



## The sharing economy

New opportunities, new questions

**Chiara Farronato** and **Jonathan Levin** The spectacular rise of sharing platforms. **Nicolas Brusson** How to disrupt the global city-to-city transport market. **Marco Abele** and **Salvatore Iacangelo** Sharing vs. owning: A regulatory challenge. **Christine Schmid** Peer-to-peer models are reshaping the banking industry.

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Global Investor with you  
**The sharing economy**  
New opportunities, new questions  
Enjoy! Hope you're  
up for sharing more stuff  
with me in future.  
Best,  
\_\_\_\_\_



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**Giles Keating**

Vice Chairman of Investment Strategy & Research and Deputy Global CIO

The “sharing economy” arouses strong passions. Taxi services like Uber and Didi Kuaidi, home-shares via Airbnb and peer-to-peer loan sites like Zopa and Lending Club have millions of enthusiastic users, but also powerful critics. This Global Investor offers the perspective of both sides and asks whether the hard cash value of the sharing economy matches the emotions.

Advocates see radically reduced middleman costs, unprecedented flexibility for users and suppliers and new networks of trust (via reviews, track records and identity checks) that allow completely new transactions. Holiday rentals existed decades ago and grew as the Internet brought down costs, but they mainly covered dedicated holiday homes. Airbnb has expanded this to a new mass market by persuading people to rent out their own home to complete strangers, reassured that the renter has been checked across social networks and the web. Trust is at the heart of the sharing economy.

But sometimes this trust may be misplaced, especially since the sharing economy business model relies on low-cost checks. Uber missed the criminal record of a driver in New Delhi recently convicted of assaulting a passenger. More broadly, critics argue that the sharing economy tends to ride roughshod over regulatory and tax regimes, gaining an inappropriate business advantage. And they criticize low pay for service providers compared to the pre-sharing economy – though this does not apply where new mass markets are created as for own-home holiday rentals, nor where reduced middleman costs allow both providers and users to benefit as in peer-to-peer loans.

Looking beyond this passionate debate, we estimate that the sharing economy’s contribution to GDP is small, perhaps because sharing often involves only modest payments. Offering a visiting student a spare couch and a ride generates welfare and reduces emissions, but (like many productivity-boosting innovations) its direct effect on GDP can be negative (the student would otherwise have needed a formal hotel and a train ride) although the indirect effect can be positive by encouraging more travel and freeing income for other spending.

The burst on the scene of the sharing economy is a prime example of Schumpeterian creative destruction, made possible by the Internet and the enthusiasm of participants around the world. Adam Smith’s “invisible hand” has gone viral. Enjoy!

# PEER NETWORKS ARE CONNECTING THE DOTS

*The Internet had its genesis as a tool for sharing information, and its earliest origins served only select scientific and military communities. Over time, it became the World Wide Web, including the power of peer-to-peer networking. It's not just information that's shared today – it's just about everything. It might be a ride across town, or across the continent. Travelers share their homes, investors share their ideas and anyone with high-value assets or skills is able to make them accessible, for a price, to a global marketplace – as part of the sharing economy. → Page 27*



## MOBILITY

If you need to get from A to B, there are now a host of options to meet your needs. You can ride in a Rover, or do the driving yourself in a Daimler. You can even connect to find a perfect parking spot.



## FOOD

From haute cuisine to oatmeal, foodies are sharing recipes, dining recommendations – and even their leftovers.



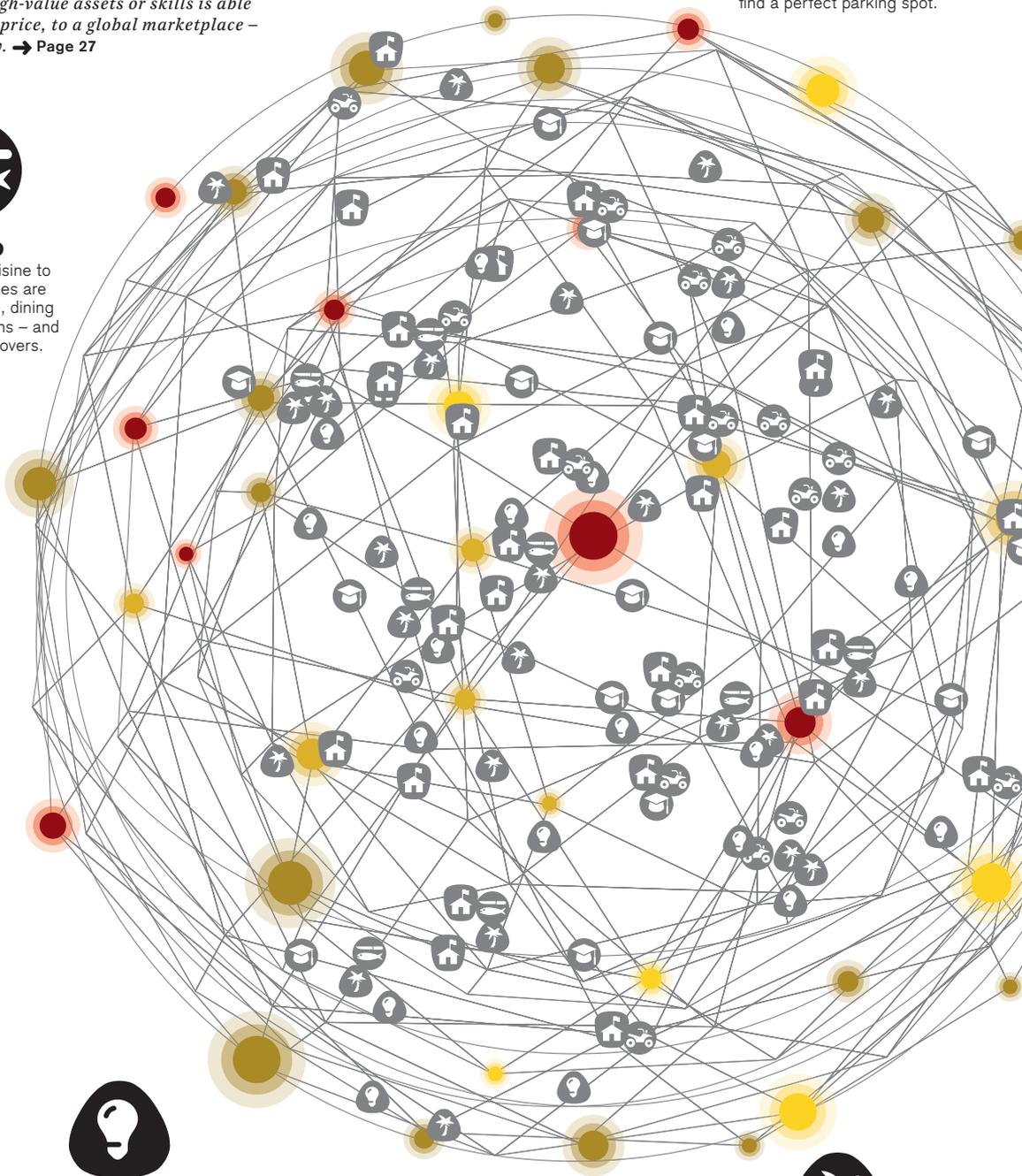
## EDUCATION

Millions are taking online tutorials on a wide range of topics, and archiving efforts are under way to preserve vanishing content.



## HOME AND OFFICE

On-demand commercial and retail space is popping up everywhere. And if you need someone to manage it, just call the cleaners.



→ Page 28 It's a clear trend toward sharing, but not universally. We're happy to share food, tools and skills. Toothbrushes? Less so.



## GOOD IDEA

There is no shortage of bright ideas here. What about a wood recycling program? Or a free mobile chat service? How about a how-to guide on building almost anything?



## LEISURE/ TRAVEL

Looking for the perfect stay, a tailored day trip, local expertise on using transit or maybe just a pick-up game? You'll find it!

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# The rise of peer-to-peer businesses

TEXT CHIARA FARRONATO AND JONATHAN LEVIN

**T**he spectacular growth of companies such as Uber and Airbnb, and the ongoing debate about how to regulate them, has focused attention on businesses that are using Internet and mobile technology to create marketplaces or assignment mechanisms that match up disparate buyers and sellers. These businesses can be found across a broad swath of industries – transportation (e.g. Uber, Lyft, Blablacar, Didi Kuaidi), accommodation (Airbnb, Kozaza, Couchsurfing), household services (TaskRabbit, Care.com), deliveries (Postmates, Instacart), retail commerce (eBay, Etsy, Taobao), consumer loans (Lending Club, Prosper), currency exchange (TransferWise, Currency Fair), project finance (Kickstarter), computer programming (oDesk, Freelancer) – and countries. In some cases, these companies are trying to create more efficient or lower-cost versions of consumer products such as taxi service or small loans. In other cases, they are trying to create services that many people did not have access to, such as on-demand delivery service, or start-up business financing.

The media has tried, with only partial success, to find a label that describes what these new businesses are doing. For instance, the term “sharing economy” captures the idea that people can sometimes have a spare asset (a seat in their car, a room in their home, an unused

lawn mower) and sometimes be in need of that same asset. It is an apt description for companies such as Blablacar, Couchsurfing and Peerby that are trying to create communities where people exchange rides or overnight stays or household goods. Sharing economy seems less apt when applied to marketplaces such as Etsy, where small producers sell craft goods, Prosper, where individuals can make consumer loans, or Care.com, where nannies or caretakers offer their services. The participants’ roles in these markets are more clearly defined, and new goods, money and time are less obviously viewed as spare assets to be shared. Instead, these businesses sometimes refer to themselves as peer-to-peer to capture the idea that both buyers and sellers tend to be individuals or small firms, even if their roles are more clearly defined.

## **Restructuring the marketplace to facilitate trade**

We will use the term peer-to-peer as a general umbrella even though in some of the examples above, the buyers or sellers sometimes can be professionals or larger firms and arguably not “peers,” and despite the fact that the businesses above are not necessarily organized in the same way. For instance, companies such as Airbnb, Care.com and Etsy are set up as decentralized marketplaces. They enable sell-

ers, often individuals or small firms, to make their products or services available to a wide range of buyers. In contrast, companies such as Uber, Lyft, Instacart or Postmates also create value by matching up buyers with individual sellers (workers), but they look different from the consumer perspective because they internalize the matching process. When a shopper places a grocery order on Instacart, the consumer says what groceries they want and when they want them delivered, and Instacart finds an available worker, sometimes an employee but most often a contractor who is hired for a one-off spot market transaction.

*“Internet marketplace businesses and p2p services are trying to solve the same problems.”*

**Chiara Farronato**

Despite these differences, we would argue that both Internet marketplace businesses and peer-to-peer service businesses are trying to solve essentially the same problems in order to facilitate trade. We view these problems as threefold. First, a successful marketplace or assignment mechanism requires an efficient, low-cost system for matching up buyers and sellers and finding agreeable terms of trade. Second, it is necessary to make exchange safe, by fostering trust. Finally, there needs to be a value proposition that attracts both buyers and sellers – in the words of last year’s Economics Nobel laureate Jean Tirole, these are “two-sided” markets where it is essential that both buyers and sellers capture some of the benefits from trade. As we will suggest below, these three problems need to be solved whether people have distinct roles as buyers or sellers, or switch back and forth, and whether the platform is organized as a decentralized market or a centralized assignment mechanism. Indeed, these can be viewed as different approaches to solving the same underlying problem of efficiently coordinating trade.

Before turning to these three ingredients, we should note that the problem of creating platforms to match up buyers and sellers is not at all new. One might argue that in a certain sense, there is not much difference between a marketplace such as eBay and a medieval merchant fair, or between Airbnb and the apartment rental section of a newspaper’s classified ads. What is different is that technology has allowed much improved solutions to the problems posed above. A medieval merchant fair involved people traveling to a set place at a set time, with high costs of transportation and synchronization. Classified advertising, while not requiring everyone to show up in one place at one time, merely initiated a discovery process that could be costly and time-consuming. When a modern Internet marketplace functions well, it is vastly faster and more efficient for a buyer to consider a wide range of sellers (or vice versa), sometimes without regard for location, and to feel relatively sure he or she will be well-served. continued on page 12 >



Photo: Edward Caldwell

### **Chiara Farronato**

**A recent PhD graduate from Stanford University, Chiara Farronato is an assistant professor of business administration in the Technology and Operations Management Unit at Harvard Business School. She studies the economics of the Internet and innovation, with particular focus on the market design of peer-to-peer online platforms.**

# COOPERATION

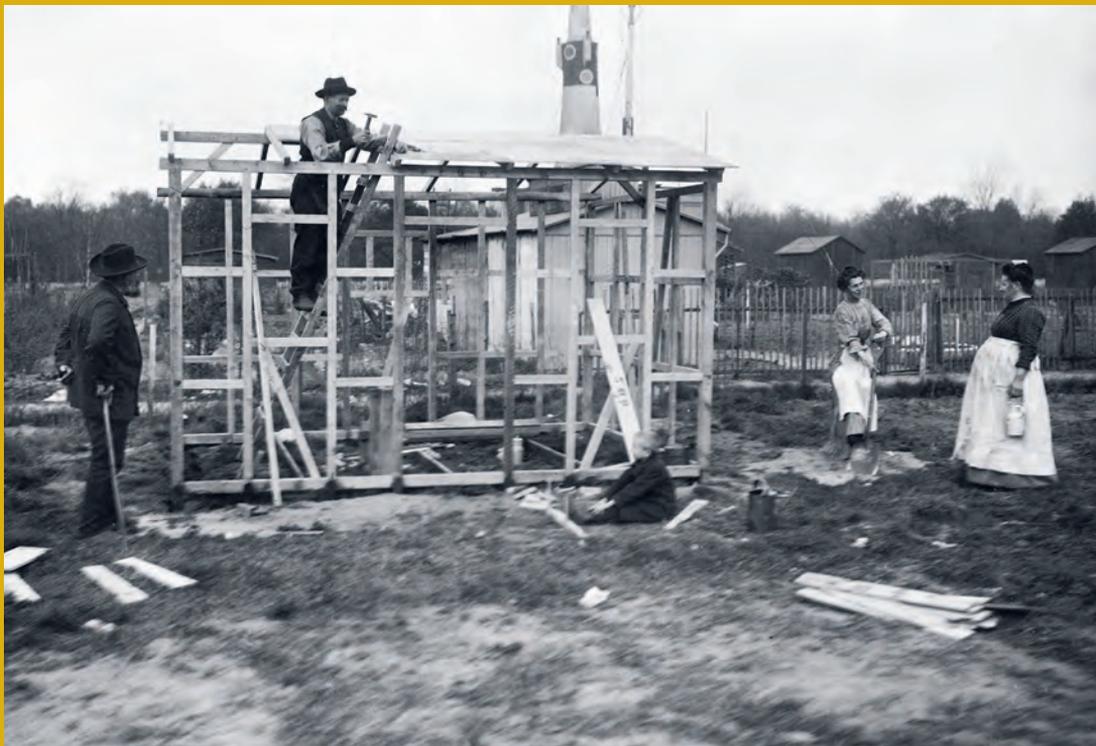
# *Sharing in times of scarcity*

*Wars, natural catastrophes and social upheaval all bring about hard times in which scarcity of one kind or another features prominently. Throughout history, people have shown a tendency to pool their resources to increase everyone's chance of survival in such adverse circumstances. Sometimes this kind of sharing is merely transitory; sometimes it sparks lasting societal change.*

## Community gardens

### 1864 GERMANY

The rise of allotment gardens in Germany in the 1800s coincided with mass migration of people from the countryside to the cities of industrialized Europe in search of work and a better life. Because these families were often in dire straits, city administrations and others provided them with open spaces where they could grow their own food. These gardens eventually evolved into the community gardens that are typically found today in Germany, Austria and Switzerland.



## Rochdale Equitable Pioneers Society

### 1844 ENGLAND

In 1844 a group of 28 tradesmen (mostly weavers) in Rochdale, England, with a vision of a better life decided to open a store to sell food items they could not otherwise afford. Mindful of the failures of previous cooperative efforts, the "Rochdale Pioneers" formulated a set of principles founded on ideas of self-help, democracy, equality,

solidarity and cash trading (to avoid running up debts). Anyone, including women, could join the cooperative by paying GBP 1, and profits would be shared with members. The pioneers began by selling butter, sugar, flour, oatmeal and candles, two nights a week, at a rented store at 31 Toad Lane. They soon expanded, and their emphasis

on pure food at fair prices earned them a reputation for quality. By the 1860s, the Rochdale Equitable Pioneers Society was seen as a model cooperative and was drawing visitors from around the world.



## Kibbutzim

# 1909

## ISRAEL

The first kibbutzim were founded in the early 1900s by emigrants to Palestine. These were utopian, collective living arrangements designed to ensure survival in a harsh environment. Fundamental principles included community labor and sharing resources. The early kibbutzim were based on agriculture, but later groups came to play a role in military activities and in state building.

Over time, kibbutzim came under pressure owing to fallout from the creation of Israel, floods of refugees from Eastern Europe and Arab countries, the Cold War and the growth of capitalistic practices. The kibbutz population peaked in 1989 at 129,000. As of 2014, there were 267 kibbutzim in Israel. Few, however, operate along the lines of the traditional model.

## Rural electrical cooperatives

# 1930

## UNITED STATES

In the mid-1930s, most rural homes in the USA were still without electricity. In 1933, the federal government's Tennessee Valley Authority Act authorized the construction of transmission lines in underserved farms and small villages. Rural electrification received a major boost when Roosevelt established the Rural Electrification Administration (REA) in 1935. The REA provided loans to locally owned rural electric cooperatives to construct lines and provide service on a nonprofit basis. In the years following World War II, the number of rural electric systems in operation and the number of consumers connected increased sharply. By 1953, nearly all US farms had electricity.



## Italian cooperative movement

# 1854

ITALY

The founders of the first Italian cooperatives were inspired by efforts elsewhere in Europe, such as the Rochdale Pioneers and German experiments with financial services.

The first Italian cooperative was founded in Turin in 1854 by the workers' mutual assistance society, to lessen the high cost of living.

By the end of the 1800s, Italy had social credit banks, farmers' cooperatives, vineyard and dairy cooperatives, and worker cooperatives.

→ 1 The Secab Cooperative Society was founded in 1911 for the cooperative production and distribution of hydroelectric power. In 1913, the society inaugurated its first plant, which used water from the Fontanone River to supply electricity during the night for local residents and during the day for the area's nascent industry. By 1925 the society boasted 260 members representing six towns. Further plants were built in 1926 (Cima Moscardo) and 1932 (Enfretors). In addition to providing electricity, the cooperative also offered free training to young electricians and served as a kind of social glue. → 2 During World War II, the coastal town of Piombino and its Ilva steelworks were reduced to rubble. In the midst of poverty and unemployment, the former steel workers and management joined forces to restore the factories. In early 1945, the factories reopened.

At the same time, the steel workers also launched "La Proletaria" (the proletarian), a consumer cooperative intended to help workers and their families to obtain basic necessities. → 3 The first of La Proletaria's stores offered only chestnuts and chestnut flour, a sign of difficult times. But the cooperative was committed to opening new stores and forming links with other cooperatives in the region. With the help of the steelworks, which provided trucks for transport, baked goods, farm products, fish and textiles also became available.



1



2



3



**Amul cooperative**

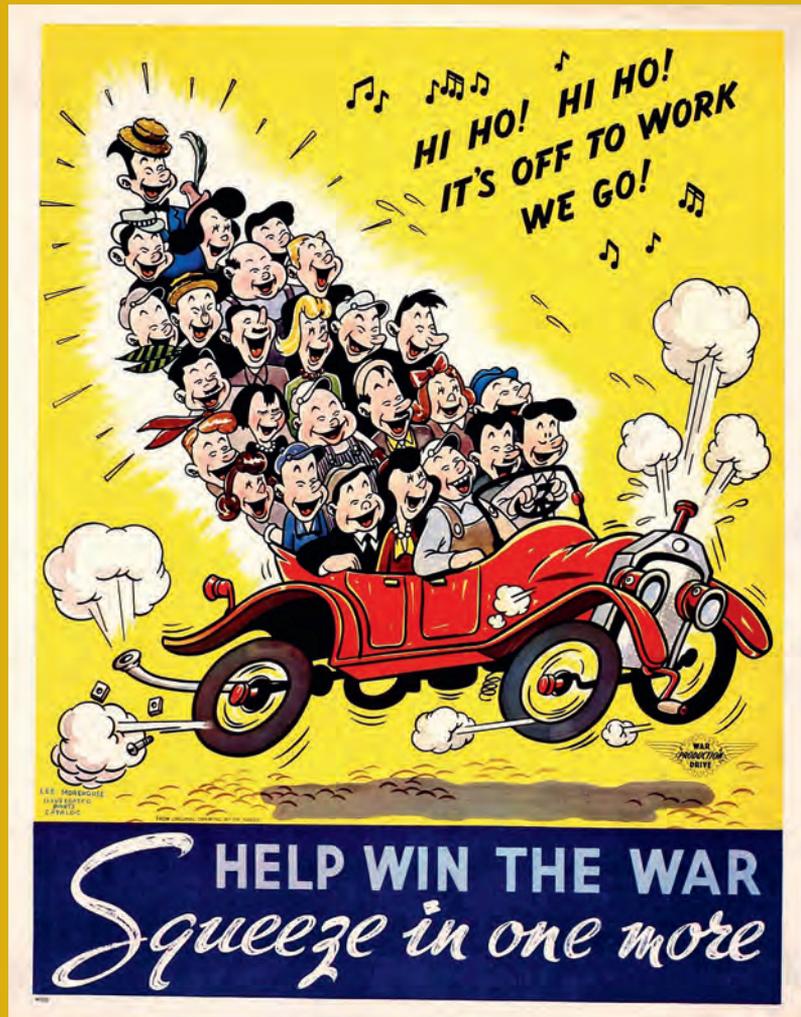
**1946 INDIA**

Around the time of Indian independence in the mid-1900s, small rural farmers relied on middlemen to get their milk to market. The farmers were frequently exploited by both the middlemen and larger milk contractors, which set milk prices arbitrarily. In 1946, in the small town of Anand, in the state of Gujarat, farmers approached independence leader Sardar Patel for advice. He suggested that they bypass the middlemen by forming their own cooperative and supplying milk directly to the government-run Bombay Milk Scheme themselves. After striking to show their determination, the farmers set up the Kaira District Cooperative Milk Producers Union Ltd., which at the time consisted of two village dairy cooperative societies and 247 liters of milk. The cooperative societies proliferated and gave rise to a three-tiered structure comprising dairy cooperative societies at the village level, a milk union at the district level and a federation of member unions at the state level. In 1957, sensitive to the importance of branding, social entrepreneur Verghese Kurien launched the Anand Milk Union Ltd. (Amul) to export the dairy cooperative idea to other states. Finally, in 1965 the Indian government created the National Dairy Development Board to replicate the Amul model. Today, the Amul cooperative is the largest milk producer in the world and enjoys annual revenues of over USD 3 billion.

