SUPPLY CHAIN MANAGEMENT AND THE SHARING ECONOMY

Alex Polacco
St. Cloud State University, apolacco@stcloudstate.edu

Follow this and additional works at: http://aisel.aisnet.org/pacis2016

Recommended Citation
http://aisel.aisnet.org/pacis2016/102

This material is brought to you by the Pacific Asia Conference on Information Systems (PACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in PACIS 2016 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
SUPPLY CHAIN MANAGEMENT AND THE SHARING ECONOMY

Alex Polacco, Department of Management, St. Cloud State University, St Cloud, Minnesota, U.S.A., apolacco@stcloudstate.edu

Abstract

Mobile-internet enabled information and communications processes allow people to share their assets in what is termed the Sharing Economy. Entrepreneurs are reaping huge financial gains but many challenges remain. Many would contend that a business concept such as Supply Chain Management does not exactly fit the definition of the sharing economy. The writer argues that Sharing Economy businesses are mini-supply chains. We should focus more on the communications aspect of demand in supply chains and technology solutions, rather than on a particular application or definition of the sharing economy. Possibilities are endless if we apply supply chain management and sharing concepts to opportunities in the economic, social, and environmental aspects of society.

Keywords: Sharing Economy, Supply Chain Management, Enterprise Resource Planning (ERP), Collaborative Planning Forecasting and Replenishment (CPFR), Supplier Relationship Management (SRM), Customer Relationship Management (CRM)
1 SUPPLY CHAIN MANAGEMENT AND THE SHARING ECONOMY

1.1 Introduction

The sharing economy is characterized by the sharing of assets among people and facilitated through the use of the internet and mobile applications. Uber, Airbnb, and other internet-enabled mobile-accessed businesses are conducting billions of dollars of business a year and serving hundreds of thousands of sharing customers. Americans made more than $3.5 billion in 2015 by renting or sharing assets and unused items (The Data Story Show, 2016). Uber, a private car ride-sharing enabling company is a $50 billion business; and Airbnb a room or house-sharing enabling company, has 2 million listings in 192 countries, 60 million users, and is valued at more than $25 billion (Smith, 2016). Other companies of the sharing economy are TaskRabbit, SHYP, Door Dash, Instacart, Lyft, Postmates, Washio, GrubHub, and others.

EBay pioneered the use of the internet to bring buyers and sellers together in a virtual marketplace in the mid-1990s. Amazon and others followed. Alibaba, a Chinese e-commerce company has grown steadily and had revenues of $12 billion, compared with E-bay’s $8.6 billion in 2015; and Amazon had revenues of $107 billion in 2015 (The Data Story Show, 2016). In its extra-electronic forms, the sharing economy has existed in ride-sharing, car-pooling, cooperatives, bartering, bazaars and flea-markets. Some might argue that e-commerce is not strictly sharing, yet sellers would also argue that they are sharing their unused or excess items with others.

According to the Data Story Show (2015), drivers of the sharing economy are: (1) new and innovative technology, (2) values that embrace humanness, inter-connectedness, and openness; (3) economic realities; and (4) environmental pressures. Sharing reduces resource consumption, and increases access to resources. New and innovative technology in the form of mobile apps and IoT are key drivers of the sharing economy. Sharing is a social value in itself and many people are motivated by the principle of sharing their assets with others. Economic realities may also force people to share (Logan, 2015). Many people buy used goods, share rides, seek bed-and-breakfasts, and participate in sharing due to economic need. Sustainability, conformance to environmental regulations, and social pressure may induce others to reduce, reuse, recycle…and share.

Supply Chain Management can be defined as the management of the forward and reverse flows of products, services, information, finances, and returns/rejects from end suppliers to end customers. It involves planning, execution, and control of processes that add value and satisfy the customer. Customers today demand high quality products and services, short order lead times, on time deliveries, flexibility, reliability, safety, and low cost. Key customer information in terms of needs, expectations, requirements, and preferences drive the processes, and are deployed throughout successive links in the chain. Collaboration, communication, and cooperation are essential to attainment of customer satisfaction. Appropriate technology, especially in communications and sharing of information, integrates and facilitates the processes.

Many would contend that a business concept such as Supply Chain Management does not exactly fit the definition of the sharing economy. Sharing economy transactions are mini-supply chains, and identification of customer demand, technology, and information sharing are critical to a business. Supply Chain technology systems solutions might find application in sharing economy businesses and vice versa.

