that a better quality and more durable product is acquired.

Top seven categories of the most rented items through Zilok in 2013 (in France)¹

- 1 Gardening: hedge trimmers, rototillers, lawnmowers, chainsaws...
- 2 Catering and events: marquees, tables, chairs...
- 3 Video equipment: video cameras, DVD players, projectors...
- 4 Cleaning/maintenance equipment: high-pressure washers, carpet cleaners...
- 5 Lifting and handling: sack trolleys, material lifts, pallet trolleys...
- 6 Photo: Lenses, DSLR cameras...
- 7 Trailer: motorcycle, car carrier...

The rental of cameras and video cameras is also common on Zilok. This online platform may enable the growth of this new currently underdeveloped “repository of products”. It should also be noted that the abovementioned practices of “fashionistas” in terms of second-hand platforms can also be found on rental platforms: luxury accessories are also a very popular category of goods.

1. Source: Zilok.fr

the number of goods that need to be produced, and the issue of the amount of resources that require mobilization. If a mutualization system halves the lifespan of a good, because of a doubling of usage intensity, there is no reduction in goods production. At a given moment in time, however, there are half as many goods in circulation. In an economy that recycles 100% of its goods, there would be a halving of the amount of natural resources that must be mobilized. The environmental impact of mutualization therefore depends not only on the durability of goods in the sense of their lifespan, but also of their durability in the sense of “recyclability” and the actual recycling carried out. Do the current mutualization models, that have been developed in particular for books, DVDs and tools, fulfil all of these conditions? While it is difficult to answer these questions regarding the first condition, the second is certainly—or at least more easily—met by the professional lenders. As for the third condition of proximity, this one often seems to be met. While caution is de rigueur when discussing the environmental impact of mutualization, the current practices seem to be more clearly positive than redistribution ones.

3.3. Shared mobility

3.3.1. Carsharing

Returning to the initial intuition and beyond: a typical car spends 92% of its time not in use and could therefore be shared, saving financial and material resources. Indeed, the literature is full of data showing that a car that is shared through a carsharing scheme such as Mobizen replaces 4 to 8 private cars.¹⁷ Does this mean that we can produce a quarter of the number of cars that are currently being produced?

The environmental impact is positive if:

1. The shared car is more durable, i.e. when it is used four times as much, it will not have a lifespan that is four times less (which is far from obvious if the mileage is the factor that “wears” the vehicle.)
2. Users do not use a shared car to “consume more”, i.e. travel further by car.

Once more, the emerging issue is the durability of the shared products: they have to be radically different, and they are in the case of Autolib. Moreover, Condition 2 provides the richest area of study. Indeed a shared car is not used in the same way as a private car.

The typical profile of the user is an urban dweller who, due to a carsharing service, is able to dispense with his or her car as a preferred mode of transport, they are able to go to work by public transport and use a shared car to go to Ikea, to visit far away friends in the evening and family on weekends. Carsharing seems to be a key element of a more sustainable mobility package, which gives pride of place to public transport. According to the 6T¹⁸ study, the decrease in the number of kilometres travelled by car is nearly 50%. This statement must be qualified, however: all carsharing models are not the same and are not used in the same way.¹⁹ However, while they can sometimes enter into competition with public transport, carsharing systems more generally transform our mobility in a way that complements public transport.

Halving the number of kilometres travelled by car should obviously not only be interpreted in relation to the reduced production of cars and

therefore consumption of material resources and waste, because the car is a special type of product from an environmental perspective: it is not only the production and end of life of a car that presents us with challenges, in this case the usage of the product is even more significant in terms of energy consumption and the emission of pollutants.

We should note that peer-to-peer exchange models are not at present as well studied as the carsharing models that have just been discussed. Apart from the sustainability of products, we can expect similar positive conclusions from an environmental point of view due to the transformation of the “mobility package”.

3.3.2. Carpooling

Does carpooling allow us to reduce the number of cars on the roads? This is the question raised by this practice which consists in sharing a service (to be driven from A to B) rather than a good (car).

To answer this question we must understand the modal shift that is underway as a result of carpooling. Would the driver and passengers have used a car or public transport if there had been no carpooling? The 2010 Atema Council study for ADEME²⁰ shows that users carpool twice a week on average, mainly commuting, and that three-quarters of usages correspond to a modal shift of the private car, and the other quarter corresponds to a shift from public transport. Each carpooler would save an average of one tonne of CO₂ per year.

