Introduction
On May 16 and 17, 2016, the University of Minnesota hosted the Symposium on the Sharing Economy to explore the emerging trend of shared use and consumption via peer-to-peer online platforms. The consequences of this trend for the transportation sector are many, potentially affecting everything from car ownership to road congestion to investments in infrastructure and public transit.

The two-day symposium brought together practitioners, entrepreneurs, government representatives, and other leading thinkers from across the globe. The event featured a daylong public forum on shared mobility with participation from industry, government agencies, and non-profit organizations. In addition, the symposium included a workshop for researchers with backgrounds in economics, operations, information systems, transportation science, industrial ecology, and public policy. This document summarizes the presentations and panel discussions from the public forum.

The symposium was organized by the University of Minnesota Initiative on the Sharing Economy and sponsored by the Center for Transportation Studies (CTS) and the Department of Industrial and Systems Engineering at the University of Minnesota.

The Initiative on the Sharing Economy was established by CTS in partnership with Saif Benjaafar, Distinguished McKnight University Professor in the Department of Industrial and Systems Engineering at the University of Minnesota.

Presentations
The Promise and Perils of Collaborative Consumption
Saif Benjaafar, Distinguished McKnight Professor, University of Minnesota, and Director, Initiative on the Sharing Economy

Governance Models for Public-Private Partnership
Bill Dossett, Executive Director, Nice Ride

Living, Working, and Moving in the Sharing Economy
Tom Fisher, Director, Metropolitan Design Center, College of Design, University of Minnesota

Panel Discussions
The Sharing Economy and the Future of Mobility
Moderator: John Eddy, Principal, Arup
Participants:
- Megan Hansen, HOURCAR Program Manager, Neighborhood Energy Connection
- Brian Harvey, Market Manager, Zipcar
- Bill Dossett, Executive Director, Nice Ride
- David King, Assistant Professor, Urban Planning, Graduate School of Architecture, Planning and Preservation, Columbia University

Can the Sharing Economy be Regulated?
Moderator: Tom Fisher, University of Minnesota
Participants:
- Ulrik Binzer, Founder & CEO, Host Compliance LLC
- David Levinson, Professor, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota
- Kjersti Monson, Director, Long Range Planning, Community Planning & Economic Development, City of Minneapolis
- Colin Murphy, Researcher, Shared-Use Mobility Center

sharingeconomy.umn.edu
The Promise and Perils of Collaborative Consumption

A typical car sits unused for more than 95 percent of its useful life. Cars are just one of many things—from meeting spaces to power tools—that are privately owned but barely used.

Unlocking this excess capacity is the essential idea of the sharing economy, said Professor Saif Benjaafar, director of the University of Minnesota Initiative on the Sharing Economy and chair of the symposium. “The sharing economy is a growing trend away from the exclusive ownership and consumption of resources to one of shared use and consumption,” Benjaafar said. “It’s greatly facilitated by online platforms such as Uber and Airbnb that reduce search and transaction costs, handle payment, and weed out bad actors.”

The sharing economy is also part of a phenomenon in which firms are shifting from selling things to selling the functionality of these things—mobility instead of cars, or power instead of engines. Ford, for example, recently launched a smartphone app that helps users find parking or share vehicles. “The pilot car-sharing program allows owners of Ford-financed cars to rent them out and put the income toward their car payments,” he said.

Many other firms and people see the promise of the sharing economy. The explosion of online platforms—Uber, Lyft, Airbnb, JustPark, Liquid-Space—in the past few years points to growing opportunities for business innovation and entrepreneurship. Individuals can earn flexible income from underused assets, and consumers can gain access to expensive things they may otherwise prefer not to own. Advocates also believe the sharing economy will improve sustainability by reducing the numbers of cars and parking spaces and lowering emissions and congestion.

But there’s also a potential dark side. “There are mounting concerns the sharing economy could lead to more consumption rather than less,” Benjaafar said, citing his recent research indicating that peer-to-peer sharing can lead to lower—or higher—ownership and usage, depending on the product’s cost. “People on the cusp of buying something expensive may make the purchase if they can rely on rental income as a subsidy,” he said.

