Rethinking Cities in the Age of Urbanization

How might we be seen as global leaders in new ideas to make our own cities more efficient, our infrastructure more effective, and our communities more livable, more inclusive, and more environmentally responsible?

Can we position ourselves to contribute creative solutions to a range of unprecedented urban needs and actively participate in the global market for more livable and sustainable cities?

James McKellar, Director
Brookfield Centre in Real Estate and Infrastructure
Schulich School of Business, York University
What is a city?

City is the absence of physical space between people and companies. The city is proximity, density, closeness.  

_Edward Glaeser, Triumph of the City. 2011._

Cities enable us to work and play together, and their success depends on the demand for physical connection to move people, things, and services.

City is a gateway between markets and cultures.
Cities matter.

By 2030, consumers in large cities will account for 81 percent of global consumption and generate 91 percent of global consumption growth from 2015 to 2030.

Global urban consumption is extraordinarily concentrated—just 32 cities are likely to generate one-quarter of the $23 trillion in urban consumption growth projected from 2015 to 2030, and 100 cities will be responsible for 45 percent of that growth.

McKinsey Global Institute

2X Increase in average per capita consumption by China’s working age consumers 2015–30
Cities are driving global consumption

By 2025, cities in China will add 325 million more people, including about 230 million migrants - urban population will reach 926 million by 2025 and top 1 billion by 2030 (McKinsey Global Institute)

325,000,000
6,000,000

Equivalent of 54 new cities each the size of the GTA in the period 2010-2025
How many Earths needed to sustain current consumption?

<table>
<thead>
<tr>
<th>Country</th>
<th>Available Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Sustainable: 1.0</td>
</tr>
<tr>
<td></td>
<td>Unsustainable: 2.9</td>
</tr>
<tr>
<td>USA</td>
<td>Sustainable: 1.0</td>
</tr>
<tr>
<td></td>
<td>Unsustainable: 4.8</td>
</tr>
<tr>
<td>India</td>
<td>Sustainable: 0.7</td>
</tr>
</tbody>
</table>

Source: Global Footprint Network National Footprint Accounts 2016 Edition
The reason for the density disparity? Manhattan’s population peaked in 1910 at over 2 million, and has since fallen to 1.6 million.

The decline in density was caused by an influx of commercialized buildings and bigger apartments. In 1910, a large portion of Manhattan residents lived in tiny tenements, with the working class crowded into apartments, squeezing many into a room.

Many residential areas were later overtaken for commercial use (a trend that is now reversing itself) and the tenants pushed out into other areas.

Source: Based on census data in National Historical Geographic Information System (2012).

Manhattan’s changing census densities, from 1910 to 2010 (Shlomo Angel, Planet of Cities, Fig 3.3)
Look Familiar?

Beijing, 2013

Los Angeles 2013
Living closer to the workplace allows for greater disposable income to improve quality of life. In fact, living in a location where only one car per home is needed can reduce total housing and transportation costs to 50% of income or less.
The mobility challenge

- 86% of fuel never reaches the wheels

- The typical American car spends ~96% of its time parked

- An American road reaches peak throughput only 5% of the time—even then, it is only 10% covered with cars

World’s largest traffic jam (24 hours), Delhi-Gurgaon Highway, India, July 29, 2016
More Things
What are the opportunities?

- Make big cities better place to live at substantially increased densities – first go up and then out
- Pursue strategies for inclusive, affordable urbanization that provides a cross section of social, economic and environmental benefits for all residents – make cities affordable for all
- Solve the mobility challenge with new models of transportation that can ensure efficient movement of people, goods and services – reduce traffic congestion
- Replace obsolete models of infrastructure that are no longer sustainable in a resource constrained world – move beyond 18th and 19th century technologies
- Focusing on ways that industry can intelligently meet the demand for more livable and sustainable communities, using new technologies and new business models – dispense with the soli mentality
- Make the city itself a renewable resource addressing the production of food and energy and the efficient use of water
Smart mobility

Reducing congestion and fostering faster, greener, and cheaper transportation options

- Real time ride share
- Bike commuting
- Carsharing
- On-demand ride service

Deloitte Consulting LLP
An integrated perspective on the future of mobility
McKinsey, October 2016

A number of social, economic, and technological trends will work together to disrupt mobility, potentially creating three new urban models by 2030.