It is, however, important to distinguish between commuter carpooling, which is regular and short distance (which corresponds to the average carpool trip) and long distance carpooling which is the main activity of platforms such as Blablacar. In the latter case, competition with trains seems high: SNCF would be forced to lower its prices on certain routes to stay competitive.²¹ And while Blablacar on its website estimates that it has saved 500,000 tonnes of CO₂ due to the 10 million carpooling trips that have been made through its platform, any assumptions about a modal shift deserve further consideration.

We note that short-term and long-term should be differentiated in the study on the competition between car sharing, carpooling and public transport. Thus, in the long term, the solution offered by carpooling can be so effective that it becomes less relevant to maintain or build new public transport

17. Momo (2010). The state of European car sharing. FP7 project. Final report.

18. 6T (2013). Enquête nationale sur l'auto-partage. Rapport final de recherche pour l'Ademe. 2013.

19. 6T (2014). Auto-partage en trace directe: Quelle alternative à la voiture particulière? Report for ADEME, 2014. While some models are used primarily by the typical profile described below, with the beneficial effect in environmental matters that we have described, others might well lead to an increased use of private cars over public transport.

20. Atema (2010). *Caractérisation de services et usages de covoiturage en France : quels impacts sur l'environnement, quelles perspectives d'amélioration ?* Report for ADEME.

21. Personal communication.

routes. From an energy-climate perspective, this is perhaps not a disaster: people can share electric or plug-in hybrid cars, and already today a shared thermic vehicle (with 3 to 4 seats) offers a climate and energy balance sheet that is as good as a regional express train.²² From the perspective of the role of the car in our cities (congestion, footprint, etc.), this is obviously not an improvement.

3.4. Cross-cutting conditions

The sharing of goods that we produce—and often import—has significant environmental and economic potential. Many models, traditional or new, have the potential to realize these hopes... but are they doing so? As we have seen, the impacts are not clear: it is difficult to make an overall judgment on these highly diverse practices that involve a wide range of goods. The available studies are few, and the research gap is wide. Especially since the current environmental performance of these practices (that a priori are bound to develop) is less important than the conditions for improving their sustainability.

If sharing primarily seems to be an issue of the *quantity* of goods, the *quality* of shared goods appears to be a key requirement for the environmental sustainability of sharing models, whether for redistribution, mutualization or even shared mobility. Sharing models must prioritize the most durable goods on the market, with durability understood here in the sense of an increase in lifespan but also of their recyclability and the actual recycling carried out. B2C models where companies can influence or control production at a very upstream stage—by bringing new goods to market that are eco-designed to be shared—or recycling at a downstream point, have a strong advantage from an environmental perspective.

The impact of sharing on the transportation of goods (with all the negative environmental impacts associated with transportation) should also be considered. If it enables a reduction in the number of goods produced, then sharing can contribute to a reduction in the transport of goods, including imported products. However, sharing also leads to an increased transport of goods to make them available, whether rented or resold. A thorough assessment is required, but we can already say that some models, especially peer-to-peer ones, are based on the geographic proximity of users, especially rentals between individuals. Another key condition for the sustainability of

sharing models relates to consumption patterns. Indeed, as shown by the eBay “fashionistas” or the Vodafone programme that enables the annual replacement of phones, sharing models can be the vector of a sustainable consumption, but also of a material hyperconsumption.

Once again, in terms of consumption patterns, some experts emphasize that sharing by distancing users from the a good through changes in the way we consider property, would open new areas for innovation that could encourage ecological transition. Carsharing is the archetype, transforming the role of the car in our mobility. How can this be replicated for goods such as washing machines or drills? The question remains open, especially in a context of economic crisis where property can appear as the ultimate security.

Finally, one cannot address the environmental impact of sharing models without mentioning the rebound effect. So far in this paper we have described specific mechanisms that can counteract the expected decrease in the production of goods. They are a part of a local or sectoral rebound effect: or, in more economic terms, the assumed gain of purchasing power that results from sharing is used to consume additional units of the shared good or—to be more precise—of the service provided by this good. We have not addressed here the global or macroeconomic rebound effect, i.e. the gain in purchasing power does not contribute to the increase in consumption of the shared good, but in other types of goods and services with environmental impacts of varying degrees. To caricature, the money saved through carpooling can be spent on organic products or a trip to the Seychelles. Finally, we can note that the global rebound effect—and to some extent the local one—can be seen from two perspectives: the environmental perspective, for which the rebound effect is not positive; and the economic and social perspective, which is much more positive. Indeed, sharing results in gains (or the preservation) of purchasing power, or even a better access to shared goods for people in vulnerable situations.

