A STRATEGIC ANALYSIS OF EVO CAR SHARE

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Abstract

This thesis examines options available to the British Columbia Automobile Association (BCAA) to mitigate the strategic risk posed by its reliance on Vulog for provision of the platform that enables Evo Car Share (“Evo”). We begin with a situational analysis that examines Evo’s external environment, internal characteristics, current strategy, and financial performance. Next, we present a fulcrum analysis whereby we predict Evo’s performance under the status quo and develop a strategic intent by considering possible vertical market failure. Finally, we develop a solution analysis in which we compare an “ABC” of options: (i) acquire Vulog; (ii) build a car-sharing platform in-house; or (iii) collaborate with Vulog and align incentives. By evaluating the options against ten weighted criteria, we recommend that BCAA should take option (iii) beginning with the customer-facing applications. On a five-point scale, where five is the most favourable, our proposed options score 3.71, 4.15, and 2.97, respectively.

Keywords: corporate strategy; car sharing; sharing economy; British Columbia Automobile Association; BCAA; Evo Car Share
Executive Summary

This thesis examines options available to the British Columbia Automobile Association (BCAA) to mitigate the strategic risk posed to the association by its reliance on a small, remote firm (Vulog) for provision of the integrated hardware and software platform that enables Evo Car Share (“Evo”). In coming to a recommendation on the best course of action, we take a three-part approach that includes situational, fulcrum, and solution analyses.

The situational analysis presented in Chapter 2 describes the external environment, internal characteristics, current strategy, and financial performance of BCAA/Evo. Evo competes in the personal transportation industry in Vancouver. Its direct rivals in the car sharing segment of this industry are car2go, Modo Car Co-op, and Zipcar; together, the four car sharing organizations (CSOs) constitute a local oligopoly in which rivals compete on differentiation rather than price. From a “five forces” perspective, the car sharing industry is moderately attractive. Inter-firm rivalry and the threat of substitution are low, the power of suppliers and threat of new entrants are high, and the power of buyers is moderate. Current political, environmental, and technological trends favour the expansion of car sharing, while macroeconomic effects are mixed.

Evo has a number of competitive advantages that position it well in the Vancouver car sharing market. Evo is backed by BCAA, a strong, local association with excellent management and a healthy balance sheet. Evo’s brand is well articulated and carefully positioned to differentiate the service clearly from its competitors. There are also a number of threats that could lead to Evo’s long-term financial performance becoming sub-optimal. These are outlined in the fulcrum analysis, below.

Evo’s current strategy is to charge a premium price for flexible personal transportation within the City of Vancouver by providing a compelling value proposition based on convenience, utility, and identity to young, urban, social, and environmentally-
conscious consumers. This strategy provides BCAA with an opportunity to grow by serving a generation that is not typically associated with membership in the association.

BCAA’s overall financial health is excellent. The association carries no long-term debt and, as of September 30th, 2014, held an impressive $145MM in assets. However, a large and growing majority of the association’s earnings can be attributed to investment income rather than operations. In this context, the development of new services, like Evo, is warranted and necessary.

The fulcrum analysis presented in Chapter 3 predicts Evo’s performance under the status quo and develops a strategic intent by considering possible vertical market failure (VMF). BCAA is wholly reliant on Vulog for provision of the car sharing platform that powers Evo. This presents a number of challenges, both with the platform itself and with the nature of the business relationship. The principal weaknesses of the platform are the unreliability of the customer-facing mobile application and deficiencies in the data made available to Evo by the back-end fleet-management software. The relationship is complicated by the facts that Vulog is based in the south of France, has predominantly French-speaking employees, operates in a time zone that is nine hours ahead of British Columbia’s, and is part of a wholly different culture. In addition, the buyer-supplier relationship effectively constitutes a bilateral monopoly featuring high asset specificity, intensity, and durability, combined with high transaction frequency, and is thus at substantial risk of VMF. Given these factors, Evo’s growth under the status quo is likely to be moderate in the near future, and uncertain in the longer term. BCAA should therefore consider backwards vertical integration.

In line with this argument, the solution analysis presented in Chapter 4 compares an “ABC” of options for mitigating the strategic risk posed by Vulog. These are: (i) acquire Vulog, or another firm of similar size and capabilities; (ii) build a car-sharing platform in-house; or (iii) collaborate with Vulog to align incentives. The three options are evaluated against ten criteria, which were weighted by BCAA’s SVP and CIO, Ken Ontko. The four most important of these criteria are:
1. Time to implement
2. Potential to drive BCAA membership
3. Potential to increase customer satisfaction
4. Degree to which the proposed solution introduces new competitive advantages, or enhances existing advantages