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— Saif Benjaafar

Experts share research, identify future needs at symposium workshop

The Symposium on the Sharing Economy began with a daylong workshop prior to the public forum that brought together researchers from around the globe to discuss their work, foster collaboration, and identify future research needs.

Several faculty from the U of M’s Initiative on the Sharing Economy gave presentations. For example, Professor Ravi Bapna (Carlson School of Management) described how social media measures such as shared wall posts can be used to predict trust among users. “The issue of trust is critical,” he said. “It’s a glue that enables the ideals of the sharing economy to come together.”

Other topics included market growth potential, labor welfare, package delivery, and land-use implications.

The symposium was one of the initiative’s first activities. Launched in 2015, the Initiative aims to position the University of Minnesota at the forefront of the development of a science of the sharing economy.

Selected presentation slides and papers from the workshop are at sharingeconomy.umn.edu.
Some forecasts predict higher vehicle-miles traveled due in part to the young and old having greater accessibility. And New York City officials are questioning if the rise of Uber and other app-based car-sharing services—and the resulting cars circling streets and making stops—caused a 9 percent decrease in average speeds in the city center between 2010 and 2014.

Other concerns are that the sharing economy competes unfairly against existing businesses, such as regulated cab companies, and leads to a “gig” economy that puts downward pressure on wages and shifts corporate risk to individuals.

So what are the actual perils and promise? “Things may not go according to what advocates on either side tell us,” Benjaafar said. “Our initiative will provide objective analysis.”

The growing team behind the sharing-economy initiative includes researchers from multiple U of M departments plus partners at the Singapore University of Technology and Design.

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Uber: 157,143 rides per day

Lyft: 66,666 rides per day
Bill Dossett envisions a ride-sharing system in which all ride requests would be funneled to one location. Then, both public providers—like bus operators—and private operators—like Uber—could bid for the ride. Or, two or more providers might band together to fulfill individual legs of a customer’s trip request.

By bidding for shared rides, both public and private transportation operators would have the incentive to keep prices low and serve all areas of a city, he said.

According to Dossett, executive director of the bike-sharing rental company Nice Ride Minnesota, a public-private partnership could control and pool requests for shared-ride vehicles. The Minneapolis Downtown Improvement District (MDID), a special services district, could serve as the partnership example.

MDID is a nonprofit overseen by a board of directors and funded by commercial property owners within district boundaries. Property owners share ways to make the downtown district a competitive business area. Those methods include ensuring the area is well maintained and accessible.

Dossett proposed that a similar neutral body, comprised of a public-private partnership, could oversee a ride-share bidding site. Taking a page from MDID, shared-ride and mass-transit providers would be able to influence, but not control, the board of directors.

“The proposal we’ve talked about is a clearinghouse where millions of real-time trip requests come to a central location,” he said. “Operators can bid on the best solution for the passenger. That might be intermodal, so a smaller vehicle would go from your home and pick up two or three others on your block to get you to a bus that goes downtown.”

Such a partnership could set incentives for operators to serve underserved areas. In addition, the partnership would need to set privacy standards to protect customer information. Customers would determine the operators that bid for their trips, and only those operators would have access to customer information.

Partnership participants also would need to keep abreast of technology changes and to update hardware and software often. “The technology changes fast and you have to stay connected to developments and upgrades,” he said.

Dossett emphasized that now is the time to look at how best to structure such a partnership, before shared-ride databases become common tools and shared-ride systems take off.

“A lot of things are powerful about public-private partnerships, but it really matters how you put them together,” he said. “The question isn’t how we regulate a changing economy with existing tools and governmental structures—it’s ‘How do we seize this opportunity and optimize our tools for a seismic shift in the way we get around? What’s the best governmental model for this?’”

“The question isn’t how we regulate a changing economy with existing tools and governmental structures—it’s ‘How do we seize this opportunity and optimize our tools for a seismic shift in the way we get around?’” — Bill Dossett
The Sharing Economy: Living, Working, and Moving

Professor Tom Fisher, director of the Metropolitan Design Center in the U of M College of Design, has examined the deeper reasons why the sharing economy appeals to so many people—and what the transformation may mean for each of us.