2 THE SHARING ECONOMY

2.1 Current Trends and Challenges

According to The Data Story Show (Jan 21, 2016) Americans made more than $3.5 billion by renting or sharing assets and unused items in 2015. Sharing reduces resource consumption, and
increases access to resources. The quality of information and customer-satisfaction on the site are critical.

The purpose and goals and objectives of the marketers should be determined and content should be matched to the needs of the market segment. Technology and algorithms must be taken into account and how the message of the content will be translated into what is coherent and meaningful to the user. The presenters on The Data Story Show discussed the need for continuous study of the marketplace and segments and individuals within it. Preferences, needs and expectations change over time and current content, technology, and solutions may become obsolete.

Logan (2015) in her Nailed It program said that the sharing economy makes armies of workers instantly available for work which can be good for employers and the unemployed. Sharing economy workers are not employees but are independent contractors and must pay self-employment taxes and insurance, and save for retirement. Hospitals are currently staffed with contingent workers, and colleges are staffed with adjunct teachers.

The sharing-economy is also called the Gig-economy, because it is considered a “gig” for the under-employed and unemployed (Logan, 2015). Although workers do not have to wait in lines for employment or wait for the phone to ring; they have no labor protections such as unemployment insurance, life insurance, and no retirement benefits. Workers benefit as long as there is demand for workers; but it could be catastrophic when there is little or no demand for them, and there is no safety net or unemployment insurance.

Logan said that a new social contract is needed to address the lack of a safety net with sharing economy workers. In a bad economy, the sharing-economy service helps people to find work. In a good economy, employers hold the upper hand and can use the instant supply factor to leverage the worker to accept lower wages.

American warehouses are also filled with contingent workers. Over 12 million workers got jobs through staffing agencies in 2015, and by 2020, 40 percent of the American workforce could be contingent workers (Logan, 2015). Sharing-economy businesses argue that the large number of contingent workers is indicative of their preference for independence, setting their own work-hours, and earning more money than a regular job. In the next section we will explore some sharing economy businesses.

2.1.1 Uber

Uber is a $62.5 billion (2015 figures) ride-sharing, mobile-phone app business that has a presence in many countries of the world (Newcomer, 2015). Smartphone users access the Uber application and provide a trip-request which is then routed to a Uber driver who makes contact and provides the ride. Uber drivers are considered independent contractors who are not licensed as cab drivers, must carry their own insurance, and pay self-employment taxes. Drivers must be of legal age to drive, in good health, able to drive, and must pass a background check. They must possess a smartphone and a vehicle or both may be leased through Uber arrangements (Huet, 2014).

<table>
<thead>
<tr>
<th>Numbers</th>
<th>Validity month/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uber Users worldwide</td>
<td>8 million</td>
</tr>
<tr>
<td>Uber Drivers worldwide</td>
<td>160,000</td>
</tr>
<tr>
<td>Average number of new drivers monthly</td>
<td>50,000</td>
</tr>
<tr>
<td>Trips taken worldwide</td>
<td>1 billion</td>
</tr>
<tr>
<td>Number of cities worldwide Uber is in</td>
<td>400</td>
</tr>
<tr>
<td>Number of countries Uber is in</td>
<td>70</td>
</tr>
<tr>
<td>Number of Uber rides in China</td>
<td>1 million/day</td>
</tr>
<tr>
<td>Number of cities Uber is in China</td>
<td>100 cities</td>
</tr>
<tr>
<td>Number of rides a month in Taiwan</td>
<td>100,000</td>
</tr>
<tr>
<td>Number of drivers in Taiwan</td>
<td>1000</td>
</tr>
</tbody>
</table>

Table 1: Uber Statistics according to Smith (2016)
Uber started up UberGarage in 2012; and UberFRESH (online food ordering), UberRush (courier package delivery service), and UberEssentials (an online ordering service) in 2014. In August 2015, Uber started up UberPool (car-pooling app service) in the San Francisco Bay area and New York City (Lien, 2015), and UberBoat a water-taxi service in Istanbul, Turkey. In late 2015 Uber partnered with GPS company TomTom to add maps and traffic data for Uber driver apps in more than 300 cities (Bloomberg, 2015). D’Onfro (2016) reported that a Uber taxi driver made $90,000 in commissions in six months.