To conclude this section, what can be said in general about the environmental impact of sharing models? We can say that it is a matter of conditions and therefore largely of choices: consumer choice, as we have discussed at length; the choices of public authorities to support the dissemination of virtuous models; and finally the choices of entrepreneurs to analyse their environmental impact and to structure a “durable” supply. The sharing of goods that we produce could mobilize substantial economic and environmental potential; the sharing economy can contribute to sustainability if this is the stated objective.

22. ADEME (2008). *Étude efficacités énergétique et environnementale des modes de transports*. Study carried out by Deloitte.

4. MAKING THE SHARING ECONOMY A SUSTAINABLE ECONOMY: THE ACTORS THAT MAKE THE CHOICES

The various models that make up the sharing economy are not “intrinsically” sustainable: harnessing the environmental potential of the sharing of goods involves appropriate choices by public authorities, entrepreneurs and consumers. In this section we review these three “actors” to try to better understand the role they can play in making the sharing economy sustainable. Once more, we focus on new models and especially peer-to-peer ones because they are currently the least analysed and because—let it be acknowledged—they have the attraction of novelty.

4.1. The role of public authorities

How can public authorities contribute towards making the sharing economy sustainable? We suggest here that public authorities should identify the most virtuous models (to determine who should be supported) and should implement the support measures that are the most appropriate and aimed at the right geographical scale (what form should the support take?).

The role of public authorities is also:

1. to conduct in depth analyses of sharing models, which should go beyond research and can be achieved practically by listing all practices and models that enable the sharing of material goods, whether locally, nationally or otherwise. Practices that are often ignored would gain political weight if they were gathered under the *label* of sharing.

2. to build an economic and regulatory framework that is conducive to the most sustainable models, without having to identify and support them one by one. Specifically, taxation should take environmental externalities into account in the best way possible. In parallel, public policies that promote the eco-design of products and the extension of serviceable lifespan reinforce the environmental value of sharing; the development of an efficient public transport offer to reinforce complementarity with shared mobility systems rather than substitution. To put it simply: if we want the different models of the sharing economy to be sustainable, the economy must be sustainable.

In short, sharing is the organisation of a system; the infrastructures chosen for these systems must be sustainable.

4.1.1. Who should be supported for the sake of environmental protection?

The first difficulty for a decision maker who wants to support the dissemination of sharing models

that are virtuous from an environmental perspective is to identify them. Who should be supported when, as we have seen, the environmental performance of sharing models depends on the modalities of the model in question and on the goods involved? Several options are on the table:

- To only consider initiatives that are proven to be green, those which have passed a complete Life Cycle Assessment (LCA).
- To only support practices with a proactive environmental approach (eco-design, maintenance, recycling, sustainable consumption awareness raising, etc.) and that can be subject to certification.
- To support all sharing initiatives by trusting the initial intuition regarding the usage rate and by engaging them in the logic of a better knowledge of their environmental impact.

Our analysis leads us to believe that as long as they are emerging and small scale, sharing economy practices should be supported by the public authorities because they allow us to explore new avenues for ecological transition, and they can open up new opportunities. Once above a certain scale, they should make efforts to analyse their environmental performance and improve it—transparently—or otherwise demonstrate their environmental benefit through LCA. Public support is legitimate only if this condition is met.

4.1.2. How should they be supported?

The demands of the sharing movement

How should the dissemination of sharing models be supported? We conducted a review of the requests to policymakers from the sharing movement in its broadest sense²³, and of the actions taken by two pioneering cities in this field, which are Seoul and San Francisco. We identified four recurrent areas for action (see Box 3), which can be summarized as:

- Enhanced visibility through communication campaigns and even labelling;
- Funding and incubators for innovative projects;
- Adaptation of regulation to suit new models;
- Encouragement of public authorities to implement best practices.

23. Minutes of the Bercy Jam organized by Ouishare on the 25th June 2013; SPUR (2012). A Policy agenda for the sharing economy; Shareable & Sustainable Economies Law Center (2013). Policies for shareable cities; position paper of the Young Global Leaders Sharing Economy Dialogue, 2013; Collaborativeconsumption.com (2014). 10 things a city can do to become a shareable city; US conference of mayors (2013). Resolution in support of policies for shareable cities; Information on Seoul and San Francisco strategies towards building a sharing economy.

Coordinating the levels of intervention

Cities, regions, countries... what is the most appropriate political level to support the models of the sharing economy? Obviously, the answer depends on the practice considered, on its implementation area and, in general, it is more important to operate a good coordination between the scales rather than make an exclusive choice. In the example of carsharing, a definition of this term at the national level has been necessary to avoid legal uncertainty and to enable the intervention of public authorities in the creation of carsharing services²⁴, particularly local intervention on parking spaces. Note that discussions on sharing and territories are being conducted within the framework of action research projects.