“The sharing economy will wring out the excess production and overcapacity we inherited from the twentieth century mass production economy,” Fisher said. “Companies like Uber and Lyft recognize that too many seats in cars are driven around empty, and they offered those available seats to riders and provided a money-making opportunity to car owners.”

And that economy is already upon us—witness Airbnb’s popularity—or poised for the future, with the promise of shared, autonomous vehicles that can be called directly to a home. The shared economy will pick up speed as vendors develop more technologies to allow consumers, educators, manufacturers, and others to find each other and to collaborate, Fisher said.

“But skeptics label the shift impractical, utopian, and far off, but data show it’s not confined to millennials, and it’s happening now,” he said. “The speed with which it’s emerging is remarkable.”

Businesses that emphasize collaboration are becoming successful because this method of pooling resources harkens back to the way humans lived—in close community with shared resources—for many years, before the Industrial Revolution and the rise of mechanization and mass production.

“The sharing economy resonates in ways that are very deeply embedded in our subconscious,” Fisher said. “Ninety percent of human history was spent in small tribal groups. The sharing economy is a reinvention of capitalism and a return to a village economy—a high-tech version of the one in which humans evolved. And it’s almost irresistible.”

Global villages—connected in an instant through technology—may become the way people identify and organize themselves, he said.

In light of these changes, which include rapid urbanization, Fisher believes city residents will drive less than they do currently and that commuting patterns will change. “Our autocentric way of moving was quite reasonable in response to a mass-production, mass-consumption economy,” Fisher said. “The sharing economy moves in the opposite direction.”

Eight years ago, vehicle-miles traveled in the United States steadily began dropping for the first time in 50 years. The decline may be due, in part, to people living closer to work or to mass-transit options, working from home, and taking advantage of growing bike-friendly-street initiatives.

The nature of future jobs will change as well. For instance, long- and short-haul truck drivers may find themselves put out of work by driverless trucks, Fisher said.

Every economic shift has its downsides as well as its upsides, he added. While those downsides and upsides remain to be seen, the sharing economy is filled with new opportunities. “How quickly we can overcome fear of the new economy and help people see opportunities and not resist it will be the challenge for the next decade,” he said.

“Our autocentric way of moving was quite reasonable in response to a mass-production, mass-consumption economy. The shared economy moves in the opposite direction.”

— Tom Fisher
The Sharing Economy and the Future of Mobility

While autonomous vehicles will be a big part of the not-too-distant future of transportation, they’re only one part of the equation. Americans will soon have access to multiple, shared transportation options that go well beyond the self-owned automobile.

That’s the message of a panel of experts, including representatives from shared biking and automobile firms, who spoke at the symposium about the impact the sharing economy will have on the future of mobility.

Multiple modes of transportation are needed to replace the automobile, said David King, assistant professor of urban planning at Columbia University. "If the public focuses only on bike share or car share or mass transit, they’re missing the message," he said. "You don’t replace automobiles with transit, you replace driving with all these other modes. This is a dramatic shift in how we think about transportation."

While these options depend on each other to ferry users to their final destination, Megan Hansen, HOURCAR program manager, cautioned that ride-share owners need to be sure their services reach underserved areas, such as the 80 percent of St. Paul that isn’t served by shared-ride car service.

For the broadest reach, car- and bike-sharing options must collaborate and even partner with each other and with mass transit as well as with the autonomous vehicles of the future. This will allow shared-ride firms to “reach the places we want to and need to reach,” Hansen said.

Leaders should plan for how users access and pay for future shared-transit options, King said. Right now, users need a credit card to pay for many shared ride services. Yet many immigrants and low-income residents lack one.

Panel moderator John Eddy, a principal with Arup, suggested incentives and credits to businesses that allow access without credit cards and provide services to underserved neighborhoods and areas.

“People have created remarkable business models that are challenging your organizations, and you can wait for that challenge to take root or you can decide to create new opportunities as a result of that challenge,” Eddy told local government leaders.