Some governments and taxi companies claim that Uber’s use of unlicensed “taxi drivers” is illegal and unsafe. Taxi drivers say that it conducts unfair competition because it does not pay taxes or licensing fees like them. In 2014-15 taxi-drivers in Germany, India, Madrid, Paris, London, Denmark, Colombia conducted large scale protests. Lawsuits have been filed against Uber drivers for unsafe driving accidents. Drivers must have personal insurance and cannot take tips. Howard (2016) said that Uber has been sued for “employee benefits and customer safety”.

Data security has been an issue of concern with Uber in 2014-15. In mid-2014, Uber’s data systems were breached and the names and license plate information on 50,000 drivers was revealed (Guess, 2015). Although the leak was discovered in 2014, the company did not notify the drivers until five months later (Tassi, 2015). The full extent of the compromised information is unknown, but the implications of secondary information that could have been accessed with the primary information might be considerable.

There have also been concerns about the safety of the 15-second notification process Uber uses to alert their drivers about new pick-up requests from customers (Richtel, 2014). According to Cook (2014), the process poses a distraction to the driver and a potential safety hazard, but Uber has disclaimed any potential threat, stating that the driver is not distracted (Richtel, 2014). No data is available about traffic accidents caused by drivers who were distracted by the notification process. Uber’s driver vetting or approval process has been often criticized as being too lax (Durbin, 2016).

Uber has faced objections and fines over its controversial practices in Taiwan. More than 1000 drivers provided over 100,000 rides per month in mid-2015. Kastner (2015) reported that up to January 2015, Uber had been fined 133 times for a total of NT$16.5 million (US$522,000) for violation of the Highway Act and Automobile Transportation Management Regulations. Uber drivers had been fined NT$6.6 million (US$209,000) for not having commercial drivers’ licenses (Kastner, 2015).

2.1.2 Airbnb

Airbnb was founded in 2008 and currently has 2 million listings in 192 countries, and is valued at more than $25 billion (Smith, 2016). Travel business today is estimated at $310 billion. The company has expanded internationally since 2011 to cities such as Hamburg, London, Paris, Milan, Barcelona, Copenhagen, Moscow, Sao Paolo, Berlin, Australia, Thailand, Indonesia, Singapore, and in 2015 to Cuba (Airbnb/locations). 75% of Airbnb’s business is from outside of the United States. The table below shows some of Airbnb statistics.

<table>
<thead>
<tr>
<th>Numbers</th>
<th>Validity month/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb total valuation</td>
<td>$25 billion</td>
</tr>
<tr>
<td>Airbnb estimated income for 2015</td>
<td>$900 million</td>
</tr>
<tr>
<td>Number of users</td>
<td>60 million</td>
</tr>
<tr>
<td>Number of bookings in summer 2015</td>
<td>17 million</td>
</tr>
<tr>
<td>Number of hosts</td>
<td>640,000</td>
</tr>
<tr>
<td>Average amount a host earns annually</td>
<td>$7,350</td>
</tr>
<tr>
<td>Number of listings</td>
<td>2 million</td>
</tr>
<tr>
<td>Number of cities that Airbnb is active in</td>
<td>57,000</td>
</tr>
<tr>
<td>Number of countries that Airbnb is active in</td>
<td>192</td>
</tr>
</tbody>
</table>

Table 2. Airbnb Statistics according to Smith (2016)
Airbnb conducts its business through its website and through mobile apps accessible through Apple and Android phones. Users are required to set up a profile that includes other-users’ recommendations, guest reviews, and response ratings (Yu, 2012). Pricing is determined entirely by the user who also provides a description of the property, rules, and other requirements, and pictures that are promotional. Guests contact the user directly and come to an agreement regarding time of arrival and departure. The reservation must be formally accepted by the user on the site, after which they make arrangements with the guest to exchange keys, etc. After the rental has been completed, both user and guest leave reviews which serve as a baseline for references in future business (Wagle, 2013).

Airbnb uses user-profile recommendations, reviews, and ratings to build a reputation for quality and security. Users are also required to provide a verified ID at the time of making a reservation. Users may communicate among themselves via the site’s private messaging system, prior to making a reservation. Hosts have the option of accepting or rejecting a reservation request. The website has a security protocol that ensures secure payment transactions that include a deposit and cleaning fees. The deposit is refunded when the host affirms that the place is clean and undamaged (Wagle, 2013).