On a five-point scale, where five is the most favourable, our proposed options score 3.71, 4.15, and 2.97, respectively. We therefore recommend that BCAA should begin to build its own car sharing platform in-house by developing the customer-facing software. Integrating backwards in this manner will address many of the issues stemming from VMF, will enable BCAA to take control of the primary customer interface for Evo and allow the association to collect usage data that will empower it to make data-driven decisions and optimizations. We estimate that the cost of building the customer-facing applications from scratch with a team of five for 3–4 months is approximately $150,000–$200,000. (By comparison, the expected cost of acquiring Vulog, or similar firm, is approximately two orders of magnitude greater, estimated at $10–15MM.) At its discretion, BCAA could continue to build its car sharing platform by developing its own fleet management software at a later stage.
Dedication

Keith Fong:
To my amazing wife Geneva, whose unwavering love and support kept our lives sane during the last two years, even while pursuing her own academic goals.
To our wonderful children Kaden and Gianna, both of whom were always willing and able to bring joy and laughter to the brief moments between studies (and occasionally during!).

Laura Hayes:
There is something exceptional about a partner who not only supports your dreams, but actively encourages them as their own. Michael, thank you for always inspiring me to take on a new adventure. This accomplishment is as much yours as it is mine.

Nathan Jones:
In gratitude for their ongoing love and support, this thesis is affectionately dedicated to my family: Romina, Sofia, and Michael.
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We would like to express our deepest appreciation to Ken Ontko, SVP and CIO at BCAA, whose spirit and drive captivated and inspired us. Thank you for providing us the opportunity to examine and discuss Evo Car Share and BCAA. Without your thorough guidance and feedback throughout the writing process, this thesis would not have been possible.

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## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>24x7</td>
<td>24 hours a day, 7 days a week</td>
</tr>
<tr>
<td>AAA</td>
<td>American Automobile Association</td>
</tr>
<tr>
<td>API</td>
<td>Application programming interface</td>
</tr>
<tr>
<td>B</td>
<td>Billion (10^9)</td>
</tr>
<tr>
<td>B2B</td>
<td>Business-to-business</td>
</tr>
<tr>
<td>BC</td>
<td>British Columbia</td>
</tr>
<tr>
<td>BCAA</td>
<td>British Columbia Automobile Association</td>
</tr>
<tr>
<td>CAA</td>
<td>Canadian Automobile Association</td>
</tr>
<tr>
<td>CIO</td>
<td>Chief information officer</td>
</tr>
<tr>
<td>CSO</td>
<td>Car sharing organization</td>
</tr>
<tr>
<td>EBIT</td>
<td>Earnings before interest and taxes</td>
</tr>
<tr>
<td>FAQ</td>
<td>Frequently asked questions</td>
</tr>
<tr>
<td>FAH, F@h</td>
<td>Folding at Home</td>
</tr>
<tr>
<td>FLOPS</td>
<td>Floating-point operations per second</td>
</tr>
<tr>
<td>GAAP</td>
<td>Generally accepted accounting principles</td>
</tr>
<tr>
<td>GM</td>
<td>General Motors Company</td>
</tr>
<tr>
<td>GPS</td>
<td>Global positioning system</td>
</tr>
<tr>
<td>HOV</td>
<td>High occupancy vehicle</td>
</tr>
<tr>
<td>HR</td>
<td>Human resources</td>
</tr>
<tr>
<td>ICBC</td>
<td>Insurance Corporation of British Columbia</td>
</tr>
<tr>
<td>km</td>
<td>kilometers</td>
</tr>
<tr>
<td>MM</td>
<td>Million (10^6)</td>
</tr>
<tr>
<td>n.d.</td>
<td>No date</td>
</tr>
<tr>
<td>OBD</td>
<td>On-board diagnostic</td>
</tr>
<tr>
<td>P</td>
<td>Peta (10^15)</td>
</tr>
<tr>
<td>PC</td>
<td>Personal computer</td>
</tr>
<tr>
<td>PEST</td>
<td>Political, economic, social, and technological</td>
</tr>
<tr>
<td>RFID</td>
<td>Radio frequency identification</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on assets</td>
</tr>
</tbody>
</table>
S.A.S.  Société par actions simplifiée
SVP  Senior vice-president
SWOT  Strengths, weaknesses, opportunities, and threats
T  Trillion ($10^{12}$)
TAM  Total addressable market
TNC  Transportation network company
UBC  The University of British Columbia
VCE  Value chain evolution
VMF  Vertical market failure
VMT  Vehicle miles traveled
VRIN  Valuable, rare, inimitable, and non-substitutable
### Glossary

