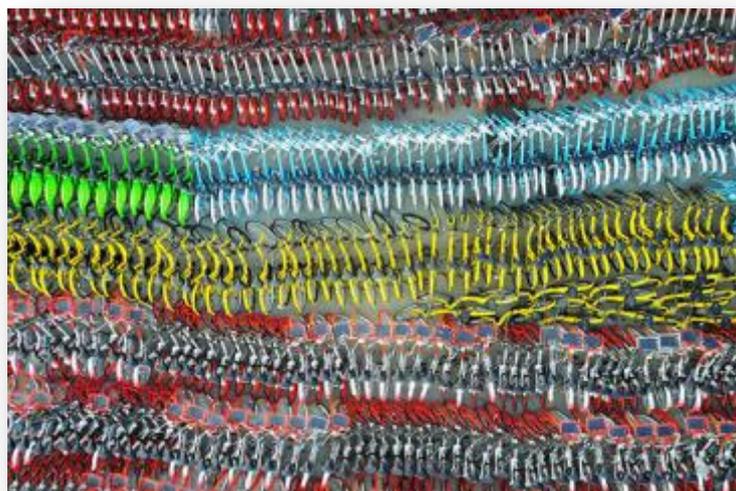




Bike sharing systems have recently enabled sustainable means of shared mobility through automated rental stations. Variation of bike rentals, however, leads to imbalances in the distribution of bikes causing full or empty stations. Lin Mei, 30, a regular user of the shared bikes has been a bike share member for three years. She says that she could hardly find a place to park his bike at the station nearest his office, and about once a month would he arrive to find that all the docks were already taken. "Since the handover it seems like it's closer to weekly," she says. "When it has happened, it's been harder to find a fallback station because my usual fallback station has been completely inactive. "Now, to find a free dock she sometimes has to backtrack below the market, and if she can't find an open dock there, she ends up back where she started.

**The sharing bicycles companies are incapable of fixing up the broken bicycles due to the shortage of appropriate places to park them, and the design of the whole sharing system is not adequate at all.**



More than 4,000 illegal parking bicycles impounded by authorities in Beijing, March 1, 2017. [Photo/VCG]

At present, Beijing has 700,000 shared bikes from companies including *Ofo*, *Mobike* and *Bluegogo*. There are about 11 million registered users, equivalent to nearly half of Beijing's population, the commission said. The rapid growth started in August, and has created a few issues, like overcapacity and traffic disorder. Some users leave bikes randomly without obeying the regulations. And some companies put huge numbers of bikes on the street to protect their market share. Bike-on-demand services like Beijing-based *Mobike* have been making inroads in recent weeks, but problems of



disorderly parking, theft, and sabotage have emerged as bike-sharing gains in popularity. Beijing News has reported at least 7 cases of destroyed bikes this month in Beijing. The sharing bicycles companies are incapable of fixing up the broken bicycles due to the shortage of appropriate places to park them, and the design of the whole sharing system is not adequate at all.

Several studies suggest that the fear of cycle theft may discourage bicycle use, and that many bicycle theft victims do not buy a replacement. Combating bicycle theft is therefore a necessary step toward increasing the use of this sustainable form of transport, an increase that unexpectedly may also improve cyclist safety. To elaborate, a recent international review of schemes to encourage walking and cycling found strong evidence indicating that as the number of cyclists and walkers

increased, the frequency of collisions between those groups and motorists actually decreased. The authors concluded that an effective means of improving the safety of cyclists and walkers is therefore to increase the numbers of people cycling and walking. Despite this, little attention has been paid to the prevention of bicycle theft. Car theft has received much more attention, for example, yet according to data collected as part of the International Crime Victim Survey, for all countries for which data were available (including the United States), bicycle owners are far more likely to have their bikes stolen (4.7%) than car owners their cars (1.2%) and motorcyclists their motorcycles (1.9%). The bike sharing business took off in China less than two years ago after startups lured investment to use Internet technology to transform the mobility sector. Riders spend as little as one yuan (about \$0.15) per hour after unlocking bicycles with a mobile app, and they can drop them off anywhere for the next user. *Mobike*, *Bluegogo* and *Ofo* are among the major companies. According to Beijing-based think tank analysis, there were 18.86 million users of shared bicycles nationwide at the end of 2016.