Highly specific public policies

The policy recommendations above are supposed to be relevant for the development of all models of the sharing economy, or at least most of them. Clearly, there is also—mainly—a high number of sectoral recommendations that are specific to each practice. In the case of carsharing, for example, key issues relate to the awareness of this new practice, access to parking spaces and the interoperability between sharing systems and between these systems and public transport. Also, we should note that, without doubt, it is more efficient to carry out communication campaigns that do not focus on sharing in general, but rather concentrate on carsharing or the renting of goods between individuals. Public policies are therefore very specific and sectoral. The concept of sharing can primarily enable the coordination of these political efforts.

Create a space for dialogue and action

In France, “semi-public” institutions such as the *Institut de l'économie circulaire* or the Economic, Social and Environmental Council (ESEC) could create a working group on the sharing economy, and make a place for dialogue between all actors, for the study of environmental opportunities and for the proposal of regulatory changes and incentives for private actors in this diverse and lively economy to integrate environmental considerations.

24. PAPPD (2014). *L'auto-partage est-il l'avenir de l'automobile?* Report for the Advanced Master in public policies and actions for sustainable development/ Ecole des Ponts, led by the Laboratoire Ville Mobilité Transport.

Box 3. Political demands of the sharing movement¹

We conducted a review of the requests to policymakers from the sharing movement in its broadest sense, and of the actions taken by two pioneering cities in this field, which are Seoul and San Francisco. We identified four recurrent areas for action:

From communication to labelling

Dissemination of the sharing economy faces the ignorance of citizen-consumers or their lack of confidence in new systems that are often backed by small organisations. Public institutions therefore need to communicate about these practices to make them visible² or even to create a label for them. The Seoul sharing strategy focuses particularly on these dimensions.

Financing and incubation

The strategy of Seoul to promote sharing includes a budget dedicated to sharing companies, and the objective of start-up incubators. We find here elements that have been proposed by many sharing proponents, particularly in France where there have been demands to the public investment bank³. It should be underlined that the initiatives from associations are much less considered than private initiatives, particularly with regard to their financing needs.

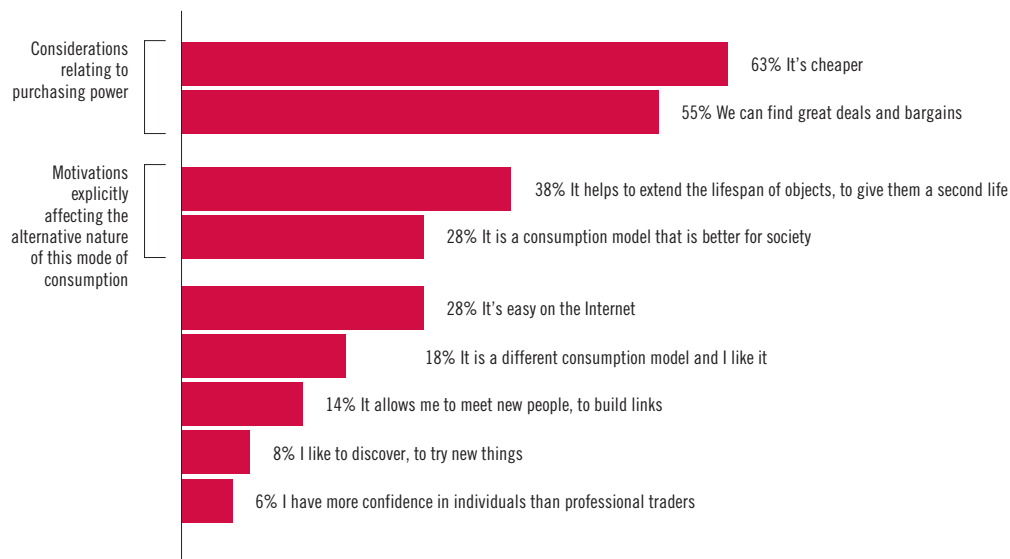
A working group on regulation

The regulatory framework is often put forward as being unsuitable for many sharing practices, particularly peer-to-peer ones. Fiscal systems, the insurance code, consumer protection, professional licenses... are all regulations that must be adapted so as not to block the spread of the sharing economy, with a particular focus on taxation and the possible exemption of income under a certain threshold. These regulations can also be used by policy makers to protect existing companies which are affected by the development of sharing. The San Francisco Sharing Economy Working Group—comprising public authorities, entrepreneurs and citizens—is often cited as an example to identify regulatory issues and propose solutions.