| **Application programming interface (API)** | A set of well-defined, public protocols that specify how discrete software programs can interact with each other. |
| **Car pooling** | Carpooling is the sharing of car journeys. At a minimum, a carpooled vehicle carries the driver and one passenger. |
| **Car sharing** | Car sharing is membership-based, short-term car rental. Car sharing appeals to people who need to make only occasional use of a vehicle, or who sometimes need a vehicle that is different from the one they usually drive. Members benefit from private use of a vehicle without the responsibilities and costs of ownership. |
| **Collaborative consumption** | See “sharing economy.” |
| **Metro Vancouver** | Metro Vancouver is a partnership of 21 municipalities, one Electoral Area, and one Treaty First Nation in the Vancouver area. It collaboratively plans for and delivers regional-scale services. |
| **Mobile app** | Software applications written specifically for phones and watches. |
| **Ride hailing** | A service that allows one-time ridesharing to be arranged on very short notice, typically by way of a mobile app. Generally, the driver of the hailed vehicle is also its owner and is not a licensed taxi driver but an ordinary person with spare time and seats. He or she is simply making the vehicle’s slack capacity available for paid rides during all or part of the day. Also known as: real-time ridesharing, instant ridesharing, dynamic ridesharing, ad-hoc ridesharing, on-demand ridesharing, and dynamic carpooling. |
| **Ride sharing** | Ridesharing is “the sharing of vehicles by passengers to reduce vehicle trips, traffic congestion and automobile emissions.” Ridesharing includes carpooling and public transit. |
| **Sharing economy** | The sum of (predominantly) peer-to-peer transactions by which excess capacity in goods or services are reallocated by resale, barter, lending, gifting, and sharing. Connections between peers are typically forged in online marketplaces featuring bi-directional rating systems to engender trust on both sides of a transaction. Also known as collaborative consumption. |
Vertical market failure (VMF)  Vertical market failure occurs when the transactions between buyers and suppliers in an industry supply chain are too risky and/or costly to manage and control.
1: Introduction

The history of the sharing economy and the current state of vehicle use and alternatives will be reviewed in the upcoming chapter with the purpose of providing some general context to the how and why Evo Car Sharing has come to be. The purpose and outline of the balance of the thesis will also be discussed.

1.1 The sharing economy

The world’s fastest supercomputer is widely acclaimed to be 天河-2 (pronounced “tianhe-2” and meaning, literally, “Heaven River-2,” or “Milky Way-2”). Developed by 1,300 scientists and engineers at a cost of 2.4 billion yuan (390 million US dollars), and deployed for the purpose of national defence in the National Supercomputer Centre of Guangzhou, China, this 80,000-processor behemoth boasts a performance of almost 34 PFLOPS (or, 34 x 10^15 floating-point operations per second) (“Tianhe-2”, n.d.).

It is laughable to think that the lowly personal computer (PC) would have any chance of competing against such a titan. However, if distributed computing systems are included in the comparison, the fastest supercomputer in the world is actually Folding@home (FAH, or F@h) a shared pool of approximately 154,000 processors whose combined performance is 36 PFLOPS – a staggering two thousand million million floating-point operations per second faster than 天河-2. To achieve this incredible speed, the system puts to work the unused processing capacity of PCs owned by tens of thousands of loosely affiliated volunteers who have installed F@h software on their computers for no commercial gain. Operated by Stanford University, F@h is dedicated to elucidating the thorny problem of protein folding, misfolding, and related diseases (Pande, n.d.).

The potential advantage of shared over single-owner resources is not limited, as illustrated above, to competition between pooled, privately owned capacity and state-
managed solutions, but also poses a meaningful threat to the corporation. For example, AirBnB, which makes spare bedrooms the world over available for rent, claims an inventory of approximately 1 million rooms (Weed, 2015). By comparison, the largest hotel groups in the world – InterContinental, Hilton, and Marriott – each have approximately 700,000 available rooms (Mudallal, 2015).

According to Yochai Benkler of Yale Law School, shareable goods are those that are (1) technically “lumpy” and (2) of mid-grained “granularity” (Benkler, 2004). By “lumpy,” he means indivisible, or quantized. For example, it is not possible to buy computer-processing power in less than a discrete unit, even if the buyer requires not all of that computational power. The same goes for automobiles. One cannot own less than a whole car, even if that car sits idle in a garage 22 hours out of every day in the year. Benkler elaborates on granularity thus:

“Lumpy goods can, in turn, be fine, mid-, or large-grained. A large-grained good is one that is so expensive that it can only be used by aggregating demand for it. Industrial capital equipment, like steam engines, is of this type. Fine-grained goods are of a granularity that allows consumers to buy precisely as much of the goods as has the amount of capacity they require, such as a donut, or a cup of coffee. Mid-grained goods are small enough for an individual to justify buying for her own use.”

Examples of mid-grained goods in the developed world are PCs and automobiles. Benkler proposes that goods of this granularity are (i) widely owned by private individuals, and (ii) exhibit systematic excess capacity with respect to their owners’ needs.

The problem of re-allocating this slack efficiently to non-owners can be solved by one of two routes: secondary markets, or social sharing (if state-based management of private resources is explicitly excluded). Benkler proposes that the owner of a mid-grained resource with excess capacity (an “agent”) must go through a series of decisions like those outlined in Figure 1.1 in order to determine whether or not to exclude other people from this resource, and to what degree, based upon consideration of both the transaction and opportunity costs associated with each fork in the process.
In Benkler’s model of social sharing, the owner of a mid-grained resource with excess capacity derives no monetary benefit from sharing it with others. (She may, however, receive a social benefit.) By contrast, what has become known as the “sharing economy” explicitly includes the possibility for owners to profit from their underused resources. In other words, the sharing economy conflates the secondary market with social sharing.