The company’s platform enables hosts to connect with and rent their rooms to travelers. Airbnb does not own any rentals; but rather facilitates the sharing process. Airbnb gets its revenue stream from two sources: Service fees from bookings range from 6% to 12% of the price of the booking (Bly, 2012), and the host is charged another 3% of the price of the booking for processing a credit card (Couts, 2012). Facilitating technology and applications match supply and demand, and the marketplace enables and controls the quality of the evolutionary process.

The old model of regulation by zoning laws and inspections is not feasible in current times due to the volume of rental units transacted by Airbnb. Airbnb will pay a 6 percent hotel tax on properties rented for less than 30 days, and will provide damage-insurance protection to property-owners. Howard (2016) reported that following restrictions placed on rentals in San Francisco, Airbnb released a compact vowing to comply with community and government regulations concerning short term rentals.

In addition to the financial benefit, Airbnb customers have gleaned a social benefit during the continuing recession of 2008. People in danger of being foreclosed and losing their homes due to the downturn in the economy found relief by subletting rooms in their homes through Airbnb (Levy, 2011). Non-homeowners may generate a stream of income by renting out their apartments or units to other renters, but there may be legal implications to contend with as some landlord-renter contracts may expressly forbid sub-leasing. Wealthy homeowners are using Airbnb to rent out their second or summer homes, estates, or condominiums (Grout, 2013).

Beyond damage and destruction, there are other issues such as: local ordinances, taxes, privacy, sub-letting agreements, quality, and responsibility of the renter (Business Insider, 2015; Carcasole, 2015). There have been cases since 2011 about vandalism, sex parties, and robberies committed by the guests (CBC, 2015; Kronos4, 2016). Hosts have complained about Airbnb’s lack of response and denial of responsibility (The New York Times, 2014; Arrington, 2011; Romero, 2011), after which Airbnb implemented a 24 hour hotline, a taskforce, and other security measures to alleviate customer concerns (Parr, 2011).

2.1.3 Other Sharing Economy businesses

In the mid-1990s, EBay pioneered the use of the internet to bring buyers and sellers together in a virtual marketplace and facilitate the exchange process without itself investing in inventory. Amazon, UBid, and many other sites developed similar services. Alibaba, a Chinese e-commerce company has grown steadily and had revenues of $12 billion in 2015, in comparison with E-bay’s $8.6 billion in 2015. Amazon’s revenues were $107 billion in 2015 (The Data Story Show, 2016).
Other companies in the sharing economy are: Shyp (courier service), a company that picks up or returns packages and ships them through major carriers; Door Dash (food delivery), Instacart (grocery delivery service), Lyft (ride-sharing), Postmates (retailer courier service), GrubHub (restaurant food delivery service), Zillow (real estate), SpoonRocket (food services), Homejoy (house cleaning), TaskRabbit (errands), Bloom (flower delivery), and Washio (laundry services).

FoxNews Latino (2015) reported that Smartphone applications such as Apple’s ResearchKit, allow medical researchers to collect real-time data from patients on such topics as Parkinson’s disease, diabetes, heart disease, and Asthma. The report said that over 75,000 mobile phone users answer test questions on their iPhones apps using Apple software, take pictures to describe the conditions, or use sensors on the iPhone to take measurements of the symptoms. Data from research participants are fed into huge databases that help to analyze DNA or do cancer diagnostics. Researchers are looking into using iPhone motion sensors, camera technology, and touchscreen features to expand their studies and include other environmental variables.

The downside to using iPhone apps and the public to conduct medical research is in the area of ethics, especially that of privacy and data collection. Other criticisms have been about the length of the tests and content, and validity of the sample, considering that most iPhone users tend to be more affluent and may not represent the general population (FoxNews Latino, 2015). Participants must be mentally and physically able to use an iPhone, access appropriate apps, and use the sensors and associated technology.

One Sight TV (January 2016) reported on a new aspect of the sharing economy that was recently launched in China. Xiang Jie is a sharing community of people who facilitate borrowing excess or unused items such as toys, video games, crafts, and such from each other and the greater public. Xiang Jie started up with the idea that many people have more items than they need or use regularly. They also have limited storage space for those items. There are others who do not want to buy things that they will only use for a limited amount of time. Xiang Jie connects the two and facilitates the exchange through borrowing, rental, or barter.