**Ride-sharing**

**1946 UNITED STATES**

During World War II, the US government encouraged ride sharing to conserve resources for the war effort. In July 1941, the Office of the Petroleum Coordinator, established by Roosevelt, launched a petroleum and rubber conservation campaign asking drivers to use 30% less gasoline by various measures that included sharing rides. This initial effort had little impact. The petroleum industry then formed a products conservation committee that relaunched the ride-share initiative through widespread use of media such as posters. While the initiative's success proved hard to measure, the posters were widely recognized.



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What goes into creating an efficient low-cost mechanism to match buyers and sellers? One point to start with is that cost needs to be judged relative to the value of the transaction. Hiring a nanny is a long-term consequential decision for most parents, so a low-cost marketplace might be one that lets parents easily identify and interview desirable candidates. The stakes are lower when ordering ice cream on a Saturday night, so “low-cost” probably means pressing a button and knowing the delivery charge will be less than the price of a few pints of mint chip. In a recent paper we wrote with Liran Einav of Stanford University, we argued that platforms often have to resolve a trade-off between efficiently eliciting and using information – a key feature of almost every market – and minimizing transaction costs. So for instance, a family hiring a nanny may have quite idiosyncratic needs and preferences, making it desirable to offer the family a range of options and let them select. From this perspective, it makes sense that Care.com or Airbnb for that matter are organized as decentralized marketplaces. Conversely, the family ordering ice cream on a Saturday night or someone looking for a ride home from a bar most likely just wants a safe, quick delivery, so it makes sense that Instacart or Uber internalize the matching process and prioritize the speed of assignment over the choice among drivers.

### Three key ingredients: Efficiency, trust and value proposition

The ways in which prices are set involve similar trade-offs. For a number of years after eBay started, all its sales were by auction. Economists love auctions because a successful auction finds the price at which a market clears – in an ascending auction, for example, participants bid up the price until there is only one willing buyer left at the going price. But auctions also can be time-consuming and a hassle for buyers, and over the last decade, eBay sellers mostly have given up on them. Today, a vast majority of listings involve a posted price. Internet marketplaces such as Prosper (for consumer loans) and TaskRabbit (for household tasks) also started with auction pricing, and have switched to fixed prices for greater convenience.

Trust is a second crucial ingredient for successful marketplaces, and can be especially tricky when buyers and sellers do not know each other and may transact only once. Peer-to-peer marketplaces rely on a mix of up-front screening, ongoing feedback and external enforcement. For example, Uber performs criminal background checks and reviews vehicle records before accepting drivers. It has an anonymous feedback system where both drivers and riders rate each other after each ride, and the feedback can be used to eliminate risky drivers or riders. Finally, it protects each ride with insurance coverage. When compared with traditional markets, the mix is often skewed towards continuous monitoring and less up-front screening. Black cab drivers in London historically have studied for several years to learn the city routes, but becoming an Uber driver might take just a few days. Instead, their performance is tracked over time. The reliance on ongoing monitoring is possible in part because technology has made rapid and frequent feedback possible, but also because of the perhaps surprising fact that customers actually do provide feedback when it is easy to do so. Despite the risks of biased or fake reviews, marketplaces have kept on improving their reputation mechanisms, and in practice many systems seem to work well enough to screen out most of the really bad actors.

A third ingredient for a successful marketplace of peer-to-peer business is that it needs to attract participants, enough buyers and sellers to create a relatively thick market. The ideal of course is a



Photo: Edward Caldwell

### Jonathan Levin

A professor of economics at Stanford University, Jonathan Levin works on a broad range of topics. These include the economics of technology and the design of auctions and marketplaces.

virtuous circle where sellers are attracted to a marketplace with many buyers, and buyers are attracted to a market with many sellers. To enable this, many successful platforms focus on lowering sellers' costs of setting up and advertising their business, allowing individual workers and flexible suppliers to participate and expand the set of products and services. Uber currently has around a million part-time drivers, and uses adaptable pricing to try to attract more drivers in periods of peak local demand. Similarly Airbnb makes it easy to become a part-time hotelier, so that buyers often have a choice of unusual or diverse properties, and supply can expand on occasions when demand is particularly high and prices rise.

An interesting economic question raised by some of the new on-demand service businesses is whether the currently fashionable model of relying on flexible part-time workers will prove to be a long-run arrangement, or merely an expedient way of getting off the ground. There are potential advantages to having flexible workers because they may be able to better serve highly variable or highly heterogeneous demand. On the other hand, quality and reliability may be higher when workers make up-front investments in training or equipment, or have the opportunity to acquire experience. The experience in e-commerce may prove to be telling. At one point, occasional consumer sellers were a focal point of businesses such as eBay, but nowadays, most of the sales made on eBay or on Amazon's marketplace are made by dedicated professionals.

#### **The challenges of regulation on a new frontier**

Regulatory and legal decisions may also impact these business models. Platforms that use independent contractors to provide services are not responsible for providing employment benefits such as health or disability insurance. The independent contractor model also means that platforms do not have to purchase and maintain equipment (although in cases when lower unit costs are achieved with scale, this might be the efficient solution), and potentially shields them from some liability when transactions go wrong. From a worker perspective, having variable hours and perhaps higher pay can compensate for less stable and secure income. However, recent court rulings have classified certain Uber drivers as employees, and a current class action lawsuit in California may ultimately force ride-sharing services into a more traditional employment model.

The entry of peer-to-peer businesses into markets such as hotels and taxis also has opened a heated debate over local regulation. One of the criticisms peer-to-peer platforms receive is that they gain a competitive advantage by avoiding local restrictions on entry or licensing requirements. For instance, many cities limit the number of hotel rooms, the use of residential property for short-term rental, the number of taxis and the way in which taxi companies and hotels can set prices. Traditional suppliers are also subject to licensing requirements, taxes and fees, as well as health and safety checks to ensure quality and trust. Peer-to-peer platforms, at least at the beginning, did not abide by those rules. More recently, local authorities have responded by setting standards for peer-to-peer platforms (e.g. New York and San Francisco for peer-to-peer apartment rental businesses) or by banning them altogether (e.g. the Italian ban on unlicensed car-sharing services).

The current debate hinges partly on competing views of what purpose local regulations serve. On one side, many regulations aim to protect consumers from bad experiences, such as a dangerous driver or an unsafe hotel room. One can question whether the feedback

mechanisms used by businesses such as Uber or Airbnb will be sufficient to protect consumers relative to the licensing requirements imposed by cities on taxi and hotel operators. On the other side, local regulatory restrictions can serve the interests of incumbent firms by limiting competition. From this perspective, peer-to-peer entry stands to benefit consumers through lower prices and higher service quality.

*“Will p2p businesses be able to succeed in ways that justify some of their high valuations?”*

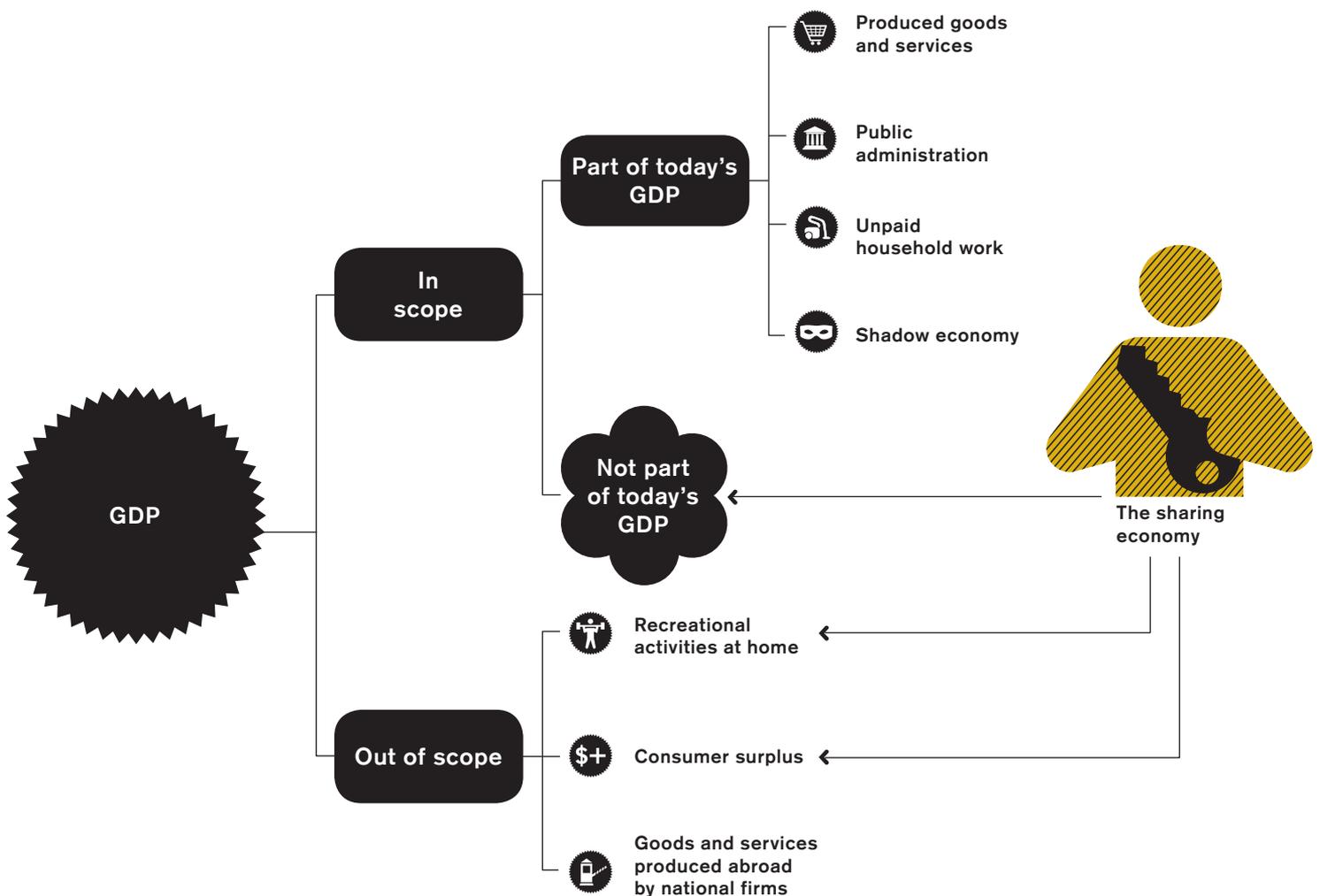
**Jonathan Levin**

A final question to conclude with is whether peer-to-peer businesses will be able to succeed in ways that justify some of their current high valuations. The effective design of search, matching and prices, as well as potential regulatory challenges are all likely to matter in answering this question, but broadly one might focus on two issues. The first is whether the peer-to-peer intermediation model will prove to be a winner, relative to more traditional integrated business models. The second issue is whether individual platforms will be able to establish dominant positions that enable them to capture significant profits. This last issue depends on whether there are likely to be strong network effects or efficiency gains with larger marketplaces. There are some reasons to think that marketplaces benefit from greater scale, because they may have more options for matching buyers and sellers and can collect more data. Certainly, Internet companies such as Google and Facebook have managed to take advantage of their size and scale to rapidly improve their products and services. But whether new peer-to-peer businesses can follow this lead is an open question. ●

Quantitative analysis

# What's the value added of the sharing economy?

How much does the sharing economy add to GDP? Is it significant, and can we even measure it? No hard numbers exist for the size of the sharing economy, and not all of it adds to GDP. This article disaggregates the contributions of sharing and "traditional" components of GDP. As activities shift from traditional sectors to sharing, they become harder to measure, obscuring the true economic activity of a country. We provide quantitative estimates of the size of the sharing economy.



## GDP components

GDP measurement now considers the value-added share of domestically produced goods and services, public administration, unpaid household work and parts of the shadow economy. Sharing activities that replace or add to existing economic activities should be included as sharing spreads. Source: Credit Suisse

**B**esides other indicators, the economic performance of an enterprise can be measured by its value added, i.e. its production value minus the value of intermediate inputs. Or more precisely, an enterprise's value added includes employee compensation, tax payments, interest payments, rental payments as well as owner profits (i.e. national income). It is a pure output measure, and excludes factors such as a consumer's satisfaction with a product. To measure the economic performance of a country, one has to sum up the value added of all domestic enterprises. To calculate a country's gross domestic product (GDP), one takes only domestically produced goods and services into account, subtracting subsidies and adding taxes.

The European System of Accounts (ESA) 2010 considers more than just businesses to measure GDP: other productive sectors, such as public administration, unpaid household production (housework, child care, etc.) and parts of the shadow economy, are incorporated as well. The value added of these sectors normally has to be estimated either because activities are not observed, or there is no production value.

Including non-business sectors and shadow markets when measuring GDP makes perfect sense. For example, although usually unobserved, black markets account for a substantial share of the economy and absorb a non-negligible share of the workforce and resources. Thus, by taking shadow markets and non-business sectors into account, GDP comes closer to reflecting true economic performance.

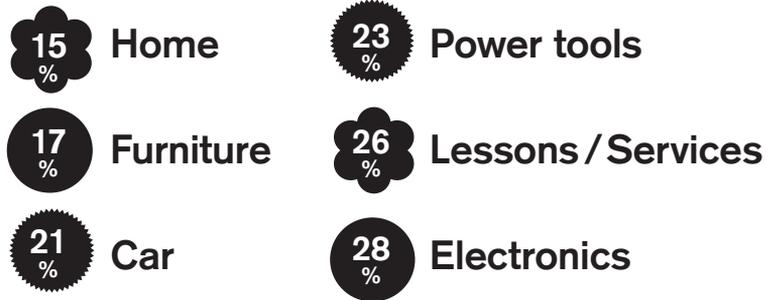
**Sharing activities more difficult to measure**

Purely socially motivated components of sharing, such as spending time with someone (e.g. via rentafriend.com) to increase quality of life, are necessarily excluded from GDP. However, sharing for money, or sharing activities that are similar to business-to-consumer activities are relevant to economic performance, though only some of them are already measured by today's GDP. For example, Internet platforms such as freelancer.com match workers and enterprises for project-based cooperation. In this case, these projects' value added is measured by GDP. The booking commission that Blablacar takes for car sharing is a part of employee compensation and owner profit. These components of car-sharing activities also find their way into GDP. However, the payment that a non-professional Airbnb >

**01\_Willingness to share a certain item**

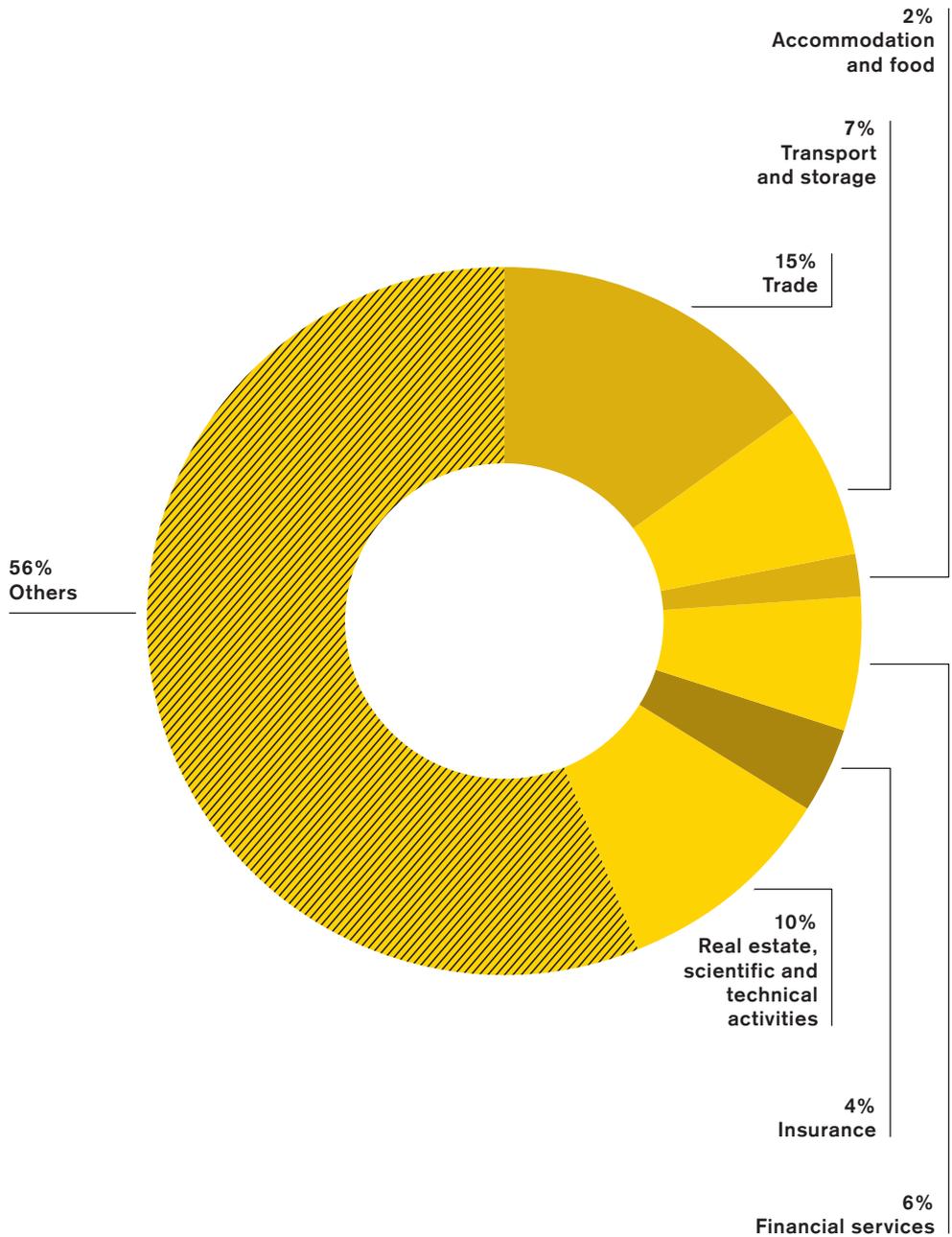
Sharing becomes more and more common, but there are differences among some goods or services and others. Shown is the global average of individuals willing to share the respective item or service.