In the sharing economy, individuals, corporations, non-profit organizations, and governments are empowered by free-flowing information to reallocate excess capacity in goods or services by resale, barter, lending, gifting, and sharing. The transaction costs incurred by agents in the partial exclusion of others from their slack resources have been
driven down dramatically over the last several years by the rise of internet-based services that connect buyers and sellers, which has resulted in a thriving ecosystem at the bottom of Benkler’s decision tree. Because the reach of products and services in the sharing economy extend beyond singular ownership, participants have been described as participating in “disownership” and “collaborative consumption” (“Sharing economy”, n.d.).

Forbes Magazine estimated that “revenue flowing through the sharing economy directly into people’s wallets” exceeded 3.5 billion US dollars in 2013. It predicted annual growth of 25 % and foresaw the rise of a “disruptive economic force” (Geron, 2013). Investors appear to agree and have placed bets in the hundreds of millions of dollars on start-up companies like Uber and AirBnB. It is likely that the sharing economy will have a major societal impact.

The rise of the sharing economy has been driven by:

1. The Internet and social media, which dramatically reduce the transaction costs associated with establishing connections and developing trust between buyers and sellers (through bi-directional rating systems). Online marketplaces also allow secure, frictionless payments.

2. Sluggishness in the global economy since 2008 and rising unemployment in the developed world, which have combined to make it necessary for many people (i) to seek additional sources of income by monetizing their underused goods; and (ii) to reduce costs by buying used goods and sharing services.

3. Enhanced social awareness and a desire to do good, both to the environment (by reusing physical goods and therefore reducing waste) and to people (by helping and sharing).

Hamari et al. define collaborative consumption as “peer-to-peer-based activity of obtaining, giving, or sharing access to goods and services, coordinated through community-based online services” (Hamari, Sjöklint, & Ukkonen, 2015). In a study of 254 such services, these researchers uncovered the following kinds of transactions: sharing,
new purchase, second hand purchase, renting, donating, swapping and lending/borrowing. These were broadly classified into two main categories of exchange: *access over ownership* and *transfer of ownership*, with the former predominating. Current examples of collaborative consumption are given in Table 1.1.

Table 1.1 Examples of collaborative consumption.

<table>
<thead>
<tr>
<th>Service</th>
<th>Trading Activity</th>
<th>Monetary Exchange</th>
<th>Mode of Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>AirBnB</td>
<td>Rent</td>
<td>Yes</td>
<td>Access</td>
</tr>
<tr>
<td>Couchsurfing</td>
<td>Lend</td>
<td>No</td>
<td>Access</td>
</tr>
<tr>
<td>Ebay</td>
<td>Auction</td>
<td>Yes</td>
<td>Transfer</td>
</tr>
<tr>
<td>Etsy</td>
<td>Sale</td>
<td>Yes</td>
<td>Transfer</td>
</tr>
<tr>
<td>Folding at Home</td>
<td>Lend</td>
<td>No</td>
<td>Access</td>
</tr>
<tr>
<td>Freegive</td>
<td>Donate</td>
<td>No</td>
<td>Transfer</td>
</tr>
<tr>
<td>Rent the Runway</td>
<td>Rent</td>
<td>Yes</td>
<td>Access</td>
</tr>
<tr>
<td>Swapstyle</td>
<td>Swap</td>
<td>No</td>
<td>Access</td>
</tr>
<tr>
<td>Uber</td>
<td>Rent</td>
<td>Yes</td>
<td>Access</td>
</tr>
</tbody>
</table>

1.2 Alternatives to own-vehicle use

1.2.1 Context

This thesis considers the personal transportation sector of the sharing economy, with specific focus on Evo Car Share (“Evo”), which was launched March, 2015 in Vancouver by the British Columbia Automobile Association (BCAA). In the area of personal transportation, disownership and collaborative consumption may take several non-exclusive forms, with the individual actor potentially choosing a patchwork of different approaches to fulfilling the job to be done. The transportation modes outlined in Sections 1.2.2-7 fall under the umbrella term of alternatives to own-vehicle use. For illustrative purposes, and as a partial description of Evo’s current competitive environment, these options will be considered in the context of the current transportation landscape.
within the City of Vancouver (“The City”). (See Chapter 2 for a thorough situational analysis of BCAA/Evo).