With shared transportation options also comes the need for technology that tracks vehicles and bicycles and allows users to locate automobiles near them, view bus and train arrival times, and call for and purchase transit options, said Bill Dossett, executive director of Nice Ride Minnesota, a bicycle-sharing service.

“Cities that will see the most benefit from new mobility are the cities that show leadership on it.”

— Brian Harvey

Dossett proposed that local governments create a role for a director of innovation to cope with rapidly changing technologies. That person would leverage user and trip data to further improve transportation options.

Panelists also addressed how cities will look with autonomous vehicles and transit-sharing options. Suburban living will become less desirable as transportation-sharing options grow primarily within urban areas with greater population density, King said.

One area future residents aren’t likely to look back on fondly: the parking lot. Even single parking lanes along city curbs are likely to vanish, said Zipcar marketing manager Brian Harvey. Those spots will no longer be needed by cars that shuttle riders back and forth all day, though some parking will likely be held in reserve for autonomous vehicles.

Unfortunately, Harvey added, loss of parking means loss of parking revenues. But cities will find another way to those recoup funds.

“Cities that will see the most benefit from new mobility are the cities that show leadership on it,” he said. “It takes guts to say ‘No, we’re taking away parking because having a parking spot here is not the best thing, overall, for the city.’"
Regulating the Sharing Economy: How and How Much?

Local, state, and federal governments should regulate at least some aspects of the sharing economy. And the businesses that are part of it, such as Airbnb and Uber, should provide governments with some of their operating data. That was the consensus of a second panel of experts who spoke during the symposium.

At the same time, regulation must not stifle the technological and economical innovations the sharing economy can bring, said David Levinson, professor in the University of Minnesota Department of Civil, Environmental, and Geo-Engineering.

Panel participants agreed that the question of how to best regulate businesses in the sharing economy is still very much up in the air, especially because these businesses differ from one another in the services they provide.

While these questions play out, the city of Minneapolis is in an “observe and research mode” before deciding how to best monitor and control that economy, said Kjersti Monson, director of long range planning, community planning, and economy development for the city.

“There’s economic value being created that wouldn’t be there otherwise, and that’s a business and economic development benefit for the city,” she said. “But coping with fiscal sustainability and the public interests moving forward in this type of economy—that’s a big question mark.”

Though data is lacking on how the sharing economy affects neighborhoods, residents, and competing traditional businesses such as hotels and taxis, research shows that short-term rentals can affect the availability of low-income housing, said Ulrik Binzer, chief executive officer of Host Compliance LLC, which offers short-term rental compliance and monitoring for local governments.

“If everyone on the block is doing short-term rental, it changes the neighborhood characteristics—neighbors can be disproportionately affected,” he said.

Loss of city taxes is also an issue. Cities use money from lodging-industry taxes to promote the city to tourists. But Binzer pointed out that short-term rental businesses could benefit from such promotion while not being taxed. “A lot of cities rely on a transit occupancy tax from the traditional hotel lodging industry,” he said, “and short-term rentals don’t pay that.”

Companies that are part of the sharing economy should be required to share some of their data with local, state, and federal governments, though currently many resist that, claiming their technologies that collect and store data make that information proprietary, Levinson said.

Colin Murphy, a researcher at the shared-use mobility center, called for development of a standard method that companies would follow to report and share data. “Without a standard, it’s hard to put together a picture of what’s going on over time and geography,” he said.

Data sharing also would allow researchers to “come up with objective analysis that tells us what we should be doing,” Binzer said.

Meanwhile, the federal government hasn’t moved forward on the regulation issue and can’t provide much direction, observed session moderator Tom Fisher.

Levinson cautioned governments against regulating companies out of existence in a misguided effort to keep them from competing with existing companies within the traditional economy.

While the sharing economy is still untested, Binzer thinks companies and citizens could take a black-and-white attitude toward regulation, depending on how they’re affected. But those viewpoints will likely meet in the middle as the shared economy becomes the norm.

“The state and local and federal leaders have to be an objective party so we don’t end up with something extreme on either end,” he said. “It’s early days in the sharing economy, but over the next 10 years, a consensus on regulation will gravitate toward the middle that will work for 90 percent of the people.”