Source: Nielsen Global Survey of Share Communities



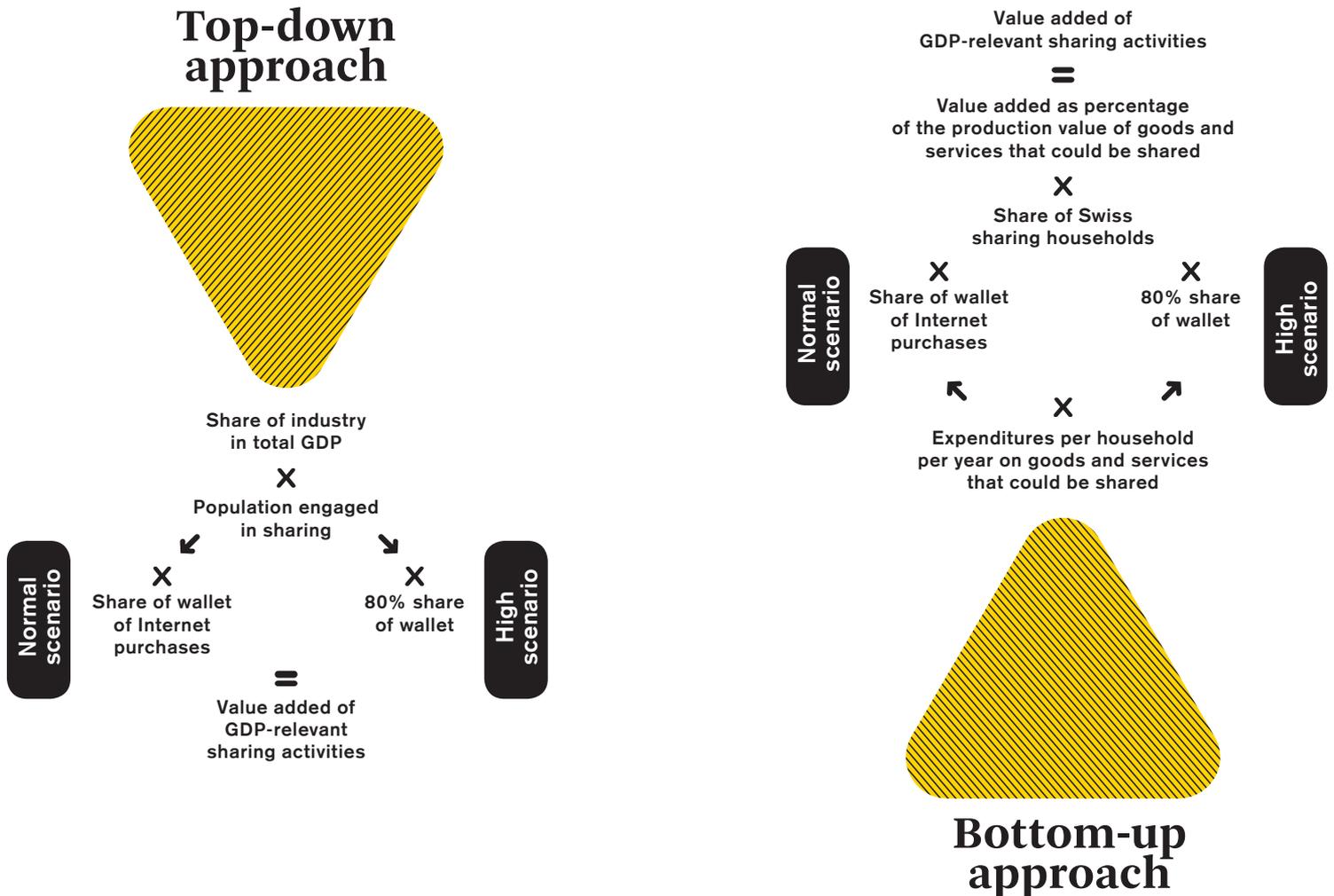
**02\_Sectors with relevant sharing activities as percentage of GDP**

About half of total GDP is composed of sectors which are significantly affected by sharing, with trade (both retail and wholesale), transportation and services being the main categories. Source: Credit Suisse, Eurostat



## Two approaches to estimating the value added of sharing activities

To date there exists no systematic way to measure the value added of GDP-relevant sharing activities. But these can be reasonably approximated. Our top-down method estimates the impact of sharing for each industry. Conversely, our bottom-up method estimates the impact of sharing as a percentage of household expenditures. In each case, the “normal” scenario assumes that spending on sharing activities equals the amount spent on online shopping. The “high” scenario assumes that 80% of expenditures go to sharing activities. *Source: Credit Suisse*



host receives from renting out her apartment often cannot be measured by GDP. The act of sharing a couch to provide strangers with free accommodation has no monetary value, and is definitely not contained in today’s measure of GDP.

But the more sharing activities replace or add to existing economic activities, the more urgent it gets to adjust current GDP measurement techniques. So far, there is no systematic measurement of the value added of GDP-relevant sharing activities. However, they can be reasonably approximated. We apply a bottom-up and top-down method to estimate the value added of these sharing activities.

### Sector approach

Splitting up GDP into individual industries allows us to calculate an estimate of sharing

activities in the overall economy. For basic industries, such as agriculture or energy, sharing is rather insignificant from a consumer perspective. Producers may share some inputs (such as farm machinery) and thus increase their productivity, but their outputs cannot be shared, i.e. a piece of bread cannot be eaten twice. The same goes for most public services – defense, for example. Education is one exception, but shared online learning is still dwarfed by public and private schools and universities.

Currently, the industries mainly affected by the sharing economy are trade (retail and wholesale), transportation, and accommodation and food services. Equally affected in the near future could be financial services and various scientific and technical activities. These industries make up about half of GDP in devel-

oped countries, with some variation (45% in Switzerland, 50% in the United States). In the following, we use Swiss industry weights to illustrate our estimates. Among the most affected industries, trade (15% of GDP) and transportation and storage (7.5% of GDP) are the heavyweights, with accommodation and food services a distant third at 1.6% of GDP. The less affected industries are roughly the same size, with scientific and technical activities along with real estate making up 9.7%, financial services 6.3% and insurance 4.5%.

The impact of sharing per industry relies on two factors: the percentage of people using sharing services, and how much of their total expenditures go to sharing in addition to traditional providers. The percentage of the population engaged in the sharing economy in Switzerland varies between 0% and 30%

depending on the sector, with transportation and accommodation at the top. Their share of wallet going to sharing can be estimated with the share of household expenditures via Internet, ranging from <1% for financial services to 14% for accommodation.

If we multiply these three factors (share of an industry in GDP, share of people engaged in sharing within an industry, and share of wallet of those people), we end up with the impact of sharing on GDP for each industry. The total GDP impact of the sharing economy is still fairly small at around 0.25% of GDP, as either the industries in which sharing is already a sizeable part are rather small (in the case of accommodation), or the industry concerned is large, but sharing is not yet very relevant in it (as is the case of finance and insurance). If we assume that individuals engaged in sharing spend 80% of their expenditures on sharing (high scenario), this would rise to around 1% of GDP.

#### Household approach

The bottom-up method focuses on the most affected sectors: finance, services, goods, accommodation and transport as well as music and video streaming. Moreover, it includes only the commercial part of sharing activities, i.e. household peer-to-peer commerce. For each sector, the method approximates the share of household expenditure that flows into sharing activities. Thereby, the bottom-up method takes only those expenditures on potential peer-to-peer activities into account. For example, a large part of household spending on financial service activities is in fact payments for housing, water and electricity. These expenditures are excluded from measurement. In the next step, expenditures for intermediate inputs – which are assumed to be the same as those of businesses – are subtracted from the expenditures on sharing. The sum across all households and sectors equals the value added of peer-to-peer commerce.

In the high scenario, peer-to-peer commerce as a percentage of household expenditures is approximately 80% of the share of sharing households. With this assumption, peer-to-peer commerce in Switzerland generates a value added of roughly CHF 6 billion per year, or 0.95% of GDP. In the more conservative scenario, it is assumed that sharing households spend as much a share on peer-to-peer commerce as they spend on online shopping. In this case, the Swiss value added of peer-to-peer commerce is

approximately CHF 0.5 billion per year, or 0.1% of GDP.

Obviously, the two measurement approaches lead to similar results. Moreover, even in the high scenario, the sharing economy adds only little to Swiss GDP, at least today. This result changes only slightly when we look at other developed countries, such as the United States or European countries, as sector weights differ somewhat.

#### Global differences in mentality

Globally, there are some differences in the acceptance of the sharing economy. A global Nielson poll showed the willingness to participate in share communities varies from 54% and 52%, respectively, in Europe and North America, to 80% in Asia-Pacific, with the global average at 68%. The higher willingness to participate in emerging markets is counterweighted by the fact that Internet penetration is far lower. But the impact on GDP could be higher in emerging markets as more people gain access to the Internet.

#### Sharing has yet to affect GDP significantly

The GDP impact of the sharing economy is of similar size as other activities that cannot be measured exactly, such as other parts of the shadow economy. While the overall impact is small, the strong growth of sharing activities suggests GDP growth calculations could be underestimating real growth as activities shift from the traditional sectors to the sharing economy. This shift of activities might be happening on a larger scale, but the net effect remains small. Also, GDP calculations do not capture all beneficial aspects of the sharing economy. But the wide usage of GDP as a measure ranges across many important economic indicators, from sovereign credit ratings to the tax base of a country. If, in the future, sharing activities become more widespread, this shift to less measurable activities will require a new way of looking at GDP. ●

## Terms and definitions

**Gross Domestic Product (GDP) = a country's value added of all domestically produced products and services minus subsidies plus taxes**

**Gross National Product (GNP) = value added of all products and services produced by citizens of a country minus subsidies plus taxes**

**Value added = production value minus the value of intermediate inputs**

**Consumer surplus = positive difference between what consumers are willing to pay for a product and the product's market price**

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The sharing economy as an investment theme

# Sharing as a disruptive force

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Rapid growth in the sharing economy heralds a significant shift in the historical model of consumption. The trend toward sharing started more than 15 years ago with intangible digital media, but has grown to include high-value tangible assets including automobiles and real estate. What opportunities arise for investors in a world where disownership is fast becoming the new normal?

**C**ars, accommodation, music and video were the first sectors to see emergence of peer networks. Aggregators have established themselves in these markets, fostering trust in online transactions, and are now household names. The value of a brand is linked to the social connections it facilitates and the experience it generates. Facing increasing competition, traditional incumbents will need to enter the fray, by becoming facilitators themselves or acquiring or partnering with new entrants. We review the consumer discretionary sectors that are hosts to the sharing economy.

#### **Automotive industry**

The impact of the sharing economy is perceived to be high for original equipment manufacturers (OEMs) in the global automobile industry, as cars are expensive, underutilized, depreciating assets. The rapid urbanization trend, changing consumer preferences for mobility and the supportive regulatory framework to incentivize car sharing and minimize pollution and traffic congestion are expected to drive rapid growth in car sharing. The emergence of new business models, such as peer-to-peer car sharing (e.g. Zipcar, car2go, Park24), ride shar-

ing (a complementary but different business model, e.g. Blablacar), and private car hire (e.g. Uber, Lyft), is also facilitating the shift in the marketplace from traditional rental counters to an on-demand technology-based interface.

Car-sharing penetration is currently less than 1% of the automobile market, and Avis Budget estimates a global market size of USD 10 billion compared with the taxi market (USD 40 billion), the car rental market (USD 50 billion) and OEM sales of USD 1.2 trillion, implying tremendous opportunities for growth in car-sharing. A survey by the University of Berkeley suggests that one car-sharing vehicle replaces 9–13 vehicles, as car-sharing members were likely to sell their current vehicle or postpone the purchase of a new one. We estimate that by 2020 this could reduce new vehicle sales growth by 70 basis points. The impact appears to be minimal within our investable time horizon, but is likely to be more severe in the longer term as the degree of automation and scale improves.

As for the new entrants, investors were able to participate in the IPO of Zipcar in 2011. Zipcar was once valued at USD 1.2 billion shortly after its initial public offering (IPO), and was subsequently acquired by Avis Budget in 2013. Uber is expected to be next. According to the “Wall Street Journal” of July 1, 2015, Uber was valued at USD 50 billion in a recent round of funding, and the company expects to have USD 2 billion in revenues this year. This places it on the very high side of Internet valuations.

#### **Lodging industry**

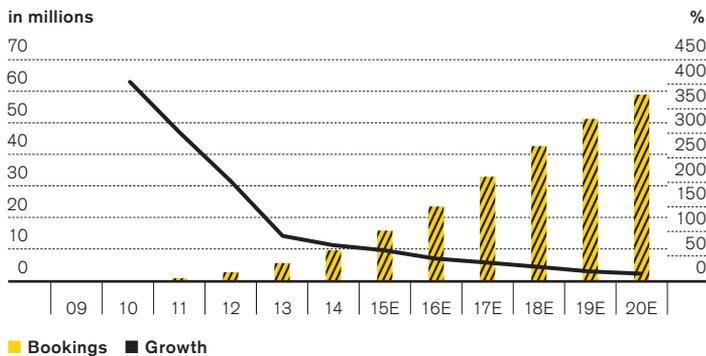
The sharing economy already has a foothold in the vacation rental market, which accounted for 9% of the traditional hotel market in 2014. This market is now becoming more organized and gaining more widespread use as trust in these services increases. Facilitators, such as HomeAway and Airbnb, already represent 50% of the vacation rentals market. Airbnb is already in 200 countries with 1.5 million listings, 10 million bookings, and now targeting China. Airbnb bookings are estimated to reach close to 60 million by 2020. Credit Suisse estimates that Airbnb today offers about 1% of global hotel rooms. This number could rise to about 5%, given our expectations for growth in this market.

So far, traditional hotels and traditional vacation rentals have continued to grow despite the emergence of companies such as HomeAway and Airbnb, and the demand-supply gap has remained favorable to the hotel industry. These platforms tend to attract longer-stay travelers that would not have otherwise traveled. Publicly listed hotel groups tend to cater to segments less exposed to these platforms, such as the short-stay business traveler. But as listings on these platforms grow, and Airbnb increasingly targets the business segment, it could absorb most of the demand-supply gap, and hotels could lose some pricing power in the longer term. According to a “Financial Times” article of June 29, 2015, many big hotel names have begun investing in home-sharing rivals, in recognition of a possible future threat.

While it is difficult to foresee long-term trends in the market, we definitely see strong potential for alternative accommodation networks as part of the new sharing economy. From an investor’s perspective, valuation is a key consideration. Looking at HomeAway, an already publicly traded company, we argue that its valuation should not be compared with that of hotels, but rather with that of other asset-light service provider peers, such as Netflix or Alibaba. While e-commerce Internet platforms are trading at a 12-month forward price-to-earnings ratio of close to 30 on average sales growth of 16% per annum >

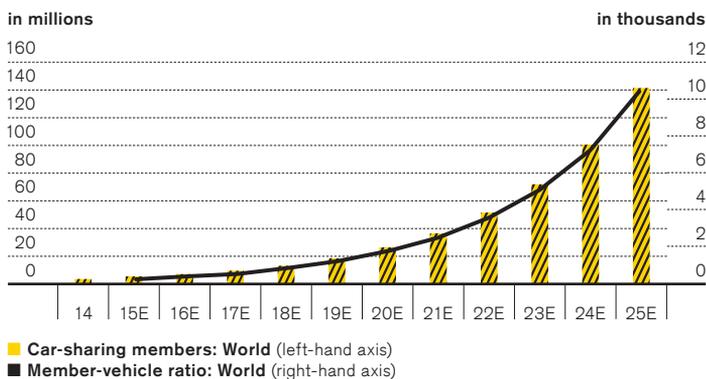
## 01\_Airbnb bookings growth

Airbnb bookings are estimated to reach close to 60 million by 2020 from 10 million today. Source: Company data, Credit Suisse estimates



## 02\_Car-sharing impact on OEM sales

We estimate that by 2020, there will be 26 million car-sharing members globally (vs. 4 million in 2014) and 415,000 shared vehicles (vs. 75,000 in 2014). This could reduce new vehicle sales growth by 0.7% in 2020. Source: University of Berkeley, IHS Global Insight and Credit Suisse estimates



over the next three years, a higher valuation for HomeAway of almost 40 does not seem justified given similar revenue trends. Airbnb is expected to go public. According to the “Wall Street Journal” of June 17, 2015, in a recent round of funding, it was valued at close to USD 25 billion with expected revenues of USD 850 million this year. At 30 times revenues, this is far above the valuations of global Internet companies.

### Media industry

The communication, media and entertainment industry has been impacted most by the sharing economy. The intangibility of assets in this industry makes them easier to share. Consumers are more engaged in sharing entertainment and media than they are in the automotive, hospitality and retail segments. In doing so, they look for better pricing, more choice, greater access and a more unique experience. Book, music and DVD sales have already been disrupted by online downloads. The recorded music industry collapsed from a USD 28 billion market 15 years ago to a USD 15 billion market last year despite a continued increase in music consumption. For this market, the transition toward digital is now over, and streaming platforms such as Spotify, Deezer and Beats Music (acquired by Apple), are now transforming the industry. There are currently 140 million streaming users globally, generating USD 1.5 billion in revenues. Spotify has more than 60 million active global users, of whom 15 million are paying customers.

Music companies working with streaming platforms can now better monetize their music and grow their business again. A subscriber to a streaming platform spends double the average spent per music user. We would highlight that streaming services should have positive implications for the sales, margins and valuation of the music labels such as Universal Music (45% of Vivendi revenues) and Sony Music (owned by Sony). According to “The Telegraph” of June 10, 2015, Spotify, a sharing platform, was valued at USD 8.5 billion following a more recent round of funding, making it the most highly valued venture capital-backed company in Europe. Spotify had USD 1.2 billion in revenues in 2014. A valuation of seven times revenues is in line with that of Netflix and appears reasonable, in our view.

### Retail industry

The sharing economy first involved underused high-value items such as homes and cars, or intangible assets that are easy to share, such as media products. But other product categories typically sold in the retail industry are also becoming part of the sharing economy.

Sharing very low-priced items with short-lived value may not make much sense, but sharing pre-owned, higher-value brands does. The luxury goods industry springs to mind. Here, we believe the sharing economy gives access to customers that would not otherwise exist. This can be seen as a type of brand marketing, and we do not see it as disruptive for incumbent luxury brands and companies. Other opportunities exist for sharing platforms in the area of furniture, sports and hobby, appliances and toys, where a rental market already exists. +swappow and Spinlister are platforms for sharing sports equipment. Rent the Runway provides designer dress and accessory rentals.

And once again, the incumbents can choose to participate. Kingfisher, a do-it-yourself incumbent, has launched Streetclub, a tool-sharing community for local neighborhoods, which now counts over



1,000 clubs across England. We nevertheless believe that the sharing economy will not have a disrupting impact on the retail industry in the foreseeable future, and are not aware of any upcoming IPOs.

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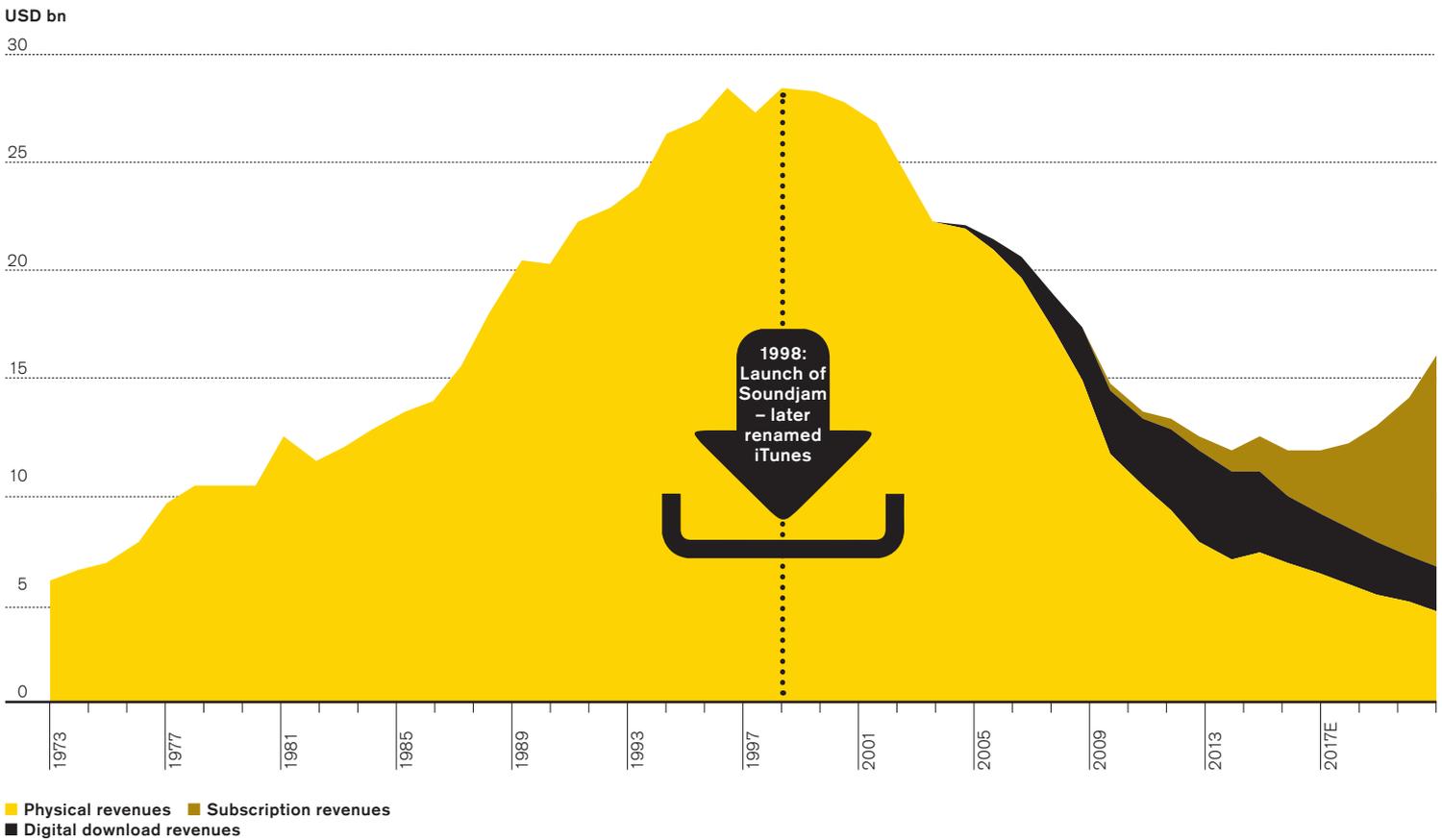
**Conclusion**

The sharing economy is a reality. Over time, we can expect one or two successful platforms per market to emerge. Following the IPOs of small players, such as HomeAway and Zipcar in 2011, investors are now waiting for some of the sharing-economy companies that have built massive valuations in private markets to be the next to go public. Many start-ups remain private, raising huge sums in private deals. The best way to invest in these platforms remains the venture capital market. Valuations already appear to be on the high side for the bigger players as compared to Internet companies. But less-hyped smaller IPOs could come at more reasonable valuations.