3 SUPPLY CHAIN MANAGEMENT AND SHARING

3.1 Sharing Economy Businesses have Supply Chains

Supply Chain Management can be defined as the management of the forward and reverse flows of products, services, information, finances, and returns/rejects from end suppliers to end customers. It involves planning, execution, and control of processes that add value and satisfy the customer. Customers today demand high quality products and services, short order lead times, on time deliveries, flexibility, reliability, safety, and low cost. Key customer information in terms of needs, expectations, requirements, and preferences drive the processes, and is deployed through successive links in the chain. Collaboration, communication, and cooperation are essential to attainment of customer satisfaction. Appropriate technology, especially in communications and sharing of information greatly facilitate and integrate the processes (Wisner, Tan & Leong, 2014; Heizner & Render, 2014; Arnold, Clive & Chapman, 2012).

Although primarily an Information Service, a sharing economy business may include not only the transaction of information and services, but also the transfer of tangible products or assets, finances, and returns and rejects. Assurance of quality is very difficult in services where transactions are done remotely and through iPhones and the internet. Yet, the volume of business being conducted in the sharing economy today suggests that people are willing to face the challenge of remote e-commerce, work on defining and assuring quality, and improve both processes and technology.

3.2 Processes and Technology

Hardware and software so essential to sharing-economy processes must be developed, maintained, and improved continuously. Entities such as customer service personnel, technical support personnel, legal and financial services, information technology research and development personnel,
marketing and operations personnel form sharing-economy supply chains. As with any service, primary focus is on the service package itself, the service experience, and the financial returns. The people and processes that create the package, define the service experience, and enable and maintain the supporting technology and transactions must be orchestrated to deliver the level of desired quality and customer satisfaction (Wisner, Tan & Leong, 2014).

On the customer end, Customer Relationship Management (CRM) processes and technology must be continuously upgraded. Feedback from customers is essential to the process. On the supplier end, Supplier Relationship Management (SRM) processes and technology must be similarly upgraded with feedback from the field of the same essence. In services, the customer and supplier definition is blurred, and mutual satisfaction of the transaction on the part of both entities is essential. Enterprise Resource Planning (ERP) software contains CRM, SRM, financial, and other modules that integrate the processes, provide real-time information, eliminate information redundancies, and streamline operations (Wisner, Tan & Leong, 2014).

ERP software helps to integrate business processes, but is expensive to obtain and maintain, and difficult to implement. Many companies have adopted SAP, Oracle, and other big name ERP applications. Many companies have found alternatives to ERP systems in Best-of-Breed software, Cloud Computing, and SaaS (software as a service) programs. At the hardware end, hardware system configurations must have the capacity to handle the load of information (Big Data), and capable of storing the information for data mining and analysis to support continuous improvement efforts. System and Data Security are essential to businesses, especially those in the sharing economy. Although strong IS controls are used, security breaches and revelation of customer private information are still ongoing concerns.

At the front end of the business, Collaborative Planning, Forecasting, and Replenishment (CPFR) practices by top and middle management sets the stage for projecting future demand and planning how to match capacity, and acquire capital and other resources to support the plans. At the operational end, much work must be done in acquiring and training personnel in customer service, technical support, and other support areas. The focus must be on the continuous development of trust, sharing, collaboration, communication, and cooperation among company personnel, customers and suppliers, and the community at large (Wisner, Tan & Leong, 2014).

4 FUTURE OPPORTUNITIES

Geron (2013) of Forbes magazine commented on the rapid growth of the sharing-economy and attributed it to a paradigmatic shift in the way people thought about ownership and use of assets. He said that the concept has “created markets out of things they wouldn’t have considered as marketable before.” Sharing-economy business sites today enable people to connect with others and to rent rooms, space, tools, recreational material, labour, and any kind of asset. Geron said the sharing-economy is a “disruptive economic force” that has provided thousands of people a means to generate income in a recessionary economy.

Future Healthcare-related iPhone apps and users will increase as privacy concerns are alleviated and manufacturers such as Apple find ways of ensuring greater data security (FoxNews Latino, 2015). FoxNews projected that future apps may provide users with information about their health condition, with reminders about taking their medications. They project that future apps may also access patients’ medical records/history to provide those patients with more complete diagnostics. The projection did not consider the cost of iPhones, capability of patients to use the phones, safety, and theft.