Vancouver is a coastal seaport city with a 2011 census population of 604,000 (current estimate: 641,000). Located in the Southwestern corner of British Columbia, Canada, the City occupies a peninsula that juts into the Pacific Ocean (bounded to the North by Burrard Inlet, to the West by the Strait of Georgia, and to the South by the Fraser River) and has a land area of only 114 square km (Figure 1.2). Its population density is 5,250 residents per square km, making it the most densely populated city in Canada and the fourth most among cities greater than 250,000 in North America (behind New York, San Francisco, and Mexico City) (“Vancouver”, n.d.). Consistent with the city’s high population density, Vancouver’s urban planning has focused on high-rise residential (particularly in the West End, Coal Harbour, and False Creek neighbourhoods) and mixed-used development to counteract sprawl.

![Map of Vancouver (courtesy of Google Maps.)](image_url)
The alternatives to own-vehicle use listed below should be read in the context of the City of Vancouver’s overarching vision for transportation: “By 2040, we envision a city with a smart and efficient transportation system that supports a thriving economy while increasing affordability; healthy citizens who are mobile in a safe, accessible, and vibrant city; and a city that enhances its natural environment to ensure a healthy future for its citizens and the planet” (“Transportation 2040”, 2012).

1.2.2 Walking, cycling, and public Transit

The City of Vancouver has made it a goal that by 2040 at least two-thirds of all trips will be by foot, bicycle, or public transit. The City currently has 2,200 km of sidewalk, 270 km of dedicated bikeways, and 379 pedestrian/cyclist-controlled signals; it also has ongoing plans to add to and upgrade this network. The city’s short blocks and frequent intersections make it possible to walk or cycle efficiently between almost any two points. Vancouver boasts three rapid transit rail lines (25 km of track), 31 bus routes, 18 km of roadways exclusive to buses, and 2,200 bus stops (“Available City Assets - Vancouver Economic Commission”, 2014). The City’s high population density, mixed-use urban development, and extensive network public transit network make not owning a car a viable and attractive option, particularly for residents of the downtown core who enjoy a wide variety of proximate amenities and are constrained by lack of (affordable) parking.

1.2.3 Carpooling

Carpooling is the sharing of car journeys. At a minimum, a carpooled vehicle carries the driver and at least one passenger. Carpooling is most common among family members (such as when a parent drops children at school en route to work) but is also prevalent among co-workers (such as when a dedicated driver picks up colleagues and ferries them to a common workplace). In 2009, carpooling represented 44 % of all trips and 10 % of commuter trips in the United States (“U.S. Department of Transportation”, 2009 and Park & Gebeloff, 2011). Carpooling reduces the costs of travelling (fuel, tolls, parking, etc.) by distributing them among all occupants of the vehicle. It also reduces carbon emissions, congestion, and the need for parking spaces.
In Vancouver, carpoolers may benefit from less congested, high-occupancy vehicle (HOV) lanes on the highway system and from parking spots set aside specifically for them, in both private lots and on city streets. Carpoolers may even park in areas marked “Residents Only” and “No Parking Except with Permit” as per the Street and Traffic By-Law 2849, Section 23 (“City of Vancouver”, 2015).

Passengers in Vancouver can find carpooling partners through the free Jack Bell Ride-Share database (available as a website and also as an Android app) (“Jack Bell Ride-Share for BC”, n.d.).

1.2.4 Taxis

A taxicab, or taxi, is a vehicle with a dedicated driver that is licensed to transport passengers in return for payment, typically over short-haul trips. Taxis are the mode of choice for evening partygoers and for one-way trips, particularly those beginning or ending at the airport, because passengers are freed from the responsibilities of driving and parking. However, taxis are fundamentally limited by availability and are expensive relative to own-car, public transit, cycling, and walking options.

Vancouver’s Vehicles for Hire By-Law 6066, Section 23 caps the number of taxi licenses in the city at 588 (433 for taxicabs and 133 for dual taxicabs) (“Vehicles for Hire By-law No 6066”, n.d.). These licenses have been absorbed by so-called “shareholders” in four major taxi companies: Yellow Cabs, Black Top and Checker Cabs, MacClure’s Cabs, and Vancouver Taxi. While the sale prices of Vancouver taxi licenses are not publicly known because the “plates” are exchanged by means of closed auctions, informed estimates put their value in the ballpark of $800,000 (Woodward, 2014). This absurdly high figure is clear evidence that there is a chronic shortage of cabs in Vancouver, as there is in many other major North American cities. This shortage, and the fact that the licenses are held by a very small number of firms, leads to manifold problems with taxi operations in the Vancouver, such as an ineffective complaint system, and poor service to seniors, hospitals, grocery stores, and tourists. City Council has exacerbated these problems by voting to
extend the moratorium on new taxi licenses until October 31, 2015 (Smith, 2015), ostensibly to allow further consultation with stakeholders (“Response to Council Motion”, 2015).

Taxi fares are regulated by the city and are currently $3.20 to hail a cab, $1.84 per km driven and $32.86 per hour. The ultimate fare to be paid by the passenger will be specified by a meter inside the vehicle and will depend on the distance driven and the pace of traffic (itself a function of time of day and congestion).