For the next five years, we expect only limited impact on market incumbents. Longer term, however, the sharing economy is likely to start having an impact, and established market players will need to find new ways to create value for customers. We conclude that the impact of the sharing economy will be highest for global automakers, while it is now having a positive effect on the recorded music industry. ●

**03\_Music industry**

The recorded music industry collapsed from a USD 28 billion market 15 years ago to a USD 15 billion market last year. While the physical market continues to contract at a slow pace and the download market is also contracting, growth in the streaming market should lead to growth in the music market again. Source: Credit Suisse estimates



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# Duo find they're on the road to success

1

**BLABLACAR**

Founded: *In 2006*

Members: *Over 20 million*

Operating: *In 19 countries*

2

**SHAROO**

Founded: *In 2013*

Car-sharing platform: *Swiss-based*

Targeting: *10,000 members by 2018*

In the sharing economy, or as some have dubbed it “the collaborative economy,” it’s all about access over acquisition. Today, high-value assets such as real estate or vehicles are investments that many find either unattainable or for a variety of reasons unattractive. Enter the philosophy of sharing. Nicolas Brusson (Blablacar) and Hans-Jörg Dohrmann (Sharoo) are driving forces in the move toward both ride-sharing as well as car-sharing. With their respective peer-to-peer platforms, Brusson and Dohrmann are paving the road ahead for the evolution of sharing.

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Drivers of change

# Easy rider

The ride-sharing platform Blablacar is rare among European start-ups, as it aims to be a European company, but also a global player. Boasting 20 million members, its idea is as simple as sharing the cost of a ride. But their vision doesn't stop there – they're looking to transform city-to-city transport as we know it.

INTERVIEW BY JULIE SAUSSIER, Credit Suisse



Photo: Giulia Besana

1

**“What gets investors really excited about the model is the disruptive potential of a massive city-to-city market.”**

Nicolas Brusson

Julie Saussier You make the point that Blablacar is about ride-sharing, not car-sharing. What's the difference?

**Nicolas Brusson** With ride-sharing, you are in your car, you're driving the car and you're allowing people to sit in your car when you do it. That's what we do. With peer-to-peer car-sharing, you use someone else's car as your car for a few days. Both are going to have an impact on car ownership. But it's two very different markets.

How does Blablacar work?

**Nicolas Brusson** The idea is that a driver who has planned a long-distance trip, whether that's Paris to Brussels or London to Manchester, offers a seat (or seats) to passengers going the same way. You're not driving to carry people. You're driving because you have to anyway. The Blablacar platform – the website and, increasingly, the mobile app – functions as a marketplace where drivers and passengers can find and vet each other. And it's low-cost because the whole concept behind Blablacar is that people are sharing the cost of driving.

How low is low?

**Nicolas Brusson** Paris to Brussels would be roughly 20 euros, London to Manchester would be 15 pounds.

It's two or three times cheaper if not four or five times cheaper than the typical plane ticket or bus ticket or any other option. We typically take 10% commission on every transaction. That's the business model.

You and your cofounders started the company in 2006. Today Blablacar claims over 20 million members in 19 countries. Is your business model profitable?

**Nicolas Brusson** No. We're expanding in several countries, and we deliberately do not monetize new marketplaces.

Why?

**Nicolas Brusson** We want people to engage very easily with the activity and start offering and booking rides without having to take transactions online. Over time, of course, it makes sense to do that, and it helps to create a lot more trust. But in any event, we tend to introduce the payment and booking system later on in the growth story of each country – which means that today, only a few countries are actually producing revenue. That's why we fundraise. Last year we raised 100 million dollars essentially to finance growth >

## Nicolas Brusson

Cofounder and COO of Blablacar, Nicolas Brusson leads the company's international growth and operations. His career began with Silicon Valley start-ups in the 2000 boom. He then held executive and investor roles, and later worked as a venture capitalist before leading Blablacar's global expansion. He holds an MBA from INSEAD, an MSc in optics from the École supérieure d'optique and an MSc in applied physics from Paris XI University.

and 200 million dollars in September to meet global demand for ride-sharing.

And when it comes to valuing the company?

**Nicolas Brusson** Well, typically investors are doing that. That's their job. It's not mine. What value do you put on it yourself?

**Nicolas Brusson** For us, the company gets valued every time we raise money. But typically the way you would think about this type of company is what it represents in terms of disruption to markets. In other words, if Blablacar really scales in every market in Europe, in every market in the world, what's the size of that city-to-city transport market? How much of that market can be captured and by when? Then you factor in risk and come up with a number.

Do you want to hazard a guess about the market size?

**Nicolas Brusson** It's interesting. Initially people thought of what we do – city-to-city ride-sharing, that is, enabling people to book seats in cars traveling 50 to 100 miles, or several hundred miles – as hitchhiking. And they said we wouldn't succeed because nobody hitchhikes. But actually, 99% of the people using Blablacar never hitchhiked in their life and never will. And the fact that we created this trusted community where people can review each other, and it's financially attractive to share your car or to book a seat in someone else's car, has expanded the market well beyond what you would traditionally call hitchhiking.

Which means that the real market ...

**Nicolas Brusson** ... is the entire city-to-city transport market. And it's humongous. We're talking about all the trains, buses and cars going between cities in Europe or on a global scale. What gets investors really excited about the model is the disruptive potential of a massive city-to-city market.

If you include car-sharing in the mix, how might that impact the car market?

**Nicolas Brusson** Our market would be disrupting transport. Car-sharing would be disrupting car rentals, which is a bit different. But I think over the long term, the model of car ownership is going to change. Because today it's about access. If I can have access to a seat in a car to go between cities, or if I can get an Uber or a Car2Go, at some point maybe I don't need a car.

It isn't so surprising that ride-sharing would have appeal in a difficult economic environment. But what about in a booming economy?

**Nicolas Brusson** I don't know if the last few years have been worse economically than the last ten, frankly, in Europe at least. We see massive appetite for the activity in emerging markets where the economy is booming. Once you offer the potential to travel very, very cheaply between cities around the world – to do Paris to Brussels for 20 euros, or to do Paris to Lyon for 25, to do Munich to Berlin for 20 – there is always a demand for that. Whether the economy is booming or not booming, it just makes sense.

To what extent are regulatory issues a concern for your platform?

**Nicolas Brusson** For us at Blablacar, they're not. The cost of driving is typically defined by the state. Because we operate under a cost-sharing paradigm, we cap the maximum price and number of seats drivers can offer. As we see it, as long as you adhere to a cost-sharing paradigm, as opposed to making a profit, you have no tax issues. But more important, from our vantage, you don't even need a special license. You're just a normal citizen sharing a car with someone else. And your normal insurance covers everybody in the car.

Beyond car-sharing, which of the consumer product categories do you think will be most affected by the sharing economy?

**Nicolas Brusson** In any typical household, what's going to cost you money is typically healthcare and education, which is hard to share, and then your house and your car. So it's pretty intuitive that initially the first things you would want to share and save money on are your house or your car. As we create bigger and bigger communities, and people get used to things like Airbnb and Blablacar, I think you'll see more and more verticals, where people start to share other things. ●

2

“When we started Sharoo as a peer-to-peer car-sharing platform, everybody told us that it would not work in Switzerland.”

Hans-Jörg Dohrmann



# Want to survive? Collaborate!

The transportation and hotel sectors have been the most affected by the sharing economy. But retailing can't be complacent. The sheer growth of sharing platforms and changing customer preferences suggest a shake-up is in store. How classic retailers will fare depends on their ability to learn from the challengers, and to adapt.

INTERVIEW BY PATRICIA FEUBLI, Research Analyst, Credit Suisse

Patricia Feubli: Peer-to-peer activities are crowding into markets that have traditionally been the bastion of professional providers. Could the rise of the sharing economy lead to a decline in global retailing?

**Hans-Jörg Dohrmann** I prefer the term “collaborative” to “sharing,” since we are really talking about business. Of course, the collaborative economy and all companies that rely on the power of the masses pose a certain threat to established business models. But they also represent an opportunity to get into new markets and to grow further. It depends on how an established company relates to these new developments.

Which retail segments will be affected the most?

**Hans-Jörg Dohrmann** The most important segments are goods as a whole, food, logistics, transportation and mobility because they are directly connected to people's way of life, and retailers in these segments have always been seen by people more or less as partners or companions. Are there any specific goods that might be more affected than other goods?

**Hans-Jörg Dohrmann** Personally, I'd say the general area of custom-made goods. A platform like Etsy is really an issue for retailers. People, especially young custom-

ers, want individual stuff. They don't want to wear or to have exactly what all their neighbors and friends at school or university have. Young people have reoriented their shopping behavior toward platforms like Etsy and Younique.

How much of its size will the global retail market lose to the sharing economy if it doesn't collaborate?

**Hans-Jörg Dohrmann** That is a very complicated question. But let me try to answer it. Standard goods and services will remain. They will not change completely. It's not like everybody will be having their stuff delivered by Instacart in the next ten >

# “Make or buy is always a question big companies have to ask themselves.”

Hans-Jörg Dohrmann

## Hans-Jörg Dohrmann

As CEO of m-way, which specializes in electric bicycle retail, Hans-Jörg Dohrmann heads up the subsidiary of Migros Group – the largest retailer in Switzerland. Previously, he was also responsible for incubating Sharoo, Migros Group's car-sharing platform. He began his career as a lawyer and later transitioned to business development at E.ON AG. He joined Migros in 2010.

or 20 years. But there are certain people, with a certain attitude and a certain way of life, who do want to use such services. Two years ago, I would have told you that, midterm, say five to ten years, around 10% to 15% of revenue is at risk of shifting to alternative business models.

And today?

**Hans-Jörg Dohrmann** Well, what has shaken up my world view is the tremendous success of Airbnb. I see its impact on my friends, my neighbors, even my parents. And I find myself wondering who stays at hotels anymore? Airbnb is changing everything because it's so huge. So I would say that even more than 10% to 15% of the revenue of classic retailers is at stake if they do not collaborate or offer products and services comparable to those of sharing platforms.

But this implies that retailing has to fundamentally change. How will it do that?

**Hans-Jörg Dohrmann** Simple. You have to learn from these platforms. You have to integrate them. Sometimes you have to buy them. Make or buy is always a question big companies have to ask themselves. But in the beginning, it's always “learn from them.” Classic retailers will have to open up their business models toward collaborative business models and structures – and accept that, to a certain extent, these new businesses will cannibalize their own core businesses. Because if they don't do it, somebody else will do it, and then they will lose the rest.

How does retail sharing, or let's say tool sharing, differ from car sharing or apartment sharing?

**Hans-Jörg Dohrmann** It's always about the value and price of the asset. It doesn't really make sense to share assets or goods that are priced at 30 or 50 or even 200 bucks, like a drill, because it takes a lot of effort to get it. So tool sharing is more about getting in contact with your neighbor. Sharing does make more sense, however, the greater the value of an asset, starting with bikes and motorcycles, and progressing to cars and apartments. Theoretically, you could share boats, machines and even planes. But then there is pressure in the other direction because assets that are too complex are not really sharable. You have to hold a license to use them and so forth.

How does sharing in Switzerland differ from sharing in other countries, such as the USA or Germany?

**Hans-Jörg Dohrmann** In the beginning, when we started Sharoo as a peer-to-peer car-sharing platform, everybody told us that it would not work in Switzerland. Swiss people are rich, they said, and will not share their goods because they mistrust others. Well, we found out that's not true. We started the platform 12 months ago, and there are already 800 cars on it, rising very fast. Now we are aiming for 10,000 cars within the next two-and-a-half years, which for the Swiss market is a huge number.

People are lining up to share their cars!

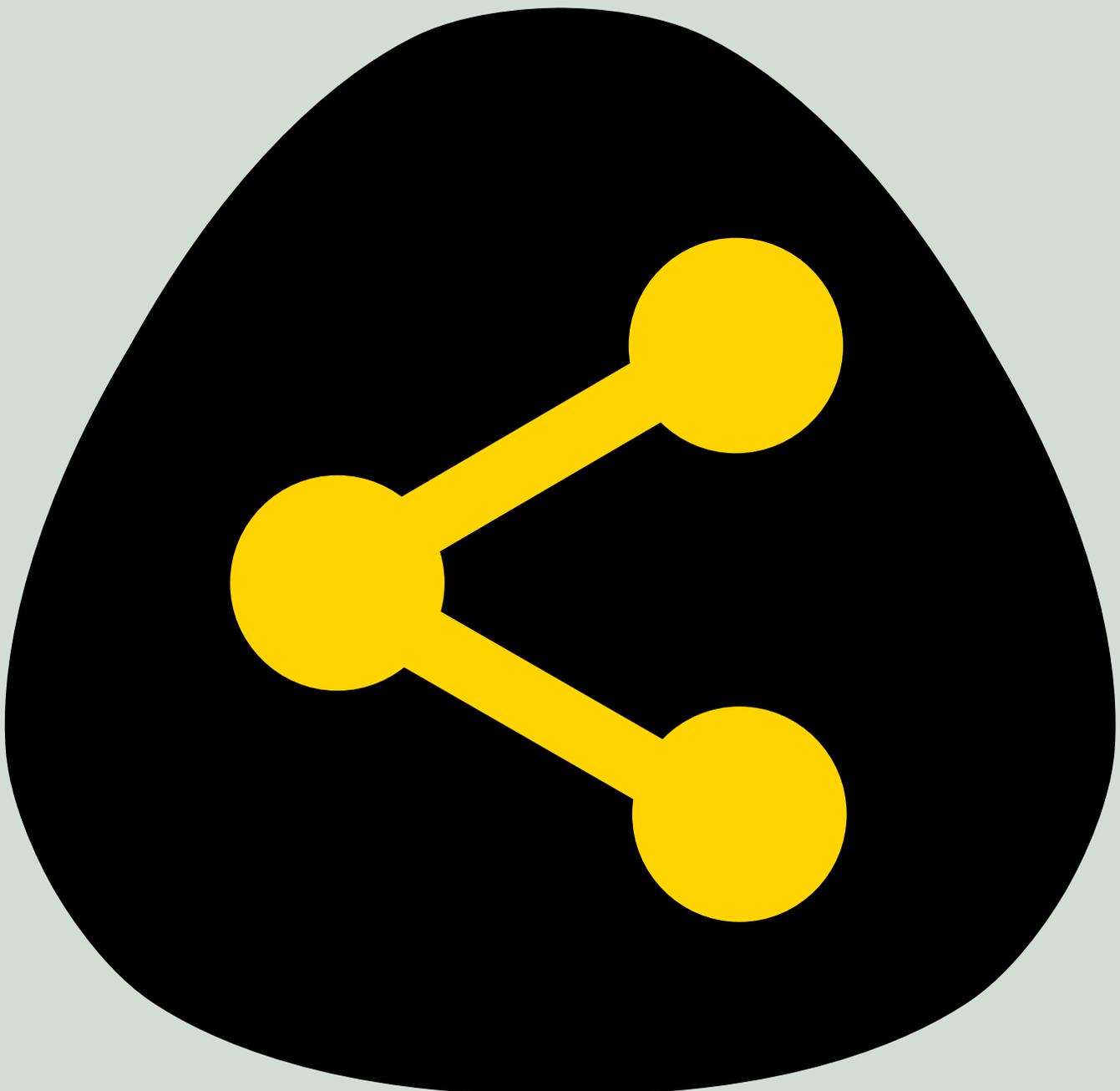
**Hans-Jörg Dohrmann** Yes, people want their cars to be productive. But you have to deliver a perfect solution. Swiss people don't want to make compromises. For example, we weren't able to sell Swiss customers on getting the key from somebody else. Consequently, Sharoo is the only platform besides Getaround, in California, that shares cars via hardware, so you don't have to hand over keys. You do it completely by smartphone.

How big a role does innovation play in persuading people to try something new?

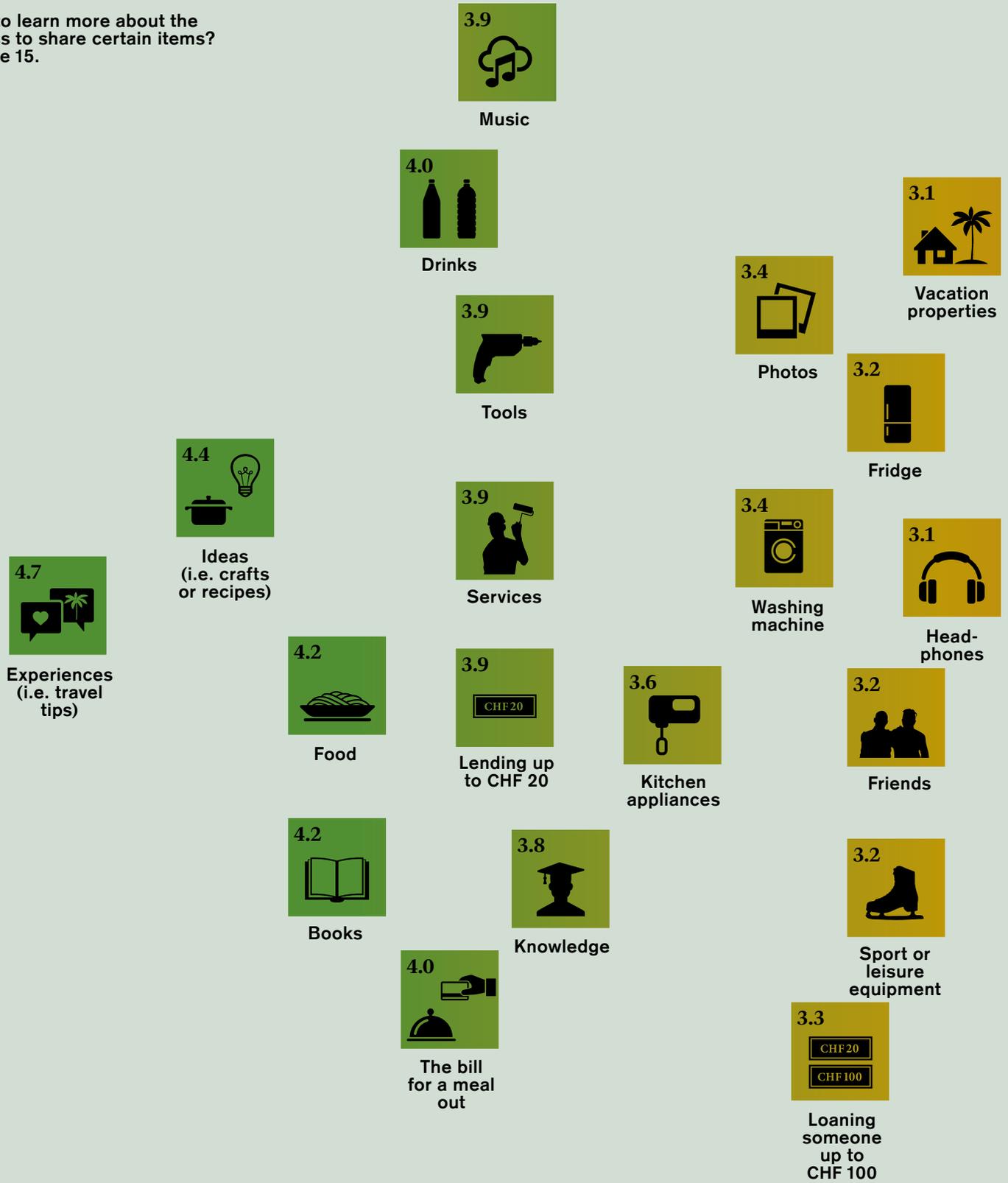
**Hans-Jörg Dohrmann** Actually, the more innovative the approach, the more you have to explain it to your customers. A lot of start-ups think that the technical solution is the hardest part. And that once they have it, the innovation will spread more or less by word of mouth. That's only half of the calculation. In the end, it doesn't matter how innovative you are. You have to tell people what you are doing. ●

# THE SHARING MARKETPLACE: BRIDGING INTERESTS, COUNTRIES AND AGES

*The sharing economy is growing rapidly and opening up new possibilities. People no longer need to own a vacation home, car or power drill. They can instead rent the item they need, when they need it, through the Internet. People are also turning to the sharing economy to find new sources of income, working as independent contractors offering city tours or pet-sitting services. No one knows yet where the sharing economy is going. At present it affects only a fraction of the economy, though it could be big. A separate, and important, question is whether it will benefit or hurt companies, workers and consumers. In the meanwhile, it has captured the imagination of businesses and the public alike.*