We envision three mobility trajectories, with trends such as sharing, autonomous driving, and electrification all moving forward at a different pace. Each is suited to a specific type of metropolitan area, whether it be a dense developed city, a suburban sprawl, or an emerging metropolis.

- Clean and Shared
- Private Autonomy
- Seamless Mobility
User Pays: Stockholm, Sweden

In 2006, Stockholm gambled on a full-scale congestion pricing trial to reduce traffic, increase accessibility, and improve the environment.

Variable fee ($1.50-$3.00) during weekday rush hours

Strong opposition from all sectors – trial set up and then briefly revoked to drive home the benefits. Shortly thereafter, widespread support, through a referendum, made it permanent.

Uses recognition technology and achieves a 96 percent compliance rate.

City reinvests a significant portion of the revenues raised in public transportation.

Congestion fell by 20-25% during the trial period; air quality improved within a year, and the initial investment was recouped in less than 4 years.

Net Present Value of the scheme is an estimated $1.3 billion annually with a benefit-to-cost-ratio of 4:1.
Travel door-to-door quickly using an app that mixes and matches a variety of public and private means of transportation and pay the trip with your smart phone.
Autonomous Vehicles

At the annual Moreeb Dune Festival in the Liwa desert in the United Arab Emirates, tiny robots fill in for human jockeys in a camel race. The nine-day event celebrating Arabian culture features a mix of 21st-century technologies. Trainers remotely control the robots, which weigh just a few pounds each, as they use a whip to push their camels faster.

MIT Technology Review. March/April 2017
The broad territory of the sharing paradigm

<table>
<thead>
<tr>
<th></th>
<th>Things</th>
<th>Services</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Swapping, bartering, gifting</td>
<td>Ridesharing, couch-surfing</td>
<td>Skill sharing</td>
</tr>
<tr>
<td>Collective</td>
<td>Car clubs, tool-banks, fab-labs</td>
<td>Childcare, credit unions, time banks, crowd-funding</td>
<td>Sports clubs, social media, open-source software</td>
</tr>
<tr>
<td>Public</td>
<td>Libraries, free-cycling</td>
<td>Health services, public transit</td>
<td>Politics, public space</td>
</tr>
</tbody>
</table>

*SHARING CITIES: A CASE FOR TRULY SMART AND SUSTAINABLE CITIES* by Duncan McLaren and Julian Agyeman.
## Key dimensions of the sharing paradigm

<table>
<thead>
<tr>
<th>Communal sharing (intrinsically motivated)</th>
<th>“Peer-to-peer” sharing, enabled by not-for-profits, such as Freecycle or Peerby</th>
<th>The “collective commons” including public space and public services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial sharing (extrinsically motivated)</td>
<td>The “sharing economy” of Airbnb, Task Rabbit, and Zipcar</td>
<td>The “collective economy” of co-production and open sourcing in business</td>
</tr>
</tbody>
</table>

*SHARING CITIES: A CASE FOR TRULY SMART AND SUSTAINABLE CITIES* by Duncan McLaren and Julian Agyeman.

[https://www.peerby.com/Peerby](https://www.peerby.com/Peerby) Enables you to borrow the things you need from people in your neighborhood, for free.

[https://www.freecycle.org/](https://www.freecycle.org/) The Freecycle Network is a grassroots and entirely nonprofit movement of people who are giving (and getting) stuff for free in their own towns. It’s all about reuse.

[https://www.taskrabbit.com/](https://www.taskrabbit.com/) Live smarter by outsourcing household errands and skilled tasks to trusted people in your community.
Sharing in Seoul, Korea, (‘Jeong’)

- **Kozaza** and **Lobo Korea** - home stay platforms
- **Woozoo**, a company that transforms older homes into shared accommodation
- **Wonderland** and **Billi** – sharing of underutilized goods
- **SOCAR** – car sharing service
- **Kiple** – clothing exchange for children
- **Open Closet** – suit sharing for job seekers
- **Living and Art Creative Center** – wiring and art education service
- **Zipbob** – meal sharing platform

What does this all mean?

Can we see the future from here?