1.2.5 Real-time ridesharing (ride-hailing)

Ridesharing is “the sharing of vehicles by passengers to reduce vehicle trips, traffic congestion and automobile emissions.” Ridesharing includes carpooling and public transit. By comparison, real-time ridesharing (variously known as instant ridesharing, dynamic ridesharing, ad-hoc ridesharing, on-demand ridesharing, dynamic carpooling, and ride-hailing), is a service that allows one-time ridesharing to be arranged on very short notice, typically by way of a mobile app. Generally, the driver of the hailed vehicle is also its owner and is not a licensed taxi driver but an ordinary person with spare time and seats. He or she is simply making the vehicle’s slack capacity available for paid rides during all or part of the day.

The dominant players in this space are the transportation network companies (TNC), Uber (through UberX), and Lyft, neither of which are currently licensed to operate in Vancouver owing in large part to lobbying pressure from taxi companies who correctly appreciate ride-hailing as a mortal threat to their businesses. Ride-hailing services have already demonstrated in many cities all over the world that they are able to meet personal transportation demand much more efficiently and cheaply than conventional taxis and provide a better living for drivers. Indeed, some taxi drivers are signing up as drivers for Uber and Lyft to supplement their incomes. Prices for taxi licenses in New York City are estimated to have declined from $1,000,000 to $800,000 in the face of competition by Uber (Barro, 2014). Taxi drivers in Paris, where licenses cost approximately €240,000, recently staged a large-scale protest against Uber. They began by blocking highways to airports and
train stations and harassing Uber drivers and passengers. The demonstration escalated into scuffles, tyre burning, and car flipping. Riot police were called in to maintain the peace (Arthur, 2015). Uber has since suspended its ride hailing services in the French capital as it awaits a ruling by the Constitutional Court on the legality of its operations (Sayer, 2015).

The growth of ride-hailing has been spurred by inefficiencies in the taxi system and enabled by advances in the following three technological factors:

1. Smartphones (essentially internet-enabled hand-held computers), which are now carried by the majority of urban dwellers and can be used to locate and request a ride by way of easily installed software. This software also permits passenger’s credit card to be billed at the end of the ride and obviates the need for money or a physical card to change hands.

2. Global Positioning System (GPS), “a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the earth where there is an unobstructed line of sight to four or more GPS satellites.” This is typically built into smartphone hardware. It enables passengers to locate and request nearby drivers and also facilitates fair pricing for hailed rides depending on distance travelled.

3. Social media, which allows trust and accountability to be established between drivers and passengers, by way of two-way rating and reviewing systems.

Aside from these technological advances, ride-hailing has also been accelerated by the ongoing densification and congestion of urban centres, and by cultural shifts, such as an increasing concern for the environment and the fact that millennials are postponing applying for driver’s licenses ever longer, or neglecting ever to do so. Darren Ross of Fast Company notes that “it used to be that having your own car provided the ultimate sense of freedom for young adults” but in the modern era the concept of freedom and identity has moved online. The ubiquity of mobile, internet-connected devices means that young adults are “establishing identities, relationships, and individualism online all day long – as much as, if not more than, in the real world” (Ross, 2015).
Ride-hailing is a truly disruptive force in personal transportation because its business model and cost structure, which are predicated on the enormous slack capacity in the vehicles and time of ordinary people, are completely different from those of taxis, car sharing, car rental, and public transit. As pick-up times fall, and utilization and coverage density increase, Uber prices inevitably fall. It is now significantly cheaper “to Uber” than it is to take a cab in many American Cities, sometimes by as much as 40 %, and pick-up times are dramatically shorter and more predictable (typically within 5 min) (Gurley, 2014).

Bill Gurley, a Series A investor and Uber board member, asks, then answers his own question, “What if someone could run a more convenient, safer service at a much lower price and with much higher availability? You would end up with dramatically more rides – and that is exactly what is happening” (Gurley, 2014). What he means, in part, is that the own-price elasticity of Uber rides is very high, though he does not specify the actual figure. Gurley also proposes new use cases for ride-hailing that would dramatically enlarge Uber’s market. These include serving less urban locations, transporting older parents and children, supplementing mass transit, substituting car rental, and delivering packages.

The real prize for Uber is to act as a substitute for car ownership (and incidentally, therefore, also claim a sizeable chunk of the parking market). The American Automobile Association (AAA) estimates that the annual cost of car ownership in the United States is $9,000 (“Cost of Owning and Operating Vehicle in U.S.”, 2013). One only has to divide that figure by the average cost of an Uber ride to determine the opportunity cost in rides that car ownership represents. This simple math has already convinced many people to forgo a second car, and as Uber’s efficiency continues to improve, some may abandon their primary vehicles, too. The benefits extend also to forgetting about the hassles of car maintenance, parking, and insurance. The total addressable market (TAM) available to Uber as both an expanded ride-hailing service and an alternative to car ownership has been estimated at anywhere between $450B and $1.3T (Gurley, 2014).
Despite these manifold advantages, Uber faces serious regulatory, lobbying, legal, and political threats that would undermine its expansion. In what could prove to be a serious blow to Uber’s cost structure, the California Labour Commission recently determined that a San Francisco-based Uber driver was in fact an employee of the company rather than an independent contractor. In its ruling, the commission said, “Defendants hold themselves out as nothing more than a neutral technological platform, designed simply to enable drivers and passengers to transact the business of transportation. The reality, however, is that Defendants are involved in every aspect of the operation” (Alba, 2015).