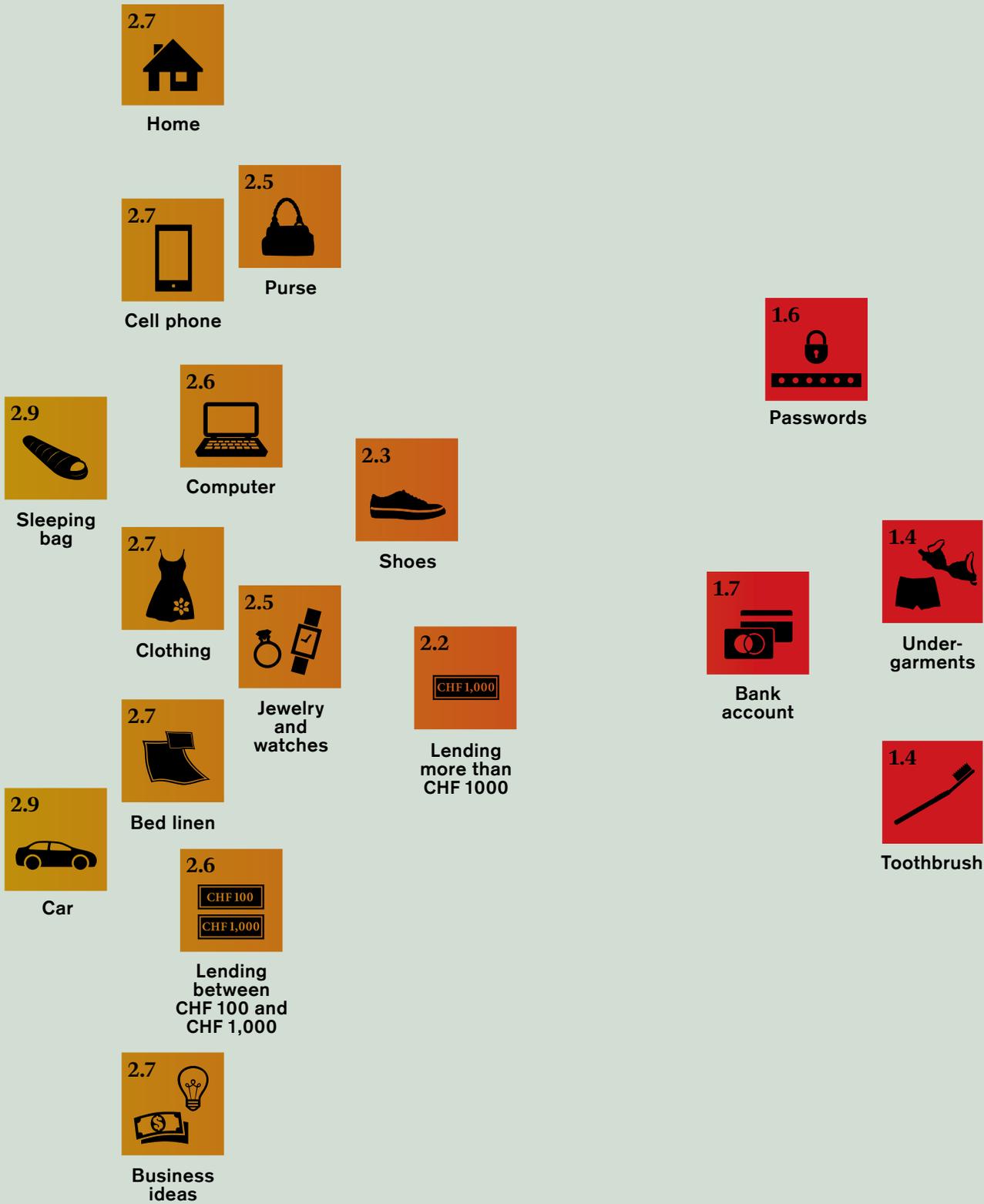
→ Want to learn more about the willingness to share certain items? Go to page 15.



# 5 What we like to share ...

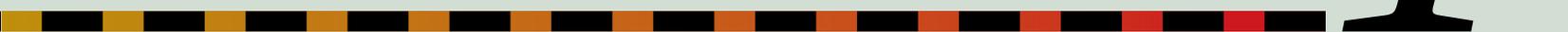
GLADLY

OKAY



*... and what we do not* **1**  
 VERY RELUCTANTLY

IF NECESSARY



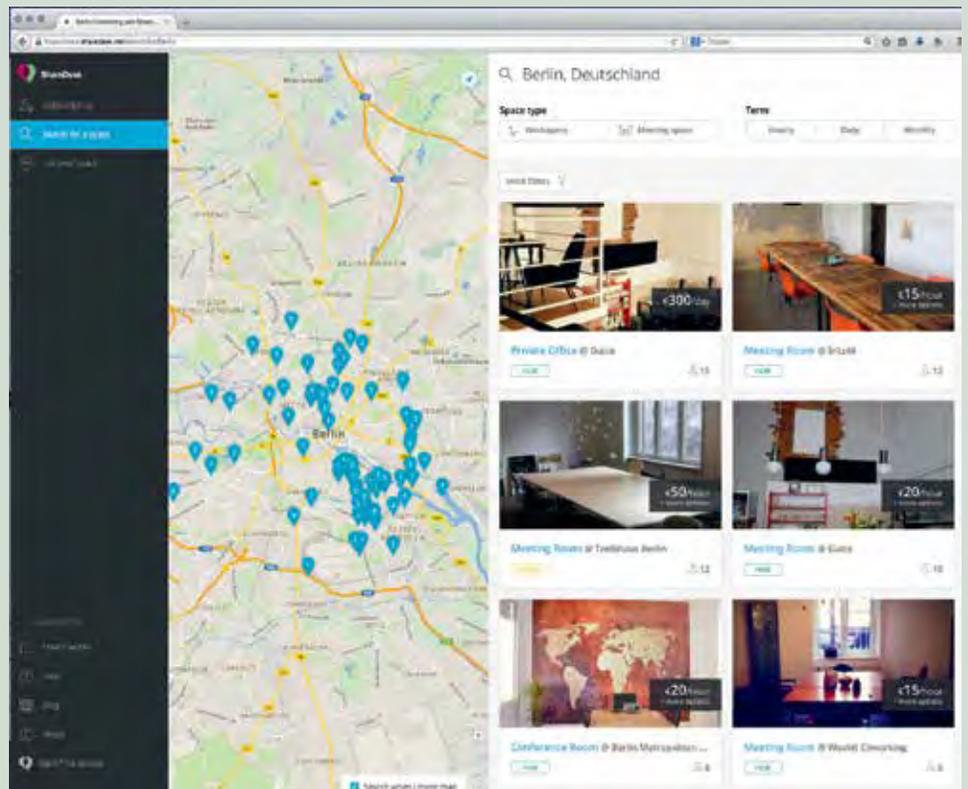


# Lonely desk seeks worker

→ [sharedesk.net](https://www.sharedesk.net)

For mobile workers around the world, ShareDesk is the Airbnb for offices, matching underutilized office space with those needing a place to work or hold a meeting. People can rent space by the hour, day or month, choosing from venues in 440 cities in 70 countries.

POPULAR IN NORTH AMERICA AND EUROPE



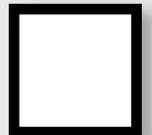
# Discover secret gardens

→ [vayable.com](https://www.vayable.com)

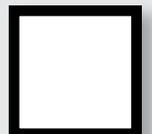
Looking for that unique but affordable travel experience only locals can deliver? Savvy travelers can book a bespoke tour in the city of their choice with a Vayable tour guide. The website's "insiders," such as historians, writers, architects, foodies, chefs or farmers, devise unique experiences for tourists and locals alike. Excursions include photography outings in Paris, food tours in New York, biking tours in Italy and a houseboat tour in San Francisco.



YES



NO

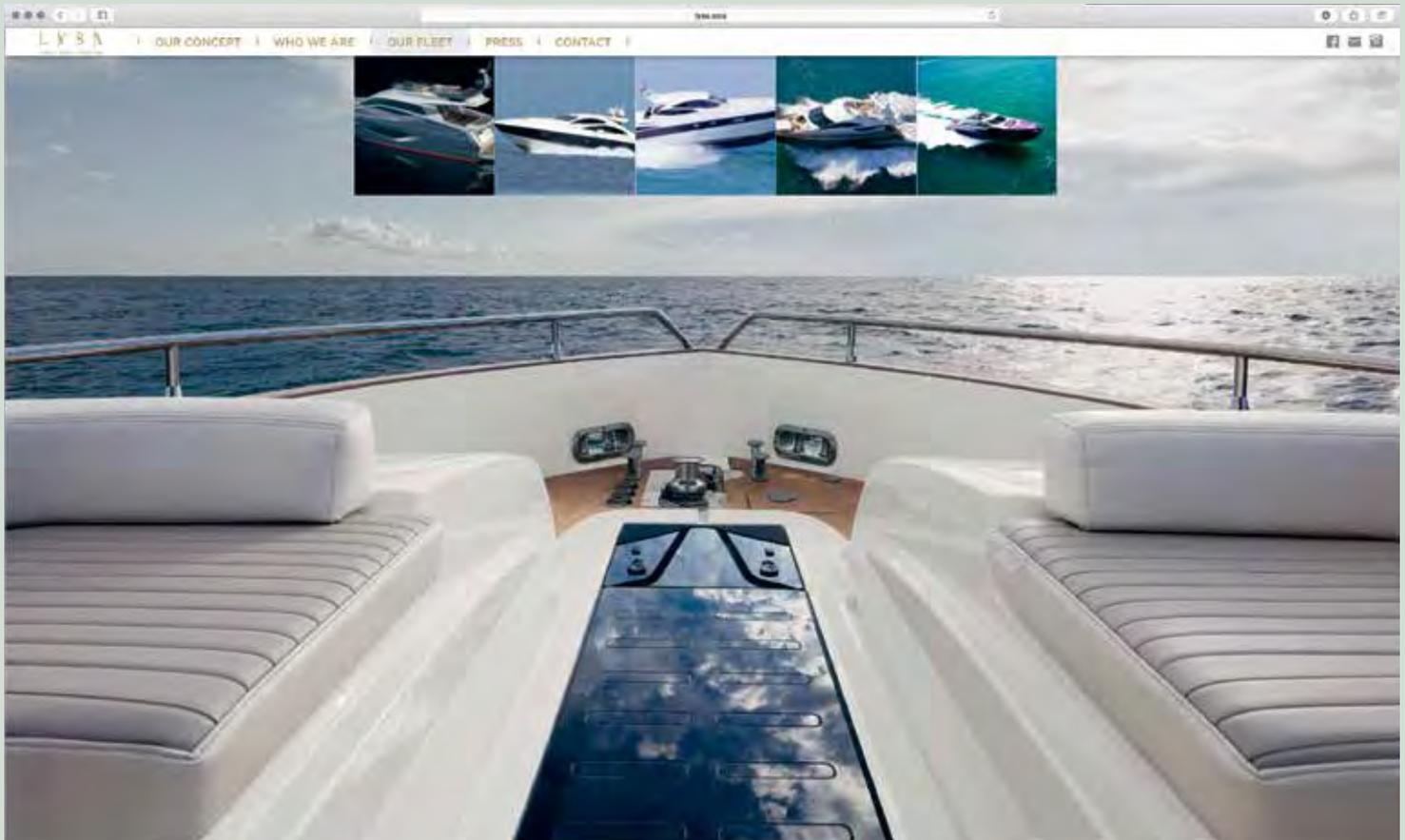


?



**DID YOU KNOW... WHY SHARING IS GOOD?**

- More convenient
- Affordable
- Environmentally friendly
- Strengthens communities
- Reduces clutter



## Sailing into the sunset

→ *lysa.asia*

When it comes to luxury yachts, savoring la dolce vita unfortunately entails the bitter aftertaste that comes from the considerable operational and maintenance costs involved. But Luxury Yacht Share Asia, based in Hong Kong, has a solution that offers its clients the best of both worlds: fractional ownership. The flexible shared ownership arrangement involves up to four individuals sharing a vessel, with usage rights commensurate with the share of ownership. Such arrangements have long existed in Europe and the US, but are relatively new to Asia. LYSA handles the responsibility of arranging crew organization, maintenance and bookings. When the vessel would otherwise be sitting idle, LYSA arranges short-term charters, which partly offset the annual costs incurred by the yacht's owners. **POPULAR IN ASIA**



## New ways to see the world

Travelers today are looking for affordable accommodation as well as the chance to get to know more about the local culture beyond the typical bucket list of famous sites. It's never been easier to travel like a local.

### → [citymapper.com](http://citymapper.com)

The transportation app is available for nearly 30 cities around the globe, including New York, Barcelona and Hong Kong. Users can look up directions and compare travel times for different modes of transport. It even gives advice on where to board a train so that users will find themselves closest to the exit.

### → [couchsurfing.com](http://couchsurfing.com)

This community works on the premise that a user has potential friends around the world. These friends are hosts who are willing to let a stranger sleep over at their home rather than staying at a hotel. People can find hosts and share their experiences via the website, which is made up of a community of 10 million people in 200,000 cities.

### → [warmshowers.org](http://warmshowers.org)

Cyclists on a long tour can now find affordable places to stay via this website that connects the biking crowd with hosts. The website has more than 68,000 members worldwide, the majority of whom come from Europe and North America.

### → [homestay.com](http://homestay.com)

Travelers eager to learn a bit more about the local culture can choose affordable accommodation at one of the website's many hosts around the globe. Hosts must be at home during a visitor's stay, and agree to spend time with them, according to the rules of the online booking platform.

### → [tripoto.com](http://tripoto.com)

Reported to be the world's fastest-growing travel start-up, this Delhi-based platform is aimed at the traveler with a thirst for adventure. The site features interactive crowd-sourced itineraries for travelers from around the world. The focus lies on paths less-traveled, including maps, photos and travel stories from those who have actually been there.



## Traveling in style

→ [onefinestay.com](http://onefinestay.com)

This upscale version of Airbnb offers posh accommodation in homes in London, New York, Paris and Los Angeles. The company checks out each accommodation in person. Guests can choose from four types of properties: family, work, prestige and explorer. Local teams prepare the homes and greet visitors.



#### DID YOU KNOW ...

New entrants are having a visible impact on the travel industry. A survey conducted on behalf of Allianz Global Assistance USA found that Americans were planning to spend a total of USD 85.5 billion on summer vacations in 2015, a 13.5% decline from the previous year. The decline comes as the millennial generation increasingly turns to sharing economy companies to rent a holiday home or book a taxi ride for their vacations. Some 28% of survey respondents under the age of 35 said they would use a sharing economy service for travel during summer vacation, compared with 17% of Americans overall.



## Transforming crafts into global business

→ [etsy.com](http://etsy.com)

Etsy has taken the idea of a local craft fair and made it global, enabling hobbyists and entrepreneurs to sell their handcrafted jewelry, clothing and home accessories to shoppers across the world. As Etsy states on its website: "Turn your passion into a business." The selection is eclectic: custom cat portraits; baby headbands; initial necklaces; and colorful calendars. Sellers must pay a small fee to list each item and a 3.5% fee for each sale. Etsy's story began in 2005 in New York, when three friends created a website where artists and craft aficionados could peddle their handmade goods. A decade later, Etsy has grown to a marketplace of 1.5 million sellers and 21.7 million active buyers. In 2014, Etsy's annual gross merchandise sales climbed to USD 1.93 billion. The US-based company went public this year with the goal of further expanding its business.



→ *managedbyq.com*

Managed by Q's cleaning service for businesses runs through an iPad – dubbed a Q dashboard – that is installed in the office. Customers can use the iPad to view the cleaning schedule for the week, outline their cleaner's tasks, provide feedback or leave important notes, and even request the help of a handyman. Clients can also pay for Q to track and maintain their office supplies. The company, which is currently focused on New York, raised USD 15 million in venture funding to expand to other parts of the USA.

**DID YOU KNOW ... THE NAME GAME**

→ The sharing economy goes by many names, including the matching economy, collaborative consumption, on-demand economy, peer-to-peer economy, 1099 economy, gig economy, access economy and locust economy.

*gig economy*



→ *hikk.mixxt.de*

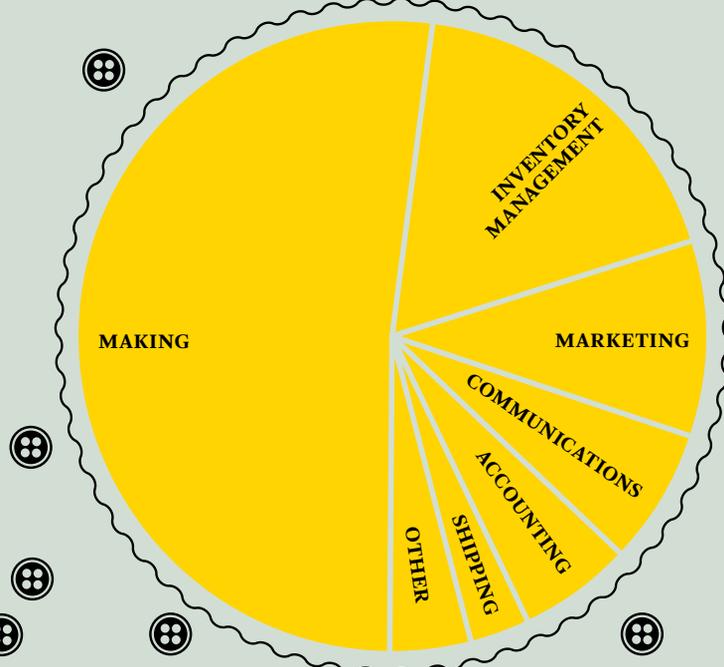
Holz im KreativKreislauf, or hikk for short, is a small online community for recycling wood in Germany. The website provides instructions for building projects, such as a wooden beverage crate, and offers a wood exchange. Hikk this year launched a new project supported by Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, which aims to reduce waste by recycling wood. It is slated to run until March 2017, and will feature various environment-related events.



JUJUJUST — Judit Just is the owner of Etsy store jujust. The Barcelona native, who recently moved to the USA, opened her shop in 2009. Inspired by her education in fashion design, sculpture and textile arts, she sells cheerful, colorful wall hangings, jewelry and purses.

*How an Etsy seller spends her time*

Etsy surveyed 4,000 US sellers in 2014, providing a detailed snapshot on just who exactly is the typical Etsy seller. Three-quarters of sellers on Etsy view their shop as a business, and almost all work from home. Most operate their shop on their own, meaning they must oversee all tasks in running their business. They tend to spend half their time on making their goods, and the other half on administrative and marketing tasks. Source: [extfiles.etsy.com](http://extfiles.etsy.com)





# Expand your culinary horizons



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The foodies of the world have embraced the sharing economy as a way to reduce waste, sample new cuisine and improve their cooking skills.

## → [restaurantday.org](http://restaurantday.org)

Restaurant Day, which helps people set up a pop-up restaurant for a day, made its debut in Finland in 2011 and has since spread across the globe to 72 countries. The website lets people sign up their “restaurant” and enter related details (menu, hours, etc.) as part of a food carnival that takes place four times annually.

## → [talktochef.com](http://talktochef.com)

Foodies hoping to successfully prepare osso buco or sushi for their dinner guests can tap into the knowledge of worldwide experts via this website. Professional chefs answer home cooks’ questions via a video chat. Remember to leave a tip!

## → [plateculture.com](http://plateculture.com)

This community aims to showcase real global cuisine – be it Mexican, Korean or Persian – by connecting hosts who like to cook in two dozen countries with guests who seek an authentic eating experience at someone’s home.

## → [munchery.com](http://munchery.com)

For those looking for an alternative to pizza delivery, this US website offers daily menus prepared by professional chefs and delivered by drivers to the home. The website donates a portion of the proceeds from each meal to a San Francisco food bank.

## → [just-eat.co.uk](http://just-eat.co.uk)

The UK website provides customers with a wide range of choice (there are 24,000 listed restaurants) for takeaway meals. Customers can order online rather than call, and they benefit from exclusive offers via the website.

## → [zueri-kocht.ch](http://zueri-kocht.ch)

On the first Friday and Saturday of every month, this website brings together diners in Zurich with people who want to cook them a meal at their home. Hosts list the menu, price and date on the website, and participants sign up to attend.

## → [mutterfly.in](http://mutterfly.in)

This is a unique food-sharing app out of India. It allows foodies to share their delicious cooking with their neighbors, or to request one of their tasty creations.



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- 1 Ideal for sharing! Home delivery never tasted so good. US customers can go online, get a great meal and support a good cause all at the same time via [munchery.com](http://munchery.com).
- 2 If you’re looking for something different, why not pop into a pop-up! You can check out what’s coming in your community at [restaurantday.org](http://restaurantday.org).
- 3 The focal point is the food. Hosts and guests come together to enjoy authentic global cuisine thanks to [plateculture.com](http://plateculture.com).
- 4 Check your local listings: In Zurich, on the first weekend of the month hosts turn their homes into restaurants and welcome guests. See [zueri-kocht.ch](http://zueri-kocht.ch).