In early 2015, Uber started the Uber Advanced Technology Center venture with Carnegie Mellon University that established a research facility in Pittsburg to look into developing self-driving vehicles (Coldeway, 2015). Uber has vertically integrated some of its second tier operations by launching a leasing program through a subsidiary named Xchange Leasing, which offers reasonable rates to its drivers (Fitzpatrick, 2015).
Airbnb is looking at other segments of its marketplace by building upon its basic e-commerce platform of rentals. Potential markets are in the cruise-line industry, ski or summer resorts, and churches and meeting halls that have excess capacity and want to attract renters. Some writers have proposed that the company should use its platform to be an intermediary 3PL (3rd party logistics supplier) to industry and to facilitate outsourcing of labour, production, and warehousing and distribution space. Concepts of sharing from former times, such as share-cropping of gardens, fields, and orchards… may become an attractive source of revenue to Airbnb.

Howard (2016) stated that the sharing economy requires five golden rules for success: (1) A ‘trust and sharing’ culture, (2) Leadership based on ‘inspiring passion’, (3) ‘embrace failure’ and consider it the ‘new success’, (4) ‘cultivate mavericks’ and encourage creativity and innovation, and (5) make “adaptation to change a core business competency.” She said that sharing, trust, and borrowing are the new values in the sharing economy.

Trust and collaboration among people both in the external and internal supply chain are imperative in assuring quality, timeliness, low cost, satisfaction, and profits. System redundancies and tighter controls cost much in time, money, and resources. New technology is constantly being researched. iPhone apps have been paired with RFID and GPS technology to provide real time information about inventory or critical resources. Google has developed a map-social-media sharing app called WAZE that enables users to share road conditions with other users. Downey (2016) says that there is a danger that hackers could get your information and stalk or harm you. Google claims that there is no need for concern as there is no security risk.

The writer argues that possibilities are endless if we apply supply chain management and sharing concepts to opportunities in the economy, society, and environment. Other levels in sharing economy transactions may be identified. Challenges exist and must be addressed and resolved in a mode of continuous improvement. Technology is an enabler of human communication and transaction processes. New challenges and opportunities lie in the areas of climate control, natural disaster prevention and mitigation, waste control, and sustainability and social responsibility.

5 CONCLUSION

The sharing economy is characterized by the sharing of assets among people and facilitated through the use of the internet and mobile applications. Uber, Airbnb, and other internet-enabled mobile-accessed businesses are conducting billions of dollars of business a year and serving hundreds of thousands of sharing customers. Americans made more than $3.5 billion in 2015 by renting or sharing assets and unused items, and Alibaba, a Chinese e-commerce company had revenues of $12 billion in 2015 (The Data Story Show, 2016).

Today, people use the internet and iPhones to buy used goods, share rides, seek bed-and-breakfasts, and participate in sharing due to economic need. Sustainability, conformance to environmental regulations, and social pressure may induce others to reduce, reuse, recycle…and share. According to the Data Story Show (2015), drivers of the sharing economy are: (1) new and innovative technology, (2) values that embrace humanness, inter-connectedness, and openness; (3) economic realities; and (4) environmental pressures.

Customers today demand high quality products and services, short order lead times, on time deliveries, flexibility, reliability, safety, and low cost. Collaboration, communication, and cooperation are essential to attainment of customer satisfaction. Appropriate technology, especially in communications and sharing of information, helps to integrate and facilitate the processes. Sharing economy businesses have supply chains and can benefit much from Supply Chain Management practices. Challenges exist and must be addressed and resolved in a mode of continuous improvement.
References


Bly, L. (July 6, 2012). Airbnb: No place like someone else's home. USA Today Travel.


CBS. (April, 2015). Airbnb nightmare renters leave Calgary home trashed. CBC


D’Onfro, J. (February 15, 2016). How this Uber driver made $90,000 in 6 months while barely driving at all. Retrieved from http://www.aol.com/article/2016/02/05/how-this-uber-driver-made-90-000-in-6-months-while-barely-drivi/21308418/


Lien, T. (February 18, 2015). Uber to launch carpooling service in Los Angeles on Thursday. The Los Angeles Times


Parr, B. (August 1, 2011). Airbnb: We Screwed Up And We're Sorry. Mashable.


The Data Story Show. (Jan 21, 2016) What are the Consequences of the Sharing Economy? Press 42. Retrieved from https://www.youtube.com/watch?v=BVHfpRtUwMM

Wagle, V. (30 April 2013). Introducing Airbnb Verified ID. AirBNB Blog

