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What is the real potential of innovation? Does the rapid deployment of innovations lead towards a more sustainable and inclusive society? Can innovations and the emerging alternatives replace conventional models? Beyond technologies, what institutional innovations are required to support sustainable development?

A Planet for Life 2014 aims to answer these questions and explore innovation in all its aspects, through a series of texts written by international experts. The objective of this book is to analyse experiences from across the world and the role of innovation in a variety of areas of development such as urbanization, agriculture and food, the mobility of people and freight, education and the provision of water and energy to all.

The book includes:
• Papers by leading international experts and academics
• New perspectives through in-depth analyses
• Numerous maps, charts and tables
• A wealth of ideas for specialists and non-specialists alike: scholars, policymakers, administrators, concerned citizens, development professionals, entrepreneurs, journalists, students and others.
The economy of sharing and collaborative lifestyles has spread throughout the world since the late 2000s. These practices of bartering, gift giving, exchanging and reselling are not new, but they are making a comeback due to the combined effect of several crises (economic and financial, but also environmental and social) and the democratization of digital practices. By promoting usage over ownership, and by shifting consumption patterns from the reflex of purchasing new things in shops to alternatives such as loaning items, leasing or second-hand trading between individuals, these new habits are likely to promote a more sustainable economy.

It is therefore possible to differentiate a number of initiative types, starting with those that promote shared usage and transform goods into services. In this product-service system approach, ‘service providers’ are organizations (private or public) or individual owners seeking to maximize and promote the efficient use of their possessions. Another initiative type is the participatory dynamic of group purchasing or collaborative funding that makes possible the realization of a project. Associations for the Maintenance of Peasant Agriculture (AMAP) provide an example of participatory finance. These initiatives function through the dynamics of production, inspired by free software or the cooperative economy, and are based on the sharing of a common goal between the various contributors. Redistribution characterizes the third project category, in which it is possible to integrate the principle of bartering (in a non-market approach) or of reselling (in a market approach). In these initiatives, property or knowledge is exchanged in return for other goods, or something of equivalent value in terms of time or money. The last type of initiative we consider here is coliving, where the primary aim is the pleasure of doing things together, such as sharing a place, a time, an activity or experience, regardless of property.

The models on which these different modes of contribution and exchange are based are adjusted to suit the users according to the nature of the objective, which may be solidarity or related to cost-sharing or the need to increase purchasing power and make profit. The disintermediation generated by the Internet also fosters the development of short circuits in the supply chain (for example via AMAP or through services such as La Ruche qui dit Oui!) and forgoes the democratization of 3D printing (which in a few years will allow anyone to print objects, thus enabling people to produce or repair products themselves). These two developments will make it possible to envisage low-carbon modes of distribution and production. However, several questions are raised in relation to the environmental impacts of this new economy. While these initiatives are intuitively considered to be more eco-friendly, there have been relatively few studies on the subject. The following pages set out some areas of open discussion that should be explored in the coming years.

1. See in this respect the work of Emilie Morcillo, which distinguishes between the rationale that underlies the solidarity sharing approach of non-profit set ups, and that of profitable collaborations - see www.partageandco.com
The eight characteristics of the collaborative economy

The main features of the sharing economy are defined as follows.

**Allocation optimization.** In the pre-digital era, sharing was limited to a small circle of people, today we have tools such as the Internet that enable much greater distribution opportunities. Peer-to-peer technologies and geolocation tools reveal a multitude of local opportunities that could not previously have been appreciated in this way. Thus, the Internet has reinvented and intensified some very old-fashioned methods.

**Property pooling.** Through the promotion of usage (of products or techniques), rather than focusing on ownership, the sharing economy brings together the possessions of participants to encourage their usage by many. Whether this relates to objects used on a daily basis, such as a house or a car, a purchase, project or even a skill, the rationale consists of expanding a possession’s circle of beneficiaries, thus reducing the number of new goods consumed.

**Usage extension.** Shared and/or mutualized objects undergo an increase in their usage duration in comparison to their originally planned usage at the moment of acquisition by a particular individual. The development of these practices, which are stimulated by a better organization among peers, results in the more careful maintenance of items. Mutual assistance and the exchange of expertise, also driven by the desire to permanently preserve objects, tend to limit the effects of planned obsolescence. In some cases, consumers also organize themselves so that they can repair broken objects whenever possible. In other examples, the shared goods are actually more durable, since they were purchased...
Innovations for Sustainable Development

from the outset in such a perspective. Ultimately, such practices will encourage manufacturers to change their production methods towards a more service-based approach, the main objective no longer being simply to sell a product but to support the experience and usage of a product. The principles of bartering and models such as the one employed by the company Eqosphere (a logistics platform) are expected to develop, partly because they limit waste and also because of the savings they generate.

Reducing CO₂ emissions and materials. All things being equal, the combined effect of optimization (which relocates and limits travel distances), mutualization and usage extension, causes a reduction in resource consumption and CO₂ emissions. However, when consumers feel that they have done something good, they may feel justified in claiming a certain amount of ‘moral credit’, which can lead to rebound effects. Indeed, does cheaper travel encourage people to travel further? Does car sharing simply encourage the more frequent use of the car? Do the savings made by buying second hand clothing imply a greater expenditure on digital equipment?