# See Shanghai in a Porsche

→ [atzuche.com](http://atzuche.com)

The peer-to-peer car-sharing service began in Shanghai in May 2014, and has since expanded to several other cities in China including Beijing. China is home to some 300 million motorists and growing, making it a promising market for any car-related services or businesses. The cars listed on the Atzuche website are up to 50% cheaper than traditional car rental companies. To date, Atzuche has nearly one million members, who can pick from more than 30,000 different cars, including BMWs and Fiats. **POPULAR IN ASIA**

The screenshot displays the Atzuche website interface. At the top, there is a navigation bar with the Atzuche logo, the text '太平洋保险 战略合作伙伴' (Pacific Insurance Strategic Cooperation Partner), and a search bar. Below the navigation bar is a large banner image of a group of people enjoying a beach day, with the text 'SHARING FOR BETTER 万款车型, 超低租金 欢乐共享马上出发' (Sharing for better, thousands of car models, ultra-low rental rates, happy sharing, start immediately). Below the banner is a search bar with fields for '想在哪儿租车' (Where do you want to rent a car?), '取车时间' (Pick-up time), '还车时间' (Return time), and a '搜索' (Search) button. Below the search bar is a grid of six car listings, each with a photo of the car, its location, and its daily rental price. The '精选' (Selected) section features six promotional banners with various car models and services, such as '2小时内送车上门' (Deliver car to your door within 2 hours), '不再遥远, 触手可及' (No longer far, within reach), '一起去野吧' (Go wild together), '速度与激情' (Speed and passion), and '驾驭浪漫' (Drive romance).

→ [spinlister.com](http://spinlister.com)

→ [onefinestay.com](http://onefinestay.com)

→ [themrcollection.com](http://themrcollection.com)

Bike

**\$30**  
rent/day

Room

**\$203**  
rent/night

Clothing

**\$45**  
rent/month



**\$154**  
handmade

Backpack

→ [etsy.com](http://etsy.com)

**\$0**  
swap

Food

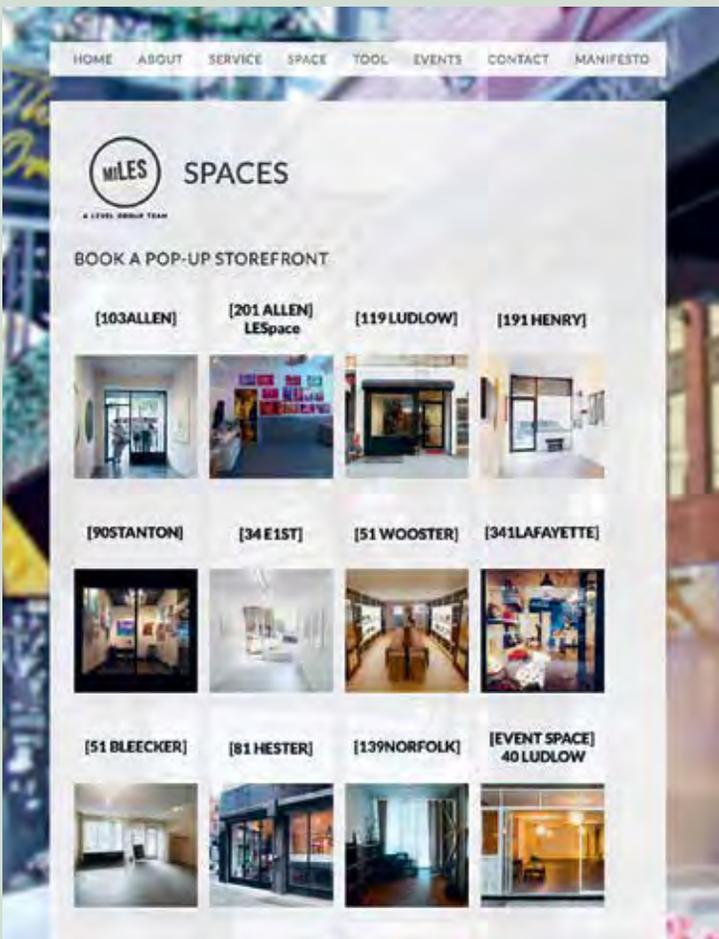
→ [foodswapnetwork.com](http://foodswapnetwork.com)

**\$300**  
rent/month

Working space

→ [sharedesk.net](http://sharedesk.net)

Our thanks go to soeder.ch and citizen-space.ch



2

1 Architect and founder of the pop-up service miLES, Eric Ho.

2 Listings of pop-up storefronts available on [madeinles.org](http://madeinles.org)

3 Minimalist design makes optimal use of the limited space at this Lower East Side pop-up.

4 Fashion and accessories are among the wide range of miLES shopping options.

5 Looking for a bite to eat? Pop-up restaurants abound in the now revitalized Lower East Side of New York City.



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# Pop-ups transform NYC!

→ [madeinles.org](http://madeinles.org)

A walk along a street filled with vacant storefronts in an otherwise thriving New York neighborhood prompted architect Eric Ho to start the civic-minded pop-up service miLES in 2012. The idea was simple: connect the organizations and people who want to use the space on a temporary basis with the owners who need to rent it. Through miLES, organizations can book a pop-up storefront and work with the team to develop the space in New York's Lower East Side and beyond. The pop-up storefronts have been used to sell designer purses, serve up gelato and Thai cuisine, watch films, host art shows and hold classes on salary negotiations and energy management.

Global Investor: How has miLES changed the Lower East Side for the better?

**ERIC HO:** We cultivate diversity within the neighborhood. miLES has enabled more than 100 pop-up uses, including for emerging brands, small businesses and the creative community who do not have access to commercial spaces. We are starting a movement where the neighborhood does not always have to be filled with bars, cafes, restaurants and retail chains, but independent activations that anyone who has an idea can start.

How popular are these pop-ups?

**ERIC HO:** We have received over a thousand requests over the two years since we started to operate. The most inspired use we had was a project called the "Strangers Project." The founder of the project has collected anonymous stories of strangers on the streets of New York and other places. They filled our space with over 600 of these stories where people talked about the deepest aspects of humanity and their lives. This exhibit attracted the most diverse audience. miLES worked earlier this year with ETH Zurich for the Ideas Festival. How was that collaboration?

**ERIC HO:** The experience with ETH Zurich was great! They had a storefront right across from their paper pavilion for their assembly process, instead of a warehouse space far away in a different neighborhood. What are your views on the sharing economy?

**ERIC HO:** The sharing economy is simply providing shared access to resources, which is something that humans have done for many centuries. It is just that now it is enabled by technology and access becomes much easier, and it has added a component of creating trust between strangers.



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## Do try this at home

→ [instructables.com](http://instructables.com)

Ever wondered how to serve watermelon the right way, design a water rocket launcher, build your own paddleboard or craft a three-wheel bike fish? Instructables is the website where people turn to answer mundane and quirky how-to questions in a broad range of areas: technology, fishing, crafts, food and more. The idea was born at the MIT Media Lab, and the website launched in 2005. People with an idea post their instructions and pictures on the website and reply to queries from those who would like to give it a try. In 2011, software company Autodesk purchased Instructables.



## Driving growth for greater mobility

→ [olacabs.com](http://olacabs.com)

It's a phenomenal success story. Bhavish Aggarwal (photo) and Ankit Bhati are the founders of Ola (formerly Ola Cabs), reportedly one of the fastest-growing companies in India. Based in Bangalore, Ola got up and running in early 2011. Similar to Uber, it's an app-based taxi-hailing provider that in just five years has grown to include a network of 250,000 cars in more than 100 cities. The company claims to be handling some 150,000 bookings

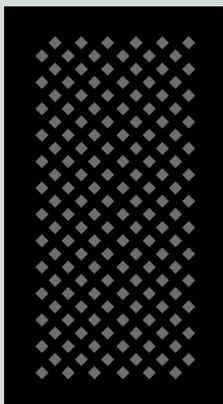


per day. Without its own fleet, Ola instead aggregates small fleets and single vehicle owners. Its growth has been so impressive that despite having yet to break even, there is no shortage of investors. The "International Business Times" reports that Ola is poised to raise more than USD 500 million in its current round of funding. Ola boasts a USD 5 billion valuation. POPULAR IN ASIA



### DID YOU KNOW... THE SHARING ECONOMY'S BIGGEST HURDLES

- Inconsistent experiences
- Quality issues
- Safety concerns
- Trust issues
- Regulatory uncertainty
- Questions about quality of jobs/status of independent contractors





1

- 1 A snapshot of the archive.org website, which boasts a collection of more than 10 million items.
- 2 The website features lighthearted content such as Popeye, Felix the Cat and other vintage cartoons.
- 3 The diverse content includes a video of popular US cartoon character Betty Boop.
- 4 Harvard University is one of many universities that have contributed content to the website.



# Universal library for the digital era

→ *archive.org*

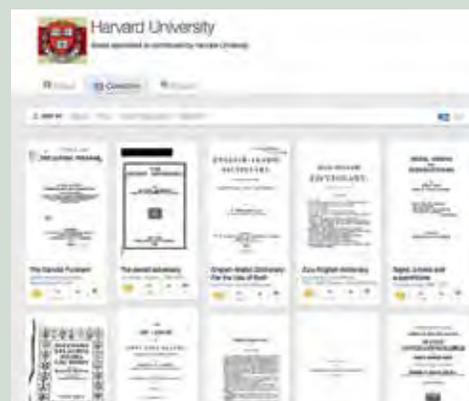
Most content today is posted online, never to see the dusty shelves of a library. Sadly, much of that content goes missing over time. The Internet archive is trying to counteract this by building an Internet library to “preserve a record for generations to come.” Users can look up old web pages that are no longer easily accessible. The archive also scans and digitizes books and offers other content including videos, audio clips, images, concerts and software. The wide selection includes a Hindi grammar book from ca. 1921, old French fairy tales, films noirs and retro video games.



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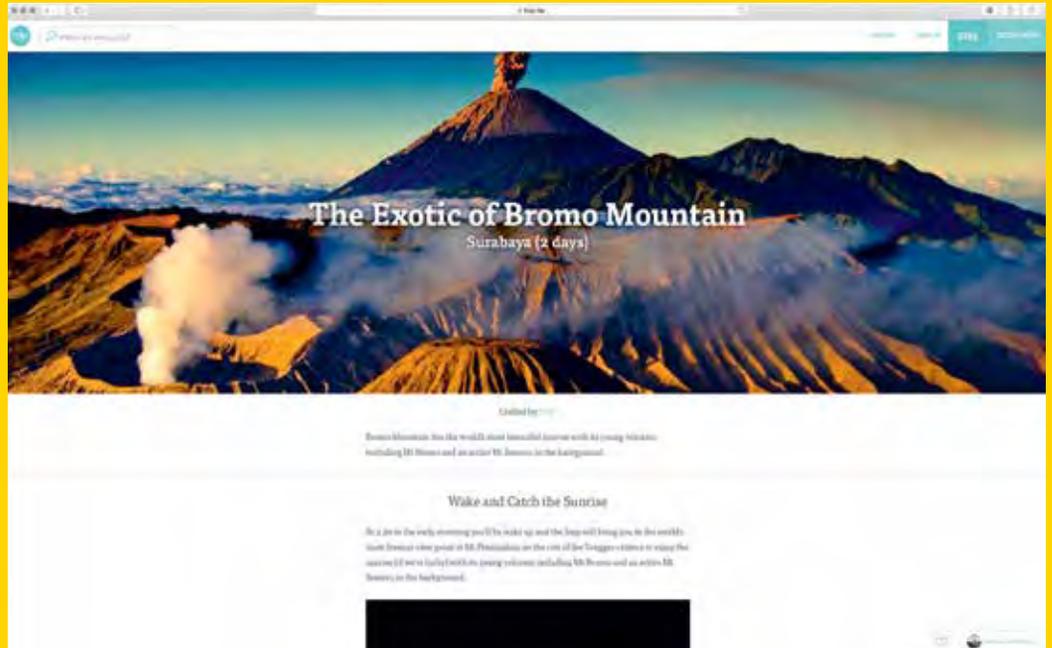
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# Sharing local knowledge with a global market

→ *triip.me*

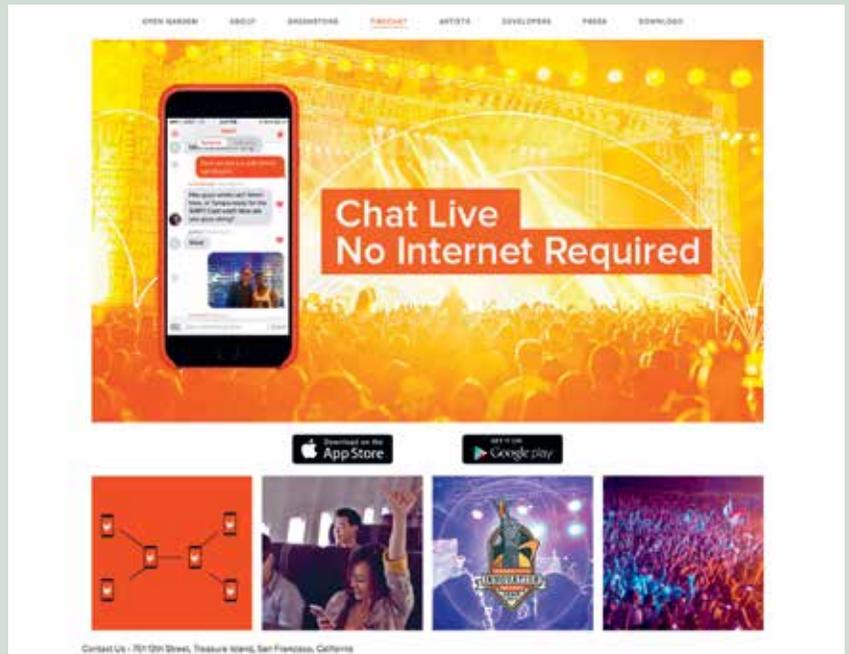
Thanks to the Vietnam-based travel company Triip.me, travelers can now enjoy the true local experience by using the company's portal to connect with engaged locals who rely on their insider knowledge and personal interests to design and offer a wide range of tours and outings. The company has some 800 guides working in 60 countries. **POPULAR IN ASIA, EUROPE, OCEANIA**



# Connect for free to your community

→ *opengarden.com*

In just a year, Open Garden's FireChat p2p mobile chat app has gone global. Touted as the "next version of the Internet," it lets large groups of people – crowds in the thousands – communicate for free via their mobiles without an Internet connection thanks to radios that can connect with devices 70 meters away. **POPULAR IN NORTH AMERICA, ASIA, EUROPE, SOUTH AMERICA**



The website for the FireChat app, illustrating how it can be used for concerts and airplanes.



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# Coming to a field near you

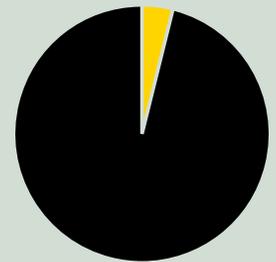
→ [fubles.com](http://fubles.com)

For athletes, finding a pickup match is often a challenge. Enter Italian start-up Fubles, which aims to get them playing the sport of their choice. Fubles began in 2007, when engineering student and soccer aficionado Vito Zongoli launched an online platform to link players to matches. It was a hit, and by 2009 there was a new version. Growth has been dramatic. Registered users have jumped from 7,000 to almost 500,000 in the last five years. So far, over 150,000 matches have been played via the Fubles website. Athletes can use Fubles to find or organize a match in their community, list the final score and even rate their fellow players.

POPULAR IN EUROPE



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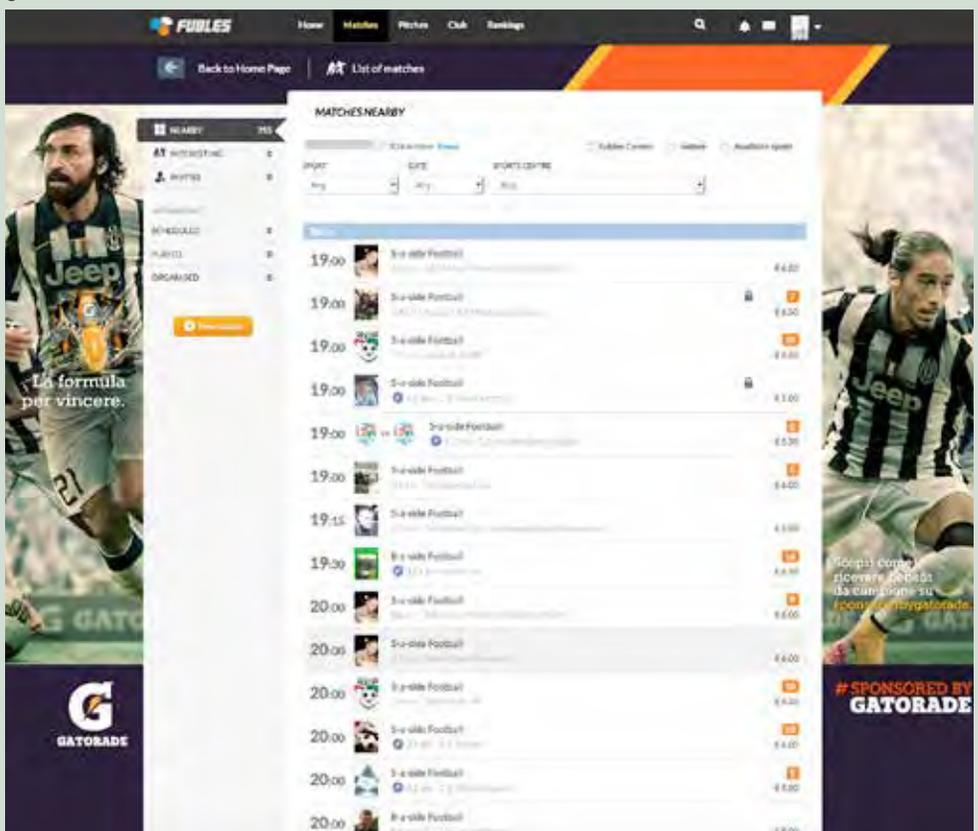


**4%**  
OF THE WORLD'S  
POPULATION IS  
ACTIVELY INVOLVED  
IN THE GAME OF  
SOCCER.

Source: fifa.com



3



1 Soccer, or football as most people prefer to call it, is the world's most popular game. Fubles gives people more opportunities to play the beautiful game by connecting them with available pickup matches in their area.

2 A snapshot of the Fubles website.

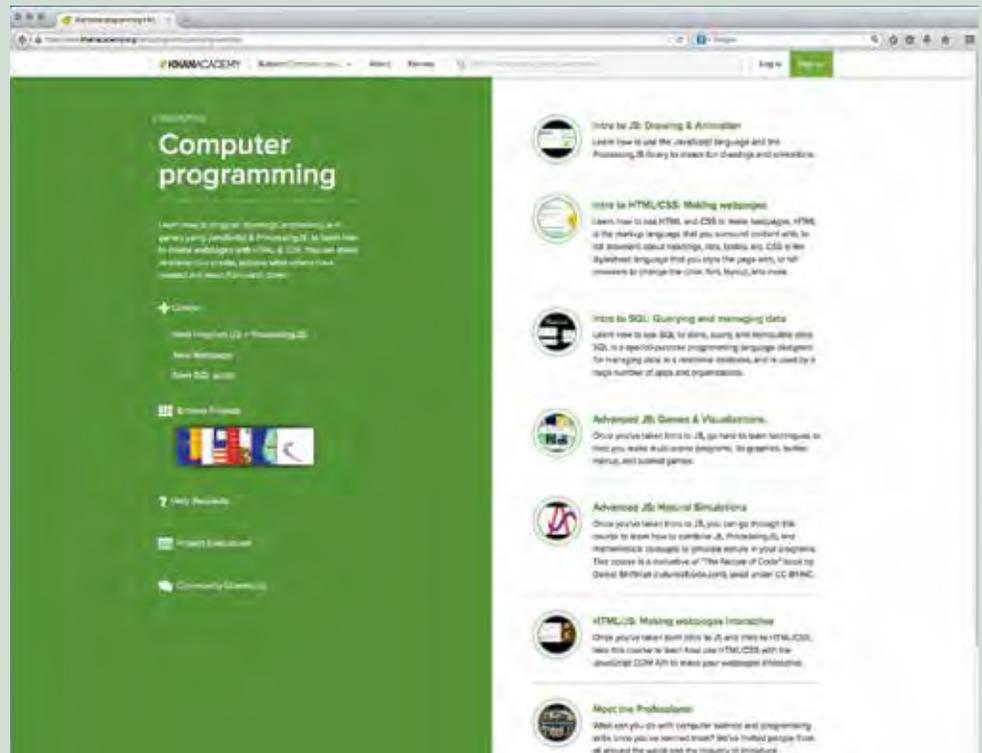
3 A list of matches on the Fubles website.