Exemplarity

Cities and public authorities are being called upon to engage in the sharing economy and to act in an exemplary way; and pioneer cities are trying to respond to this appeal. The response can take the form for example of a mapping of public resources that are little used or misused, with the classic example of public buildings that are empty outside of office hours.

1. Minutes of Bercy Jam, which was organized by Ouishare on the 25th June 2013; SPUR, A Policy agenda for the sharing economy 2012; Policies for shareable cities, Shareable & Sustainable Economies Law Center 2013; position paper of the Young global leaders Sharing economy dialogue, 2013; collaborative consumption, 10 things a city can do to become a shareable city; the US conference of mayors, Resolution in support of policies for shareable cities, 2013.
2. In the case of carsharing, the value of reserved spaces is often put forward as a way of making this practice visible to all. This is why it is important that parking should be situated on the street level as much as possible, rather than in underground car parks.
3. Ouishare Bercy Jam, op. cited

Figure 3. The motivations of sharing users

Source: Observatoire de la confiance de la Poste (2013). *Les français et la consommation collaborative*.

4.2. The role of entrepreneurs in the sharing economy

Entrepreneurs (associations or companies) and particularly the proponents of the sharing economy often use environmental arguments to promote their activities. In doing so, they run the risk of greenwashing, since, as we have seen, these arguments are fragile and subject to numerous conditions. But it is not only to avoid accusations of greenwashing that sharing intermediaries need to take a closer look at their environmental impacts. The principle of social and environmental responsibility applies to them as it does to all businesses, even more so because many position their activities as responses to the failures of the traditional economy, as alternatives that enable the building of “another economy”: a position that necessitates the integration of sustainability into the heart of their approach.

Sharing entrepreneurs must therefore begin with a better understanding of their environmental impacts, for example through the financing of life cycle assessments for the goods that they bring to the sharing market or studies into the behaviours of their customers/users. It is essential to better understand the conditions for the sustainability of a business model if one wants to then act on this model to optimize its sustainability.

What kind of actions can then be carried out? Vodafone could adapt its long-term mobile phone renting service, firstly by ensuring that returned phones are reused or at least 100% recycled, but also by not offering their customers the option to

change phone every year. Reselling Internet platforms could enhance the most sustainable products through a dedicated space, or by displaying their technical lifespan. Carpooling platforms could target the commuter market or adapt their payment systems so that the price of three people carpooling is less than that of two, and thus optimizing the use of vehicle spaces. Many options exist and sharing entrepreneurs are best placed to develop new ones, to identify obstacles and to invent their own solutions. But they must also set the objective of optimizing their environmental impact.

As we have seen, one of the key conditions is the durability of shared goods. B2C models have several advantages in this respect. Companies have—today at least—a greater ability to exert their influence upstream, on the production of goods, and downstream on recycling. Some of them already control the whole chain. They can and must use this power to influence. Finally, displacement induced by the transport of goods must be minimized and optimized.

To optimize the sustainability of sharing models, entrepreneurs must set this as an objective: these models are not “naturally” virtuous. It must also be the objective of the sharing economy proponents, whether we are referring to the emblematic figures of the sharing movement or the networks of entrepreneurs that are developing in France, Brussels and throughout the world. Entrepreneurs must make the shift from using environmental protection as an argument, to make it an objective. In the think tanks they create, the identification of

the conditions of their sustainability must be an issue that is as important as the identification of the regulations that block their development. In the actions they undertake, the inner lobby aiming to ensure sustainability of the sharing models should be given an equivalent position to that of the outer lobby that aims to adapt regulations.

4.3. The duality of consumers

With regard to the individual choices of the consumer, let us note firstly that his or her role is exacerbated in peer-to-peer models, where intermediaries such as companies are short-circuited. More generally, these models lead to a greater dilution of environmental responsibility, reminding us of our individual responsibilities. The environmental contribution of these models depends largely on user behaviour and the values that drive them.

In its opinion on the related concept of collaborative consumption, the European Economic and Social Committee²⁵ pictures it as being at odds with “overproduction and overconsumption, driven by the desire to ‘possess’”. These users do not consider consumption “simply as the ownership of goods but as shared access to their benefits, in order to meet real needs and secure the personal fulfilment that is worlds apart from symbolic consumption and the pursuit of artificially created desires.” Clearly, some entrepreneurs of the sharing economy are promoting these values and the consumers use all or part of these sharing models in that logic, which allows them to reduce their “environmental footprint”. But it is equally obvious that others, such as eBay’s “fashionistas”, are not deconsumers... and that the majority of consumers are both at the same time.