Socialization of experiences. Adherents to these lifestyles appreciate the mutualization of uses for reasons that are primarily economic, but also for the social dynamic that they receive. In addition, in times of crisis, these services offer an important sense of belonging to

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a community. This membership is particularly reassuring given that it is based on the ability to openly evaluate the transactions and the exchanges made.

Co-creation projects. The use of the web has progressively transformed communication strategies into conversation strategies. Organizations have started referring to ‘community manager’ functions which are now combined with ‘community co-creation’ ones. It is no longer only about talking, but about inviting the community to participate in the production of a marketing campaign, to the customization of an object, etc. and thus ultimately to design more products that are more tailored to expectations and uses.

Open and innovative cooperation and collaboration. These new modes of production will transform the operation of internal and external relations of organizations. From a vertical and prescriptive rationale, they will horizontalize and give rise to the emergence of new professions (facilitators, service designers, etc.) that are responsible for listening to the various stakeholders and to define an action framework derived from their different contributions. This development will contribute to the improvement of the ownership and implementation of Corporate Social Responsibility (CSR) policies.

Modification of economic models. All of these features are part of a fundamental change in the functioning of the economy and society. From the types of purchases, to purchase reflexes, through to the creation of new value chains. The current models must therefore be revised fully or partly, to adapt to these new practices. Where some platforms rely on the development of technology, others will work on the ergonomics of their locations or on ‘the extra service’ offered by their activity. All these criteria then intersect with the choice to offer services that are free or have a progressive pricing policy for usage.

But what are the main drivers of the collaborative economy? Is ecology a motivation for participants?

Collaborative practices driven by the search for purchasing power

Proponents of collaborative consumption are mainly attracted to these practices by the financial gains of these new modes of exchange. A recent study published in April 2012 by the French Environment and Energy Management Agency (ADEME), which was based on the les 4,500 data from the IPSOS Observatory of Lifestyles and Consumption, was the first to focus on the motivations of French people who participate in AMAP, carpools, the rental of private goods, bartering, group purchasing or reselling - six practices that are part of the collaborative consumption model. Some of the study’s main findings are summarized below.

First observation: the sampled consumers do not predominantly shift away from a conventional consumerist outlook. In a survey by l’Observatoire Société et Consommation (OBSOCO) published in November 2012, it appears that adherents to these new modes of behaviour, in all categories, are by no means mounting a challenge to the hyper-consumption society. The OBSOCO study revealed that the level of commitment to these emerging consumption practices appears to be highly correlated to the intensity of the budget constraints felt by respondents. In a context of crisis, we seek to give meaning and to mend the social bond at the heart of the consumption process.

Second observation: among collaborative lifestyle participants, those that are acting on the basis of an environmental cause, or for the sake of societal or collective reasons, are in a minority. It is only within an AMAP that such motivations represent the main stimulus for action for those involved. However, only a small proportion of the French population have participated in an AMAP (6% of the population) compared to those involved in group purchasing (52%), whose motivations are very individualistic.

It should be noted however that participants share four common characteristics (according to the ADEME-IPSOS survey): they are curious, with a desire to regularly meet new people; they care about society, although this concern does not necessarily translate into concrete action; they have an adventurous side with a propensity to explore and experiment (even in terms of risk-taking, as mentioned in the study); and they seek to prolong the use of goods and thus express a desire to escape from the cycle of the planned obsolescence of consumer goods.

Collaborative consumption therefore benefits from being able to attract people for reasons that are primarily
economic and financial, and can then create social ties and comradeship while generating, over time, more environmentally-friendly behaviour. A 2011 analysis by the US magazine *Shareable* and the Latitude agency found that 75% of British people believed that sharing is good for the environment, and that eight out of ten are happy when they share.\(^3\) Similarly, 60% of American collaborative consumers make a direct link between sharing and sustainable development.

But what are the environmental benefits of these new behaviours? And how can they be assessed?

**Does collaborative consumption reduce environmental footprint?**

Relatively few studies, and even fewer independent ones, have focused on the assessment of the environmental impacts of collaborative consumption.

**What do we learn from car sharing experiences?**

Starting from currently available estimates in the transport sector, which is the most studied sector, we find that one of the two European car sharing leaders (Blablacar) claims on its website to have saved 500,000 tons of CO\(_2\) through the 10 million journeys made since the creation of the business.

With regard to car sharing between individuals (based on a fleet of existing vehicles), a study conducted by the University of Berkeley\(^4\) involving 9,500 people who car share in Canada and the US highlighted two findings: an increase in CO\(_2\) emissions for households who gain access to a vehicle for the first time through car sharing; and that this increase was offset by the reduction in emissions from households that limit, conversely, the use of their own car – and who ultimately abandon the possession of their vehicle, realizing that it costs them less to borrow a car as and when needed than to maintain one throughout the year. A study conducted in 2008 among 6,281 members of a US car sharing company showed that distances travelled decreased by 27%, which from 1 January 2013 would have resulted in a reduction of around 1.1 billion miles. In total, 25% of respondents sold their own vehicles, and 25% would consider buying a car if the car sharing option disappeared.