In Canada, Uber is currently available in Toronto, Montreal, Halifax, and Ottawa. It is not yet available in Vancouver, even though the City’s Transportation 2040 Plan specifies that Vancouver supports “legislative and technological advances that facilitate peer-to-peer car sharing” (Section M 3.1.4.) (“Transportation 2040”, 2012).

1.2.6 Car rental

Traditional car rental agencies serve people who need use of a vehicle for periods ranging from a day to a few weeks. Their clients are people who don’t own their own vehicles, travelers from out of town, people needing specialized vehicles for particular purposes, such as transporting several passengers or moving furniture, and those waiting for their own vehicles to be repaired. Major cities like Vancouver are well served by car rental agencies, which typically have several branches located throughout and are typically clustered at airports. In most cases, the user is required to return the vehicle to the location from which it was rented.

Though mature, the car rental industry is not stagnant. It is aware of the sharing economy and is taking strides to adapt to it. The relationship between car rental and car sharing (Section 1.2.7) has been complicated by two recent developments. The first is that Avis Budget Group, which owns Zipcar, has begun to pool its rental and sharing fleets. By renting Zipcar vehicles during week days when sharing demand is low and by sharing Avis vehicles over the weekend when rental demand is low, Avis projects a $20MM annual opportunity in cost savings and revenue growth (“Avis Budget - Presentations”, n.d.).
The second development is that peer-to-peer car rental has begun to emerge. The leader in this space is RelayRides, which presents itself as “the Airbnb for cars” (“RelayRides”, n.d.). It provides a platform for everyday car owners to make their underused vehicles available for rent by other people. In an important technological twist, the OnStar navigation and communication system installed in 15 million GM cars sold in the United States after 2005 allows owners to unlock their vehicles remotely so as to facilitate rental without transfer of physical keys (Lawler, 2012). The peer-to-peer car rental landscape has become even more interesting with the emergence of a pilot project by Ford that will enable customers who finance their vehicle purchases through Ford Motor Credit to rent their vehicles to pre-screened drivers for short-term use, which will help them to defray some of the costs of ownership. The service is being deployed in the United States and Europe via collaborations with GetAround and EasyCar Club, respectively (Ungerleider, 2015).

1.2.7 Car sharing

Car sharing is membership-based, short-term car rental. Car sharing appeals to people who need to make only occasional use of a vehicle, or who sometimes need a vehicle that is different from the one they usually drive. Members benefit from private use of a vehicle without the responsibilities and costs of ownership. As a general rule, car sharing is more expensive than car ownership for people who commute to work daily, or who need to drive more than about 10,000 km annually (“Carsharing”, n.d.).

Car sharing is a much more flexible model of car rental than the service traditionally supplied by firms like Avis, Hertz, and Enterprise (though they, too, now have their own car sharing subsidiaries; Avis owns Zipcar, which operates in Vancouver). The major differences between car sharing and traditional car rental are the following:

1. Drivers are pre-approved for rental, i.e., once background checks into an applicant’s driving and insurance records have been undertaken, and a payment method established, the applicant becomes a member of the car sharing organization and
ongoing access to the entire fleet is granted. Membership is a prerequisite for driving.

2. Vehicles are located throughout the service area (typically a city, in both public and private parking lots) rather than being confined to rental offices.

3. Reservation, pick-up, and return are self-service (this includes checking the vehicle for damage) and are not confined to office hours.

4. Vehicles may be rented by the minute, by the hour, or by the day, and, in the modern version of car sharing, are typically located, reserved, and unlocked using a smartphone app.

5. Fuel, insurance costs and some parking costs are included in the rental rates.

The benefits of car sharing extend beyond its advantages over traditional car rental. A study of San Francisco’s City CarShare (Cervero, Golub, & Nee, 2006) during the period 2001–2005 concluded that:

1. Mean vehicle miles traveled (VMT) and fuel consumption decreased more rapidly for members than for non-members during the course of the study. At the same time, City CarShare expanded its fleet and became cheaper and more widely accessible. This increase in personal benefits coupled with a decrease in social and environmental costs (reflected by a decrease in congestion and carbon emission) suggests that car sharing is potentially a “win-win” model for transportation in that it benefits members as well as non-members.

2. Seventeen percent of members sold one or more vehicles after joining City CarShare. Members were 12% more likely to shed a vehicle than non-members.