There are many studies on the current motivations of users of the sharing economy and collaborative consumption, and all converge on the idea that the main motivation is to optimize purchasing power (see Figure 3). But environmental considerations are not absent from individual motivations.

25. EESC (2014). Opinion on collaborative or participatory consumption.

5. A BETTER UNDERSTANDING

To conclude, let us return to an element that has appeared during the course of this study. Even though the sharing economy has been around for a long time and is currently undergoing a great revitalization, the literature in this area remains poor and many policy makers and project developers are now insisting on the need for a better understanding of the potential of the sharing economy and its impacts²⁶.

In particular, the analysis of the sustainability of the models is hampered by the lack of studies and its dissemination. To quote the candid remarks of one expert, “it is hard to reason on the basis of very poor statistical data.” It is therefore important that the scientific community makes a thorough investigation into certain practices that are absent from its radar, to better understand their environmental impacts. Beyond the life cycle assessments that could be carried out, it is crucial to better understand how sharing models transform goods and their uses. Indeed, the example of carsharing shows that a shared good can be used in radically different ways, opening new windows of opportunity for ecological transition. To make these changes in usages apparent, opinion polls cannot be limited—as is currently the case—to revealing the motivations of sharers. Beyond the question of “why”, we must also understand “how” sharing models are used. Peer-to-peer rental or reselling are part of the least studied models that deserve greater attention.

Obviously, “tensions” around the sharing economy are not limited to its environmental impact: they are also extremely strong in terms of employment, taxation and competition (see Annex). At a time when the first tensions are beginning to emerge, such as taxes and regulatory issues involving Airbnb, research must anticipate and analyse these tensions, helping to put a dialogue in place that can support the emergence of avenues for action. ■

26. The resolution signed by the mayors of nine major American cities in 2013 thus encourages “the best understanding of the sharing economy and its public and private benefits through the creation of robust and standardized analytical methods”.

ANNEX

The economic and social challenges of sharing

Beyond environmental issues, the sharing economy raises hopes and concerns of an economic and social nature. Thus, for some, sharing promotes social links, provides access to goods for those in lower social classes who were previously deprived of such goods, and provides a new growth driver; while others worry about its impact on employment, on the tax revenues of states or on the “social contract”. Below we list a few thoughts on some of these issues.

We will not dwell on social links, because it seems clear to us that the contribution of sharing economy practices for the “strengthening” of this link depends on each type of practice and on personal motivations. Bardhi and Eckhardt, after a close study of Zipcar users, challenge “the pre-existing romantic vision of this type of consumption”²⁷. We also want to underline the issue of “monopolization”. Indeed the “new” sharing economy models are based on platforms that tend to become monopolies: the sellers and buyers of goods and services have an interest in using the most common platform to reach the greatest number of people.

This trend toward monopolization raises the fear of abuse from dominant platforms, especially if these platforms are transnational actors involved in tax optimization systems or the production of standards.

The sharing economy and growth

Since the idea of growth is strongly linked to the ever-increasing production of goods, sharing could be seen as a vector of degrowth. But the economic growth of a country cannot be reduced to its ability to produce ever-cheaper goods and to consume more and more. What matters is not so much the good in itself, but more the service it is associated with, and the function it fulfils. If we can meet the mobility needs of two households by producing one shared car instead of two private cars, i.e. a priori for a lower cost²⁸, then there is

a productivity gain and therefore some growth in the economic activity. Households will be able to consume more of this “mobility service” or other things (see sectoral and macroeconomic rebound effects discussed above).

The sharing economy can therefore be seen as an engine of growth; however, it remains to be seen whether the GDP indicator will register this form of growth. It is difficult for the indicator to capture this transformation of a good into a service, while demonetized models and peer-to-peer monetized ones may also go under the radar. The problem is not so much the inability of GDP to describe this form of growth, but what escapes the GDP may also evade taxes and more generally the “social contract”.

Note, however, that the demonetized models or the peer-to-peer monetized ones are primarily used in addition to a traditional occupation, and not as a substitute, at least for the moment and certainly in the near future. Gift giving, in the same way as selling/buying goods on leboncoin then enables the saving of purchasing power to be spent elsewhere in the business economy in the purchase of goods and services accounted for by GDP (and subject to tax).