Another study by Eliot Martin and Susan Shaheen which sampled 6,200 car sharing participants (who were involved with providers such as Autolib or organizations like the France Autopartage network for example), estimated that nine to thirteen vehicles were not in use for every one car used in the car sharing fleet. Of this total, four to six cars were abandoned directly by households who joined the service. The usage of the remainder was avoided through a subscription service.\(^5\)

In France, the research group 6T noted in a study carried out for ADEME in March 2013 that ‘the number of households that do not own a car increases by 40% with membership in a car sharing service. In view of the decrease in the number of cars owned by households, each car from a car sharing scheme replaces nine personal cars and frees up eight parking spaces’\(^6\). The study also noted that the number of kilometres travelled as a driver decreases by 41% and that car sharers save money by using modes of travel they otherwise would not: they walk more (30% of them), cycle (29%), use public transport (25%), train (24%) and car pooling (12%).

It is also worth noting that a company such as SNCF (the French National Railway Company) is gradually integrating these new options of car pooling and car sharing into its transport service. With its acquisition during summer 2013 of Greencove and Ecolutis, SNCF was aiming to develop a ‘capillary mobility’. This is one way to compensate for the lack of transport in underserved areas and promotes the gradual incorporation of a very broad concept of mobility.

In urban areas, the development of services will generate (and already generates) a review of spatial planning to make areas more responsive to public transport and shared transport. Today’s challenge is to develop a subscription offer and a plan that accompanies and facilitates the usage of these modes of transport.

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\(^3\) *8 out of 10 people say sharing makes them happy*, by Kelly Mc Cartney (February 2011)


\(^6\) http://6t.fr/download/ENA_6pages_presse_bios_130320.pdf
Shared spaces and grouped housing. Moving on to the example of grouped housing or other forms of shared spaces (for tourism or work): while analyses are few, those that have been carried out suggest that the optimization of existing spaces can limit new construction and urban sprawl. This applies to colocation services and to cohousing (France being way behind in this field compared to Germany, where more than 6 million homes can be classified as grouped habitats, and Quebec where 22,000 housing cooperatives accommodate 250,000 people in 91,000 dwellings, which represents 30% of Quebec’s public housing).\(^7\) This category also includes private storage services that enable the use of existing built areas and thus avoids the construction of dedicated warehouses. ‘If 5,000 people offer a medium-sized location for co-storage, which we hope will be the case within two years, then about 25 self-storage warehouses will not have to be built. Or their locations be will be used to build houses,’ said Adam Levy-Zauberman, founder of CoStockage.

CoStockage also operates a local service which enables participants to store items at a neighbour’s property, rather than in a suburban warehouse, which involves less vehicle usage - both at the time of putting items into storage, but also during visits. CoStockage estimates that trips are reduced by a factor of eight, along with the corresponding decrease of CO\(_2\) emissions, thus avoiding more than 500,000 km travelled. Shared dwellings where several households share a common space also enable the sharing of the use of vehicles or certain appliances, limiting the consumption of natural resources, CO\(_2\) emissions and the quantity of waste generated.

Does the short-circuiting of food supply chains contribute to the reduction of carbon emissions? In May 2012, ADEME published a study\(^8\) that indicated that this does not necessarily lead to lower greenhouse gas emissions, for example if the means of transport are inadequate, if the logistics are insufficiently optimized or if consumer behaviour is inappropriate.

In terms of monitoring the transactions and expenditure flows generated by increased purchasing power, are the savings made by collaborative consumption participants actually saved, or do they generate new spending? If the latter, does such new expenditure feed into the traditional circuits of the economy? Or does it circulate within the collaborative economy? In short, does sharing more mean consuming more? What are the rebound effects?

It is also necessary to conduct a close examination of the environmental virtues promised by collaborative consumption schemes to see what the savings really are in terms of natural resources. While the optimization of use and reuse could certainly translate into a decrease in the production of goods, an increase in product durability, and goods that are easier to maintain, repair and recycle; conversely, optimized usage could simply equate to goods wearing out more quickly. To what extent would either of these scenarios occur? Are companies ready to provide more durable and repairable goods, to adapt to these new usage conditions?

In sectoral approaches, it will be useful to focus on new tourism practices to see whether the sharing economy actually increases the number of trips taken, and thus the tons of CO\(_2\) emitted each year.

In the finance sector, it is important to assess the impact of crowdfunding services on the polluting investments of banks (see studies by Utopie or Friends of the Earth), even if this impact is likely to remain low for now.

Finally, the question of models and their legal framework must also be addressed to best estimate the risks that may be created in terms of fiscal and social dumping. While the sharing economy has been booming in France and around the world since the late 2000s, a better measure of the induced effects on the environment and society is becoming essential to improve its support and inclusion in public policies for sustainable development.

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