# Learn from Khan

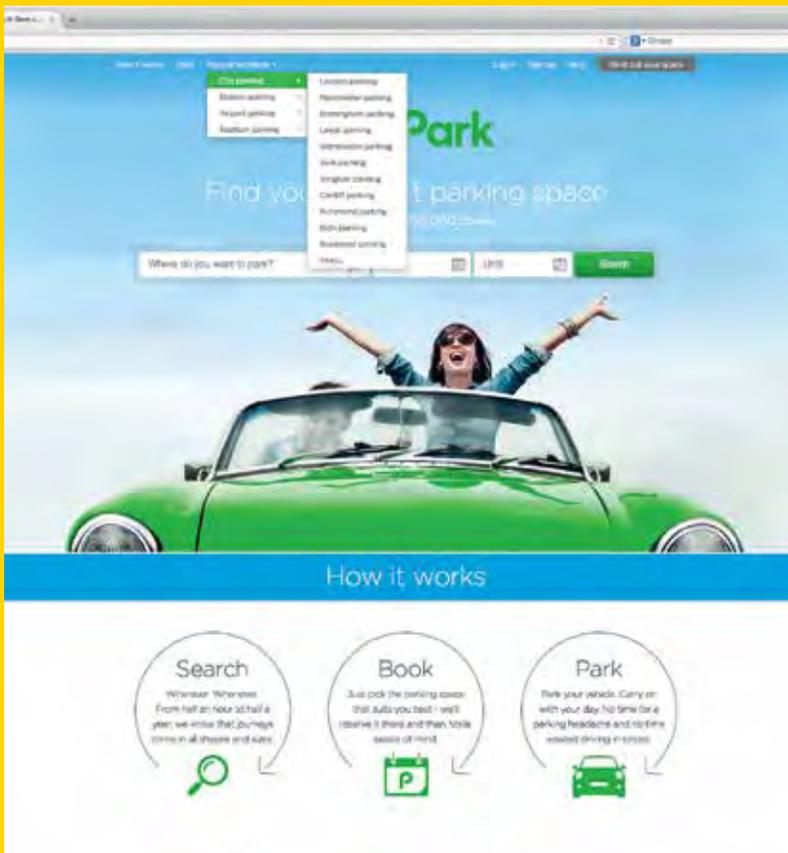
→ [khanacademy.org](http://khanacademy.org)

You can learn anything. This is the purpose behind the Khan Academy, a free tutorial website. Nearly 30 million people have signed up to watch tutorials on a wide range of subjects. The inspiration behind the Khan Academy can be traced back a decade, when founder Salman Khan (an MIT graduate) agreed to help his cousin with math. Other family members soon asked for his aid, and Khan decided to post lessons for his family on YouTube. He quickly found a much wider audience: the Khan Academy was born. The non-profit website's most famous fan is Bill Gates, whose foundation gave a USD 1.46 million grant to the Khan Academy in 2010. **POPULAR IN NORTH AMERICA, SOUTH AMERICA AND SOUTH ASIA**

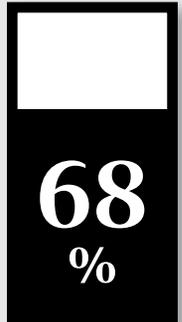


# Say good-bye to parking tickets

→ [justpark.com](http://justpark.com)



Finding parking in a busy city is now child's play with the JustPark website. Drivers in the UK no longer have to circle endlessly looking for elusive parking spots. Instead, they can book one at a private residence or car park ahead of time using JustPark. This not only saves time and stress, but drivers won't have to search their pockets for coins, worry about getting a dreaded ticket or pay a fortune. The website links drivers with owners wanting to rent out their space. Drivers can look for a spot by location, date, time and more via the website, mobile Internet or the iPhone app. A brief search in central London on a busy Saturday shows plenty of choice, ranging from private driveways to car parks to hotels. Prices range from GBP 5.90 (USD 9) to more than GBP 60. The website also provides an overview of parking by category, including airports, the London Underground, concert parking and sports stadiums. Founded in 2006, JustPark now has nearly one million users. Index Ventures, a European venture capital firm, and BMW i Ventures are JustPark's main investors. Earlier this year, the company also raised GBP 3.7 million from a crowdfunding campaign from nearly 3,000 people. **POPULAR IN EUROPE**



### DID YOU KNOW... WHO LIKES TO SHARE?

→ 68% of global online consumers say they are willing to share or rent their assets in exchange for payment, according to a Nielsen study. Two-thirds of the 30,000 consumers polled in 60 countries said they would use products that belong to other people in the sharing economy. Electronic devices top the list of items that people are willing to share, followed by power tools, bicycles, clothing, household items, sports equipment and cars. Residents of Asia are the most receptive when it comes to sharing goods and services.

## Jobs

# Workers in the sharing economy

For business, the attractions of the sharing economy include minimal cost, efficiency, convenience and avoidance of middlemen. For workers, it can mean greater flexibility and new opportunities. But some analysts argue that it may also mean lower wages, reduced protection and time spent waiting.

INTERVIEW BY GISELLE WEISS, freelance writer

Giselle Weiss: Two years ago you called the sharing economy a “dystopia where regular careers are vanishing, every worker is a freelancer, every labor transaction a one-night stand, and we collude with one another to cut our wages.” You can’t blame all that on the sharing economy, can you?

**Robert Kuttner** The sharing economy is not the cause. The sharing economy is the effect. The sharing economy is terrific if you are Bill Gates. The sharing economy is terrific if you run a hedge fund. The sharing economy is wonderful if you are the guy who founded Uber or TaskRabbit. It’s not so good if you’re the guy who works for Uber or TaskRabbit. Or if you work as a “picker” at an Amazon warehouse.

The industrial economy lent itself to that sort of social contract.

**Robert Kuttner** Yes, but in the early 20th century, before the 1930s, industrial workers had wretched political conditions. So the fact that we had a manufacturing economy was not sufficient. It took a shift in political power – the New Deal, the European period (when the European welfare state was built) and the strength

**“Computer-aided, app-mediated matching of services with people who are either customers or workers can be very innovative and add to productivity.”**

**Robert Kuttner**

of trade unions – to create the kind of social contract where ordinary people shared in the productivity gains. And that deal stuck to the wall maybe until the late 1970s and 1980s.

There’s a famous curve that shows the divergence of productivity growth from wages, where from the 1940s through the 1970s, productivity growth and wages go up in lockstep. But something happened in the 1980s.

**Robert Kuttner** What happened was a shift in political power, changes in technology and greater globalization. They all reinforced each other. By the time we wake up in the 2000s, owners and managers are finding it both possible and expedient to pay more workers as contingent (i.e., casual) labor, which is labor that doesn’t have any long-term expectations and that bids its price on a spot (i.e., short-term) market.

Isn’t that how labor markets are supposed to operate?

**Robert Kuttner** It is if you’re a neo-classical or libertarian economist. The only problem is, you can’t make a living. Now, for people at the top of the food chain, this is great! You can invent new stuff, and your labor costs are very cheap. But if you’re a person who dreams of being an entrepreneur and in the meantime are working for Uber, life is terrible. You don’t begin to have the income possibilities or aspirations that your parents had. And while I’m very supportive of entrepreneurship, I don’t think it’s either possible or desirable that everybody should be that sort of entrepreneur. And more and more work is contingent not by choice but because that’s the only work you can find. That’s not good.

How is this trend playing out in the broader economy?

**Robert Kuttner** Take law or medicine or academia, where the career path used to be quite stable and predictable: you didn’t get filthy rich, but you could make a few hundred thousand bucks a year and have a very satisfying profession. Now in academia you have fewer and fewer tenure-track professors (i.e., those with chairs or long-term contracts) and more adjuncts, which is academia’s version of the TaskRabbit economy. In law, you have many fewer partners and more paralegals. In medicine, the starting pay of an internist has gone inexorably down, and the number of people who can maintain private practices is diminishing. >



Photo: Steffen Thalemann

**“It’s possible for a technology to produce more efficiency and to have some of that efficiency actually shared with labor.”**

**Robert Kuttner**

## Robert Kuttner

has been economics editor of the “New Republic,” a columnist for “Business Week” and a columnist and investigative reporter for the “Washington Post.”

In 1989, together with Robert Reich and Paul Starr, he co-founded “American Prospect” magazine. He teaches at Brandeis University on globalization and democracy, and on the political economy of the American welfare state.

Instead, you have more salaried people working for hospital conglomerates.

Can you estimate the size of the contingent workforce?

**Robert Kuttner** You must read a book by David Weil called “The Fissured Workplace.” He was just appointed assistant secretary of labor in the United States for wages and hours and for labor standards. Weil says it’s about a third of the labor market in the US. Some people put it at 40%. And almost everybody who studies this area, including people who are enthusiastic about it, say that this number is only going to increase.

Does it have to be that way?

**Robert Kuttner** Cheap contingent labor is at the absolute center of the sharing economy model. And the really interesting question is, either through the power of collective bargaining, which is to say unions, or through regulation, can you tame this without destroying the innovative aspects of it?

Well, can you?

**Robert Kuttner** There is a very interesting case now involving so-called port truckers. These are the guys that unload containers from container ships and then drive the containers to warehouses, which are typically an hour or two away from the port. Trucking was deregulated in the late 1970s. Workers were forced to become freelancers, and had to buy their own trucks and pay their own gasoline or diesel fuel. Perhaps not surprisingly, the quality of the trucks and wages and efficiency all went down.

How did it resolve?

**Robert Kuttner** In the last couple of years, in Los Angeles, a combination of union power and regulatory power has changed the ground rules. You have to have trucks that meet certain safety standards. The trucks have to have onboard computers similar to the ones UPS and Fedex use. And instead of guys waiting in line for two years while they’re looking for where their container load is, the whole system is computerized and much more efficient. They know exactly where they’re supposed to go to pick up the load. And they get paid decent wages.

How sustainable a solution is it?

**Robert Kuttner** What makes it stick is that trucking companies have to meet certain standards of technological safety and efficiency. And they have to pay their

workers certain wages in order to be qualified to pick up containers at ports. In other words, this is a way of using technology but getting rid of the contingent aspect of the labor force in a way that’s probably more efficient over time because less time is wasted. So I think to some extent it’s possible to have your cake and eat it too. It’s possible for a technology to produce more efficiency and to have some of that efficiency actually shared with labor.

Your particular interest is how to reconcile the dynamism of a market economy with a tolerantly democratic and not-too-unequal society.

**Robert Kuttner** I think computer-aided, app-mediated matching of services with people who are either customers or workers can be very innovative and add to productivity. Uber – leaving out the terrible earnings – is a more efficient way of hailing a taxi than picking up the phone and calling a taxi or going out on the street and holding up your hand. But the downside is that if you just let this play out as a spot market, earnings will continue to be driven down. So there’s a convenience factor from the customer’s point of view, there’s an efficiency factor from the productivity point of view and obviously it’s very good from the perspective of the employer. But you’ve got to put a social floor under it so that all of the negative part doesn’t come out of the pockets of the employee or, in this case, not even an employee – a contingent worker.

Meaning, in practical terms?

**Robert Kuttner** In some cases you’ve got to regulate it, in some cases you’ve got to unionize it and in some cases you may have benign employers. But I think you just have to go sector by sector and put a social floor under it. ●

## Regulation

# Brave new world

Legal and regulatory structures have historically been built around the idea of ownership. The sharing economy now poses several questions. How to avoid hindering innovative entrepreneurs while ensuring that risk is not disproportionately borne by consumers and suppliers of services? Moreover, how to track income generated through activities that are still largely unregulated?

INTERVIEW BY **PATRICIA FEUBLI**, Credit Suisse

Patricia Feubli The sharing economy is frequently described in terms of limitless possibilities. Are there any cracks in the sharing façade?

**Marco Abele** One slightly complex issue is that the information on the supplier and the user side is asymmetric. If, as a user, you take an Uber ride, or a Didi Kuaidi ride (a competitor platform in China), you don't really know the background of the driver. When you rent an Airbnb apartment, you don't have the information you would typically have in a hotel. The lack of information is potentially problematic. But information asymmetry can be addressed by users themselves through feedback or rating systems. Isn't that a good fail-safe? Or are there issues that cannot be addressed by users and where government intervention might be needed?

**Marco Abele** Ratings are definitely one way to restore the balance of informa-

tion, though you could argue about how objective they are and to what extent they are engineered. But for a sharing platform to survive, huge demand and supply are necessary. Therefore, a major regulatory and legal topic is the market power of platform owners.

**Salvatore Iacangelo** There is also the question of how much regulation you really want. Legislation tries to establish a level playing field for providers of specific services. But you could argue, for instance, that for a stay in a private house, you might not need to have the same infrastructure quality you'd find in a hotel, where you have many people. Whereas for taxis, guaranteeing things like car maintenance and insurance would help to mitigate risk.

**Marco Abele** There's maybe even a third dimension in terms of who's affected by the activity. For example, with Airbnb, a space that was a living area now turns into a

hotel-like area where people come and go. Your environment, or that of others, is affected by it. That's something which is very difficult to assess.

Are current regulations and legal instruments adequate enough to address these complexities?

**Marco Abele** Of course they're not adequate, or we wouldn't be discussing it! Up to now, that inadequacy may have helped to facilitate growth, in the sense that certain platforms intelligently engineered their environment, so to speak, to fit the purpose. Today, we're at the point where quality standards are probably necessary to avoid any downside from a human perspective.

**Salvatore Iacangelo** I would hope that the market somehow self-regulates by adopting appropriate rules, say in leases. Because wherever there are people who contractually forbid the use of leased apartments for Airbnb, for example, there are others that allow it. If there is a need for these types of services, there is a market. India's Ola Cabs, a fast-rising transport alternative for the country's huge urban population, is just one example. And when there is a market, there is change.

How so?

**Salvatore Iacangelo** We saw it in the music industry, which was fairly heavily protected from a legal perspective. But enforcement was very difficult. When enforcement is difficult, typically rules change because they become useless. And this is the dynamic that eventually occurs and ideally ends in self-regulation. Suddenly you could lease music and use it via Spotify and didn't have to buy anything.

What specific examples are there of self-regulation, or of government efforts to regulate the quality of these services?

**Salvatore Iacangelo** You don't yet see specific laws and regulations addressing this – because there's just no urgency or acute need for that at the moment. What you do see is existing laws and regulations being interpreted in a way that somehow ensures protection of certain parameters. In June 2015, the California labor commissioner ruled that Uber drivers are employees, and not independent contractors. What are the implications of this ruling for Uber and other peer-to-peer platform owners?

**Salvatore Iacangelo** That ruling pertains only to California. And there might have been a specific situation that led that judge

to decide accordingly. This is something that one would need to assess on a jurisdiction-by-jurisdiction basis. It doesn't mean that an Uber driver has or needs to be considered an employee everywhere in the world. It will always depend on the specific circumstances.

You seem to be very positive about these platform owners. But you've also suggested that they need an outsized market power to survive. However, such market power might blind them to the needs of their users and suppliers. Isn't that a contradiction?

**Salvatore Iacangelo** No, because they want to keep that market power. They will adjust as needed to keep that market power because it's what drives their business model.

**Marco Abele** But the market power leads to a kind of system-inherent monopoly.

**Salvatore Iacangelo** Correct. If you want to sell something on the Internet, it's basically eBay. Of course there are alternatives. But you won't reach a large audience unless you place it on eBay. There is always one platform that eventually emerges, and stays. And all the others become irrelevant or fall away. The same was true of Google for searching. But to go back to the question of whether the sharing economy can survive its contradictions ...

**Marco Abele** I'm positive. It's driven by a true need of humans to share – a need that goes back to primitive communities and that developed even more over the last few centuries – and that is now also driven by the desire to use the planet's resources more efficiently. I don't see that disappearing.

**Salvatore Iacangelo** I totally agree. The sharing economy is nothing new – it's today's technology that allows more efficient sharing. For me, it's a trend that is going to stay and even become stronger because of the scarcity of resources and the democratization of the use of goods that comes with it. I don't think we really have much choice. Which brings us to the thorny issue of taxes. Regular people who offer accommodation on Airbnb receive money in exchange. But that money is not necessarily visible to tax authorities. What is the solution to taxing the sharing economy?

**Salvatore Iacangelo** Think of the real or physical world. You have an identity and you have an address, and somehow the government can locate you or connect you to a certain place. Whenever you work or interact commercially, you get receipts

# “Sharing is a concept that has not been entirely thought through with respect to what legal norms and behaviors apply. It's new territory.”

**Marco Abele**

and confirmations. You generate a trail of what you have done, earned and spent. But it's still up to you to file a tax return to the government and to include a statement from your employer that you have earned this or that amount of money. So at core, this system relies on the self-discipline of citizens.

And that's not changing in the digital environment?

**Salvatore Iacangelo** No. The only thing, obviously, is that you need to be able to enforce the rules. Otherwise they become obsolete. But to enforce the rules, you need an appropriate infrastructure.

Has anyone managed to create such an infrastructure for the digital world?

**Salvatore Iacangelo** Actually, Estonia has. Estonia provides a digital ID to every single citizen. The country has also advanced availability of digital services in the governmental space. I can very well imagine that Estonia might spearhead the evolution that will have to take place in other countries in this respect.

What would you say is the biggest challenge at present in dealing with the regulatory and legal aspects of the sharing economy?

**Marco Abele** Today, legal structures are all built on ownership. You own something, and you either sell this ownership or not. But sharing is a concept that has not been entirely thought through with respect to what legal norms and behaviors apply. It's new territory.

**Salvatore Iacangelo** I totally agree. It's underdeveloped. Even where we have leasing or other types of sharing, it's always based on ownership. Protecting ownership is predominant. And that's fine, but it does not necessarily fit the purpose of a sharing economy. That's the type of transformation that will have to take place in various areas in order to find a good and sound legal context for this new type of economy. ●

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## Fork in the road

# To share, or to automate?

Banks are now facing a decision: either more peer-to-peer interactions or automation. This not only affects lending and payment transactions – highly specialized revenue generating services in the asset and wealth management business will also face intense competition.

The face of banking is changing dramatically, and is likely to continue at an unprecedented rate as a result of automation and peer-to-peer (P2P) models, which integrate aspects of the sharing economy into banking services. While we do not examine automation in depth here, recent trends are nevertheless worth highlighting: robo-advice, an automated algorithm-based financial service, is a very dynamic field in banking. Blackrock just acquired Future-Advisor in late August 2015 and National Australia Bank launched its own robo-advice model in September. These examples highlight that the asset management and advice value proposition is under attack from digital disruption across the entire value chain. As a result, we expect the high-touch advice models to come under even more cost pressure.

## Chasing zero costs and no time friction

The concept of the Zero Marginal Cost Society introduced by Jeremy Rifkin highlights this trend. According to his thesis, automation

and sharing will replace traditional means of production, driving the marginal cost of a product and service to zero, while providing instant access to a solution. To compete in this race toward no cost and/or no time friction, banks need to position themselves with relevant service offerings, or with their own “disrupters.”

The sharing economy is also reshaping the banking industry, particularly as P2P models gain traction. P2P trends help empower bank clients, particularly investors and borrowers. Instead of looking to financial corporations to tell investors what to do, or borrowers asking for loans, clients perform these services themselves, particularly in lending and increasingly in the investment and advisory space. In Europe, customers already conduct 50% of all service interactions and around 30% of the more complex advisory services themselves. The Nordic countries and the Netherlands are leaders in this respect. As a result, banking is transforming from something you go to – a branch office

or a meeting with a relationship manager – to something you as a client do yourself, or offer directly to other (former) banking clients.

P2P business models allow participants to generate an income stream, making them even more powerful. Four other attributes are relevant for the success of sharing economy applications in banking:

■ **They address an investor or borrower need:** Address in a transparent manner the need to invest or the need to borrow money to start a business.

■ **They simplify banking services:** All models simplify the banking offering, for example, by reducing a user’s dependence on branch opening hours as well as reducing the paperwork and time used to complete their business.

■ **Create a marketplace:** P2P banking solutions offer a single source for a considerable number of users and create large, transparent marketplaces.

■ **Use the wisdom of the crowd:** Solutions must offer the ability to scale the model quickly, and to take advantage of participants’ expertise. P2P solutions harness the power of the crowd economy, which is also a main driver of change for banks. The crowd economy combines aspects of the sharing economy such as open innovation, mass collaboration and particularly “crowd intelligence.” Such expertise comes at a much lower cost or even for free, while staff and IT costs at a typical bank account for around 40%–70% of all expenses.

## Disrupting the value chain in investments

Wikifolio, a social platform that allows investors to post their own trading strategies, is a very interesting example with respect to costs. Any investor can post a wikifolio on the platform, which is basically a selection of stocks. The basket is launched and can be traded if it receives sufficient interest from real-money investors over a two-week period. The investment specialist that launched the idea is paid only if the basket is a success in terms of performance and assets invested. These costs are fully transparent and available at all times.

Wikifolio is serving to disrupt the banks’ value chain in the structured products space. The platform gains access to investment professionals’ expertise for free, as it only matches trading ideas with investors, and pays only if the trades are successful, through revenue sharing. This allows investors to track the performance of the individual investment professionals as well as their own invest-

ments. For investors, the service is fully transparent and cheaper in terms of pricing.

Wikifolio fulfills all of the four criteria defined earlier: it addresses an investor need, it is simple and transparent, it creates its own marketplace and is fully scalable. Moreover, the regulatory reporting requirements are performed by a bank that does not produce structured products, and thus does not cannibalize its own offering. In a nutshell, it is a fully disruptive business model built upon the rules of the crowd economy.