The sharing economy and employment

Sharing can lead to a reduction in the production of material goods, thus putting jobs in certain sectors at risk. It is important to note that in an economic and political context marked by the idea of “de-industrialization”, sharing would particularly threaten industrial jobs. However, the analysis in terms of employment should not be limited to focusing only on these job losses, as there are many other factors to be taken into account:

- i. The example of carsharing shows that, in return for the job losses in the manufacturing of the shared good, i.e. cars, some jobs are created in:
 - a. the sharing service: Internet platforms, vehicle maintenance, etc.
 - b. the production of equipment for sharing: electronic card lock systems or even rental charging stations such as those used by Autolib. In the specific case of car sharing, the increased use of public transport develops employment in this sector.

to the community that includes the full cost of the subsidies to these modes. In addition, the marginal cost of car sharing may appear prohibitive compared to the use of the vehicle as an owner and therefore the transformation of the mobility package seems inescapable: in short, it is public transport that develops to have zero marginal costs (subscription), while the marginal costs of cars drastically increase (price per km travelled), which is the reverse of today’s situation.

27. Bardhi, Fleura, and Giana M. Eckhardt (2012). “Access-Based Consumption: The Case of Car Sharing”, *Journal of Consumer Research* 39(4): 881–898.

28. In the case of carsharing, it is not sufficient to compare the average cost per kilometre travelled by a shared car and that of a private one. As we have previously seen, the use of carsharing is part of a different mobility package that relies much more on public transport in particular. It is therefore necessary to take into account the cost of public transport tickets for individuals, and the total cost

2. In addition, any gain in purchasing power related to sharing is spent elsewhere in the economy and also generates employment (“macroeconomic effect”). As the employment intensity of the automotive sector is very close to the average²⁹, it is difficult to make conclusions in the case of car sharing.

3. We must also take into account the creation of jobs related to the commercial rebalancing that sharing can enable: shareable goods are often imported and—most importantly—sharing can lead to decrease in energy imports (see the example of the effect of carsharing on the number of kilometres travelled). Moreover, the shared goods may change radically, giving back to the pioneering countries a competitive advantage for their industrial production.

4. Is the sharing of goods more labour intensive, and therefore less intensive in terms of capital, than the production of goods? This intuition which is a priori positive requires confirmation and its effect on employment must be studied.

While sharing clearly raises issues of transition, the balance in terms of employment is far from being necessarily negative and requires further study.

We should also note that the effect of sharing on employment cannot be limited only to quantitative assessment. Peer-to-peer models give the opportunity to individuals to develop an income generating activity, in addition to their “traditional” job or even replacing it, which also raises concerns in terms of employment quality.

The sharing economy and taxation

In a context marked by a political will to reduce public deficits, the sharing economy is a cause of concern, especially peer-to-peer models. While the production and sale of goods and services by companies generates tax revenue through corporation tax, VAT, taxes and labour and other taxes specific to each sector, the tax revenues derived from websites such as eBay, Zilok and AirBnB are less obvious.

Beyond the issue of the taxation of companies that are often international and can declare their profits almost anywhere in the world, the main concern is the problem of individuals not reporting the revenue they generate through these websites. In France, in terms of fiscality, the principle is simple: any income from a job or gainful activity should be declared. However, simply sharing the costs (for example for carpooling) is not something that has to be declared; while the sale

29. 210,000 FTEs for 15 billion euros Value Added, or 1% of employment and 1% of national VA.

or rental of goods and spaces does have to be declared, although there are some tolerance thresholds.³⁰ As for non-monetary exchanges, legally, we apply the term “contract for ‘pecuniary interest’ as soon as recompense is involved”, taxation thereupon applies and it is obviously complicated to assess how much. Finally, there are several solutions for declaring the income derived from sharing, depending on specific cases: the CESU (cheques for employment services), the “auto-entrepreneur” regime, commercial or non-commercial profits (BIC or BNC), professional or not.

The fiscal problem of the sharing economy is not therefore related to the existence of “black holes” in the legislation, but rather to the non-declaration—because of red tape or a lack of clarity—of often small sums. Should we therefore intensify the “hunt for tax evaders”? Or should we create a new and simplified legal status that is adapted to peer-to-peer trade? Should we establish a tax “franchise” so that individuals are not required to declare their income below a certain threshold?³¹ According to Anne-Laure Brun-Buisson, a lawyer specializing in the sharing economy³²: “Access to legality is complex,” as the tax system was not created for the peer-to-peer economy, “but people prefer to be within the law.” The use of digital platforms a priori enables the traceability of exchanges: the problem is therefore not technical.