**Thieves tend to steal the sharing bicycles illegally without punishment.**

**Combating bicycle theft is therefore a necessary step toward increasing the use of this sustainable form of transport.**



**Some effective laws must be erected immediately to solve the problem. Police are now partnering with bike sharing firms to launch a joint command to monitor the number of bikes in designated areas to prevent congestion or chaos on the road.**

China is known to impose some of the world's toughest car driving restrictions, and now the checks and controls are expanding to the bike-sharing industry. Police said they are now partnering with bike sharing firms to launch a joint command to monitor the number of bikes in designated areas to prevent congestion or chaos on the road. The firms have been ordered to report to police the number of bikes to be released in key areas before holidays. Recently, two nurses in Beijing were placed under administrative detention for five days for putting locks on two shared bikes, while the parking of bikes often violates traffic safety laws."

Bike-sharing is a greener method of transportation and provides a user-friendly experience," Liu Xiaoming, vice-minister of transport, said on Monday. "But it is a combination of online and offline business. Operators are usually strong in online services, but lack offline business experience, which causes problems."



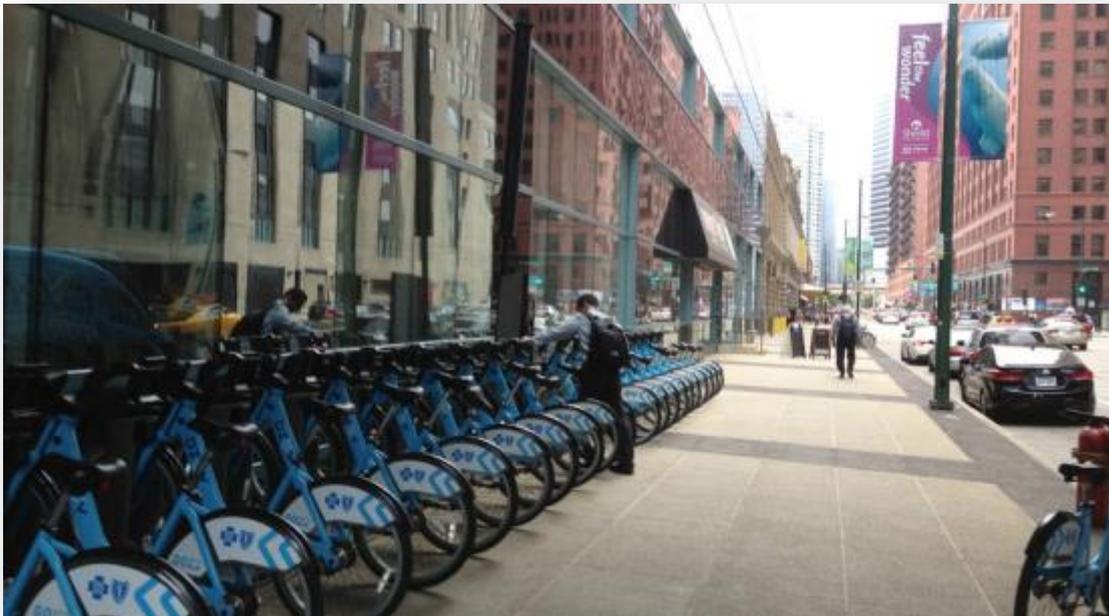
Sharing bikes lying in the grass. [Photo from web]



The systems tend to work on one of two principles, either a smart card activation or cell phone activation. Since the honors system didn't work, almost every place now has a membership fee.

Sometimes a credit card is required to obtain the membership or a smart card has to be swiped to unlock the bicycle. Surely with a combination of mobile phone apps, GPS, RFDI, and computer-assisted manufacturing, answers can be found. At this point the technology is expensive enough that bicycle sharing is practical only where population density is high—such as high-rise or mid-rise apartment areas in cities or college campuses.

**A way to protect bicycles with unique design that the companies can track the users' traces. Surely with a combination of mobile phone apps, GPS, RFDI, and computer-assisted manufacturing, answers can be found.**



This photo is taken by Dan Weissmann, a sustainability reporter for Marketplace who has produced multimedia and radio features for WBEZ, NPR, BBC World Service and other public-media outlets.

Our advice to mid-sized and small cities is to wait until the big cities have inspired someone to mash together technology solutions to logistics and thievery questions. The multiple potential benefits to the environment from reducing traffic congestion, vehicle miles traveled, and possibly even vehicle lanes needed surely justify more effort in this area. From a community development standpoint, you're going to have



many more conversations on a bicycle than in your vehicle. The slower pace makes noticing and interacting with the built environment, in both its positive and negative aspects, much easier. So, let's figure out bicycle sharing in the denser parts of our communities.