**P2P lending set to change the landscape**

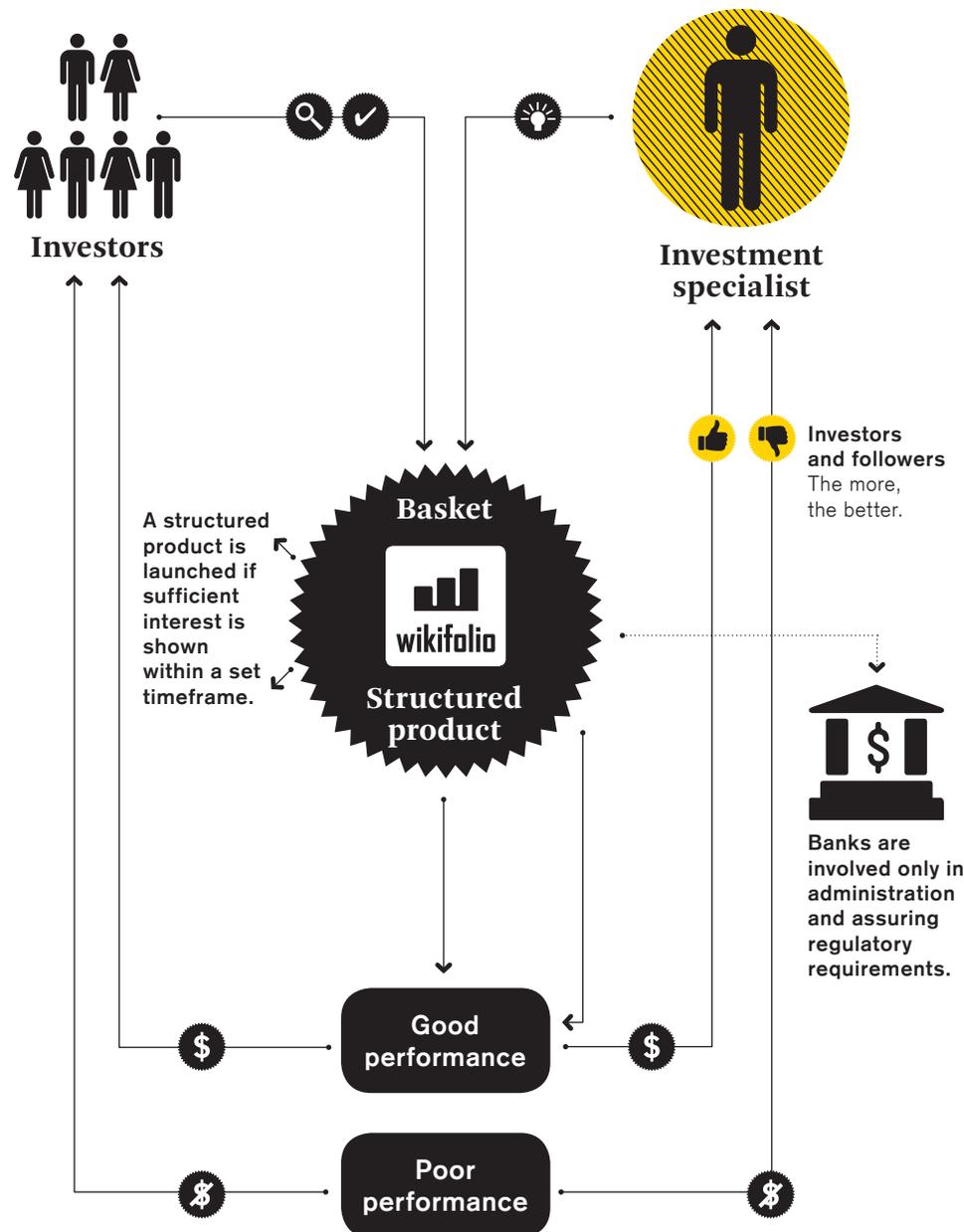
P2P lending platforms match lenders and borrowers directly, where they agree on consumer credit, mortgage loans, and student loans as well as for lending among small and medium-sized enterprises. Perceived as being a special part of the sharing economy, investors share a part of their wealth in return for interest – comparable to sharing a car for a fee.

According to McKinsey, global P2P loan volumes reached USD 25 billion in late 2014. Current estimates place this figure as high as USD 290 billion by 2020, which would see it become a meaningful market by that time. By comparison, P2P lending represents only 0.7% of outstanding consumer loans in the US today. This highlights the potential for growth, given the sheer market potential P2P lending has globally. It allows retail investors to access a new investment category starting with as little as USD 25. Furthermore, P2P lending has become so attractive for institutional investors hunting for yield and in search of diversification that various platforms have put limits on the amounts one can invest.

The sharing economy has become a reality. Together with automation in banking, it will likely lead to a seismic shift in the banking industry toward a completely new model. As has happened so often in the past, banks will need to adapt – this time cannibalizing today’s businesses with new offerings to remain successful in the economy of the 21st century. ●

**Wikifolio chart: Where is the bank?**

Wikifolio brings investment specialists and investors together on a single platform. If an investment idea is successful, a structured product is launched. Investors pay a small commission, and investment specialists are paid a portion of the fee: i.e. Wikifolio makes investment ideas available without bearing the staffing costs for investment specialists. A bank is involved, for a fee, only for administration and satisfying regulatory requirements, and thus becomes a service provider without direct client contact or knowledge of market trends. Source: www.wikifolio.ch, Credit Suisse



# Money at the click of a button

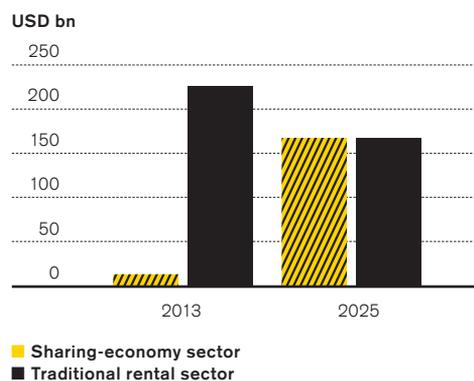
The rise of the sharing economy is now a high-profile investment theme. Driven by the rapid growth of the Internet, it includes mobile devices and “things.” Some Internet platform firms have become highly valued sharing business models. Established giants could benefit or face challenges from this disruptive force.

Some business leaders in non-Internet-based industries view a meeting with Google like a “rendezvous with Joe Black” in reference to the movie of the same name, in which a media mogul meets Death in the form of a young man. Traditional industries may still be breathing, but Google serves as a reminder that their time is up. The sharing economy is also a disruptive force to existing industries, as it continues to record rapid growth. According to Crowd Companies, participation rates in sharing services could double in 2015. Industry researcher Nielsen reports that 68% of adults globally are willing to share or rent goods. Sharing is not a new idea, so why is it becoming such a disruptive force? The main reason is that there has been a shift from physical to digital merchandise. The latter has gained considerable traction as the Internet expands to mobile communication devices and other things. This makes it possible to coordinate peer-to-peer or business-to-people services in a more efficient and secure manner. Many Internet-based sharing platforms and marketplaces such as Uber, Spotify and HomeAway have emerged, and the number of users is growing quickly. Compa-

## 01 Forecast of sharing-economy sales vs. traditional rental sector sales

The sharing economy is expected to grow fast in various sectors at the expense of traditional rental sectors such as equipment rental, B&B and hostels, book rental, car rental and DVD rental.

Source: PwC, Credit Suisse



nies to watch include non-listed venture-capital funded firms such as Uber, Blablacar and Airbnb, valued between USD 5 billion and more than USD 50 billion in the gray market.

### Value placed on leverage potential

Why is it that sharing firms appear to be so attractive and why do investors value them at much higher amounts than traditional rental companies? Industry researcher PricewaterhouseCoopers identifies five main sharing-economy sectors (peer-to-peer lending and crowdfunding, online staffing, peer-to-peer accommodation, car sharing, music and video streaming), which currently generate around USD 15 billion in global revenues compared with USD 225 billion for traditional rental sectors. It expects the sharing-economy to grow to USD 335 billion in sales over a ten-year period of which 50% would be generated by the new sharing-economy Internet platform firms. Such growth will come from better pricing, growing demand and the political wish to use assets more efficiently, by making them more convenient and trustworthy.

Investors are enthusiastic about such growth prospects. Compared to traditional rental services, they also like the “capex light” structure of Internet platform firms and the scalability of their business models. Companies such as Uber, Airbnb, as well as listed company Just Eat, merely serve as a hub to bring a large number of suppliers and users of services together at the click of a button. The cost of a transaction is close to zero. Investments are limited to the costs for building, providing and maintaining an IT platform, a mobile application and an easy to handle and secure payment system. Investments are relatively low, and represent manageable fixed costs. To reach break-even, the platform needs to reach a critical mass of transactions, for which firms usually charge a commission of 1%–10% of the value of the product or services used. Once critical mass is achieved, every new user and transaction contributes to a rising margin. Thus investors should first look at the sustainability and potential size of a company’s user base, and how often users access the platform when analyzing the value of a newcomer in this market.

### A challenge to established Internet giants?

User base and engagement rates are also important for incumbent Internet giants such as Facebook, Google, Amazon, LinkedIn or Priceline.com. In the past three years, the value of the listed Internet-based companies

cited earlier has increased by between 80% and 300% on growing sales of 20%–30% per year. Are such growth rates now in jeopardy due to the rising success of sharing-economy Internet platform firms? Could these newcomers have a dilutive or even disruptive impact on the business of well-established companies? The newer Internet platforms' user base and engagement rates are still much lower than those of the more established companies. But if the newer platforms continue to grow, they will have the option to enter into new businesses, and to also compete with the Internet giants. As Internet sharing platforms, it is only natural that Uber or Airbnb would want to look at other markets such as advertising and retail.

There are clearly potential negatives but also positives for established Internet giants. If consumers rent more, it could have a dilutive impact on growth rates of commercial sales or searches. Amazon and Google, however, already act as sharing platforms and could expand to other sharing offerings as well. They could also acquire a successful new Internet platform to expand their core business. The trend toward a sharing economy could have a very positive impact on social media firms such as Facebook and LinkedIn. They could monetize their database and provide identity and reputation profiles. Trust and reputation in sharing services are crucial. Both firms could play a big role via log-ins and connections for sharing businesses. Alternative bookings as provided by Airbnb could increasingly turn out to be negative for the core hotel booking business, where take rates could come under pressure. However, both Priceline.com and Expedia have launched similar offerings, which could represent a new area of growth if cannibalization is limited.

From an investor's point of view, the sharing economy should be positive for the Internet sector, as it leads to increasing Internet engagement. New and established Internet platform firms continue to generate value, mostly at the expense of traditional sectors. Furthermore, valuations need to reflect newcomers' takeover appeal as well as the "option value," their potential to enter into new businesses. These companies are a disruptive force to be reckoned with. ●

## 02\_User base of sharing-economy Internet platform in millions

User base and engagement rate of newcomers in the Internet sector is rising fast, but is still far below those of Internet giants such as Facebook, Google and Amazon. However, rising reach could have a dilutive business impact on the latter. Source: Company data, Credit Suisse

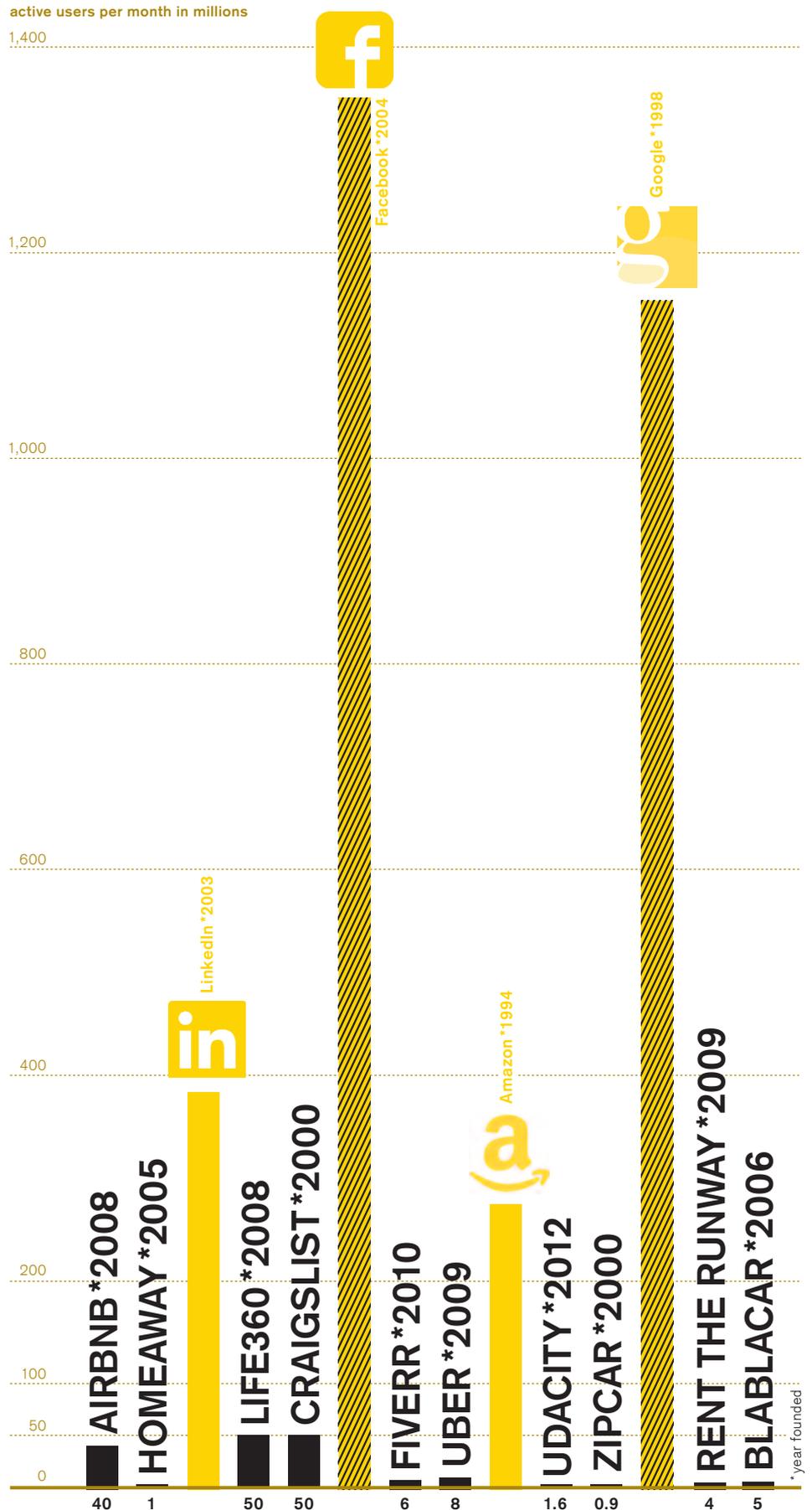




Photo: Domenico Pugliese

Oxford Martin Citi Fellow Carl Benedikt Frey says the key driver behind the sharing economy is the combination of digitalization and globalization.

## Economy

# Advent of the e-market

The sharing economy poses a number of tantalizing uncertainties. While the benefits for consumers are enormous, we know little about its impact on growth and its long-term implications for labor markets. In the end, adapting to the rise of the sharing economy will require a shift in mindsets and policies to mitigate associated risks, while maximizing the benefits. Carl Benedikt Frey reflects on whether the sharing economy is here to stay, and what it will mean for the future.

INTERVIEW BY GISELLE WEISS

Giselle Weiss: Sharing is a natural human impulse. But we don't usually think of it as fueling an economy that can provide jobs and quality education, and in general move society along. What makes the sharing economy an "economy?"

**Carl Benedikt Frey** An economy is a system of production, trade and consumption. Sharing is the practice of giving something for free. In many ways the sharing economy is not sharing in that you actually pay a price for something. In the case of services like Uber, obviously if somebody takes an Uber taxi ride rather than a normal taxi ride, it's cheaper, but it is not sharing. We nevertheless tend to refer to Uber as a part of the sharing economy.

What is driving it?

**Carl Benedikt Frey** I see three key drivers. The first relates to income and inequal-

ity. In recent decades, median wages have stagnated, while top incomes have surged. High-income individuals often have unused assets, while people with lower incomes are demanding cheaper goods and services, contributing to the rise of the sharing economy. Another driver is environmental awareness. People are already willing to pay a premium price for a product they think has been produced in an environmentally sound manner. Sharing helps the environment. But you can help the environment and get a better deal at the same time.

And the third driver?

**Carl Benedikt Frey** The third and most important driver is the combination of digitalization and globalization – in the sense that you can transfer information and services across the globe at more or less zero cost. And that creates opportunities both

for people to buy services from low-cost locations where labor is cheaper, and for individuals in deprived areas to access global markets.

Does the value proposition of the sharing economy depend exclusively on setting prices at a discount to existing commercial offerings?

**Carl Benedikt Frey** Overall, the value proposition of the sharing economy is primarily to reduce costs for consumers and create more flexibility. The value proposition of renting a luxury apartment offered by Airbnb, however, may in some cases be that you'd rather do that than go to a hotel. The apartment may be even more expensive than the hotel, but offer more privacy, for example. The sharing of goods also signals environmental awareness, which is increasingly becoming an important value proposition. >

What kinds of tasks or activities are likely to be shared given increased online population, faster networks and so forth?

**Carl Benedikt Frey** Work is being shared when transaction costs are low. In particular, work activities that can be delivered electronically over long distances with no big reduction in quality are most suitable for being shared as they can be undertaken from any remote location. Examples of such tasks include translation, market research and high-end science jobs. But many work-sharing platforms now also focus on personally delivered services. TaskRabbit, for example, offers services including cleaning someone's house, building someone's IKEA furniture or running someone's errands. Difficulties tend to arise when a work task is difficult to define and when an activity cannot be divided into specific tasks. For example, work that requires complex physical interactions, such as collaborative science and other skilled teamwork, is difficult to share. But most other work is now suitable for delivery through online platforms.

Your research focuses on automation. How is that likely to affect the sharing economy?

**Carl Benedikt Frey** That is a good question. The relationship between automation and the sharing economy is not well understood. But arguably it is best analyzed through the lens of Ronald Coase's theory of transaction cost economics, which says that the higher the costs of producing something internally, the better to replace employees with external contractors. Because automation drives down companies' costs of producing something internally, it may reduce the demand for work sharing. So in that way, automation may be bad news for the sharing economy?

**Carl Benedikt Frey** Possibly, but at the same time digitalization has perhaps even more significantly cut costs for companies since it allows them to contract with workers abroad, often at cheap locations, to do very specific tasks. Entire supply chains have been reorganized around that. When a task is outsourced ...

**Carl Benedikt Frey** ... it's made more routine. And once something is routine, it also becomes increasingly automatable. So the sharing economy and all the data it generates about tasks people do may help drive automation. By the same token, while an Uber driver could be displaced by an autonomous vehicle, there are also cases in which outsourcing work may reduce

# “If one looks at the drivers of the sharing economy, there are good reasons to believe that it will endure.”

**Carl Benedikt Frey**

**Carl Benedikt Frey** is Oxford Martin Citi Fellow and Co-Director of the Oxford Martin Programme on Technology at the University of Oxford. His research focuses on the transition of industrial nations to digital economies and challenges for economic growth, labor markets and urban development.

incentives to automate in the sense that it drives down costs and makes automation less economically feasible.

A blog post in the “Financial Times” suggested that the sharing economy creates a “risk of digital serfdom.” Are we reinventing feudalism?

**Carl Benedikt Frey** Feudalism was a system in which people worked and fought for nobles who gave them protection and the right to use land in return. The sharing economy, by contrast, contains few obligations, but also little protection. So it's quite the opposite of feudalism. At the end of the day, how workers will fare as a result of the sharing economy depends on how governments respond. They need to maximize the benefits for consumers, while mitigating the risks for workers. One way of doing so would be to create a national e-market.

A national e-market?

**Carl Benedikt Frey** We live in an era of big data, but much of its potential is not being realized. Right now, if I want to do some work, I can turn to TaskRabbit or Upwork or Mechanical Turk. If I want to rent an apartment, I go on Airbnb. If I want to share a car, I go to RelayRides. But they are separate platforms. Say I'm sitting in my apartment at four o'clock on Tuesday afternoon, and I desperately want to make some extra income. It would help to have a central platform that tells me these are jobs that you can do within this neighborhood, these are the types of skills you would need to do all these different types of jobs, this is what they would pay, and to do this, you would need this certificate: you can get that here. National e-markets would also give policy-makers better access to relevant information to monitor trends in the labor market.

Is the sharing economy here to stay?

**Carl Benedikt Frey** If one looks at the drivers of the sharing economy, there are good reasons to believe that it will endure. Wage inequality is likely to increase further in coming decades, and people on low incomes will want access to even cheaper goods and services. People are also seemingly becoming more concerned about climate change. Through digitalization and globalization we are becoming more connected, and work can be shared across the globe more easily. So I see no sign of this slowing down, although there will no doubt be regulatory pressure in some domains. But how that plays out is very difficult to predict. ●

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