Finally, regarding the issue of a fear of a decline in the tax revenues for the community, it should be noted that although the non-monetary or peer-to-peer monetized models are not taxed—or at least not to a great degree—they enable gains in purchasing power that are spent elsewhere in the economy and which are subject to tax, at least VAT (“macroeconomic effect”). It remains to be seen whether the tax rate on this additional consumption is higher or lower than that in force on shared goods.

The sharing economy, unfair competition and “dated” regulations

The current legal framework, which is overly cumbersome and difficult to read, may seem unsuited to the development of the sharing economy and more generally the peer-to-peer economy. For the proponents of this “new” economy, the issue goes beyond taxation—it is the

30. 600 euros per year for accommodation rental between individuals, but this should be checked according to the region of residence. Around 2,000 euros for resale, an administrative position that is not legally “solid” (Anne Sophie Novel [2013], *La Vie Share*, Editions Alternatives).

31. See the minutes of the Bercy Jam, that was organized by Ouishare on 25 June 2013.

32. Personal communication.

whole area of sector-specific regulations that must be reviewed. The cities of San Francisco (USA) and Seoul (South Korea) have thus established Sharing Economy Working Groups that bring together city departments, businesses and citizens with the aim to “explore laws that impact or are impacted by collaborative consumption, and explore policy alternatives and legislation to modernize those laws and address emerging impacts and issues.”

The difficulty is that these regulations can be used by established companies to protect their market from the emergence of new actors, but they have also been built to ensure the safety of consumers or to fight against social dumping. The example of UberPop is enlightening in this regard. This “carpooling” platform may enable

individuals to become taxi drivers with lower requirements regarding tariffs that have been agreed on by the profession, training and insurance. One can argue that the taxi business is over-regulated, that licensees are well-paid and that there are an insufficient number of taxis in many cities, which is certainly true, but these regulations also aim to avoid fierce competition that would be detrimental to professional drivers and arguably to consumers. The emergence of the sharing economy and the peer-to-peer economy certainly necessitates a review of the regulations. Some regulations may be absurd, others certainly exist to protect “lobbies”, but many of them are designed to regulate economic activities and to integrate them into the “social contract”. ■

The sharing economy: make it sustainable

Damien Demailly (IDDRI),
Anne-Sophie Novel (journalist and author)

IDDRI'S PUBLICATIONS

- Demailly, D., Chancel, L., Waisman, H. (2104). "A post-growth society for the 21st century", Iddri, *Policy Briefs* n°01/14.
- Chancel, L., Demailly, D. (2014). « Les politiques de l'emploi face à la croissance faible », Iddri, *Working Papers* N°02/14.
- Demailly, D. (2013). « Croissance verte vs. décroissance : sortir d'un débat stérile », Iddri, *Policy Briefs* n°12/13.
- Chancel, L., Demailly, D. (2013). « Quels enjeux pour la protection sociale dans une économie post-croissance ? », Iddri, *Working Papers* n°17/13.

Publications available online at: www.iddri.org

The Institute for Sustainable Development and International Relations (IDDRI) is a Paris based non-profit policy research institute. Its objective is to develop and share key knowledge and tools for analysing and shedding light on the strategic issues of sustainable development from a global perspective.

Given the rising stakes of the issues posed by climate change and biodiversity loss, IDDRI provides stakeholders with input for their reflection on global governance, and also participates in work on reframing development pathways. A special effort has been made to develop a partnership network with emerging countries to better understand and share various perspectives on sustainable development issues and governance.

For more effective action, IDDRI operates with a network of partners from the private sector, academia, civil society and the public sector, not only in France and Europe but also internationally. As an independent policy research institute, IDDRI mobilises resources and expertise to disseminate the most relevant scientific ideas and research ahead of negotiations and decision-making processes. It applies a crosscutting approach to its work, which focuses on five threads: global governance, climate change, biodiversity, urban fabric, and agriculture.

IDDRI issues a range of own publications. With its *Working Papers* collection, it quickly circulates texts which are the responsibility of their authors; *Policy Briefs* summarize the ideas of scientific debates or issues under discussion in international forums and examine controversies; *Studies* go deeper into a specific topic. IDDRI also develops scientific and editorial partnerships: among others, *A Planet for Life. Sustainable Development in Action* is the result of collaboration with the French Development Agency (AFD) and The Energy and Resources Institute (TERI), and editorial partnership with Armand Colin for the French edition, *Regards sur la Terre*.

To learn more on IDDRI's publications and activities, visit www.iddri.org

IDDRI



SciencesPo.

www.iddri.org