3. There were significant synergies between car sharing and use of public transit as many trips on transit were for the purpose of accessing shared vehicles. Holding a transit pass was more likely to decrease use of a personal car use than it was to decrease use of car sharing.

4. Decreases in mean VMT and fuel consumption among members were driven by (i) close monitoring and billing of distance traveled by members, which encouraged them to be mindful of their use of cars and to consider walking, cycling, and transit
as viable options; (ii) reduced personal car ownership; and (iii) predominant use of small, fuel-efficient vehicles making up the City CarShare’s fleet.

In alignment with its goals of decreasing congestion and emissions, the City of Vancouver strongly supports car sharing. Its Transportation 2040 Plan claims that “one shared vehicle typically replaces up to 20 personal vehicles” (“Transportation 2040”, 2012). With that in mind, the City currently facilitates car sharing by “allowing developers to replace five parking spaces with one car-share space in some new developments, and by reserving some on-street parking spaces.” In addition, Sections M 3.1.1–3 of the Transportation 2040 Plan describe the City’s desire “to expand requirements and incentives for car sharing in new developments, to continue to make priority on-street locations available for car sharing, and to adopt parking design guidelines for larger developments that enable non-residents to access on-site car-sharing vehicles.”

At the time of this writing, there are four car sharing businesses with a presence in the City of Vancouver: car2go, Evo Car Share, Zipcar, and Modo, The Car Co-op. A comparison of the car sharing organizations (CSOs) is given in Table 1.2.

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<tr>
<th>CSO</th>
<th>Ownership</th>
<th>Estimated Vancouver Fleet</th>
<th>Estimated Vancouver Membership</th>
<th>Rental Model</th>
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</thead>
<tbody>
<tr>
<td>car2go</td>
<td>Daimler AG</td>
<td>750</td>
<td>50,000</td>
<td>Free-floating</td>
</tr>
<tr>
<td>Evo</td>
<td>BCAA</td>
<td>250</td>
<td>12,000</td>
<td>Free-floating</td>
</tr>
<tr>
<td>Modo</td>
<td>Member-Owners</td>
<td>350</td>
<td>10,500</td>
<td>Round-trip</td>
</tr>
<tr>
<td>Zipcar</td>
<td>Avis Budget Group</td>
<td>150</td>
<td>Unknown</td>
<td>Round-trip</td>
</tr>
</tbody>
</table>

One of the most significant differences between Vancouver’s four CSOs is the rental model on which they are based. Both Modo and Zipcar operate on a round-trip basis. That is, a rented vehicle needs to be returned to the point from which it was taken. To facilitate this, Modo and Zipcar provide scores of fixed “home locations” (or, stations) distributed throughout the city (see Figure 1.3). According to the FAQ on Modo’s website,
these locations are chosen using “sophisticated mapping systems that show us where our members live and work, and where the demand for car sharing is. Using this information helps us decide where to place our cars. Conversely, when usage at a specific location drops we may decide to move a car to another location” (“Contact - Modo”, n.d.).

Evo and car2go, on the other hand, offer free-floating fleets, which means that vehicles can be picked up from and dropped off at any location in which it is legal to park within the “home zone” (see Figure 1.4). This flexibility typically requires contractual relationships between CSOs and parking providers, which in the local case is primarily the City of Vancouver. Within the home zone prescribed in Figure 1.4, Evo members may

Figure 1.3 Map of Modo’s fixed home locations in downtown Vancouver (retrieved from modo.coop on May 25, 2015).
make free use of unmetered residential street parking (including that marked “Permit Only”), as well as designated parking spots on the street, or within commercial lots.

![Map of Evo’s fixed home zone in Vancouver](image_url)

*Figure 1.4 Map of Evo’s fixed home zone in Vancouver (retrieved from evo.ca on May 25th, 2015).*

A third, hybrid model of car sharing is called *point-to-point*. It encompasses elements of both round-trip and free-floating systems in that a driver picks up a car from a designated station and returns it to a different station. The point-to-point system is currently being used by Zipcar in a pilot project in Boston.

In general, car sharing operations involving fixed stations are significantly simpler to implement than free-floating ones. They prevent the problem of vehicle clustering and also permit the installation of useful, fixed infrastructure, such as customer service kiosks
and charging points for electric vehicles. Station-bound systems are less appealing to customers, however, in that they are significantly less flexible.

1.3 Car sharing technology

Car sharing has a long history and very slow uptake spanning more than half a century. It began on a small scale in Europe in the late 1940s and only came of age in the mid-1990s (“Carsharing”, n.d.). As a result, there is wide variation in the technologies that enable the operation of CSOs worldwide. The simplest systems involve the use of lock-boxes (for car keys) and manual-entry, pen-and-paper log books (for tracking distance and time). Contemporary technologies involve complex, tightly integrated hardware and software components. These typically include:

1. Hardware installed behind the dashboard of the vehicle. This device features a GPS tracker, a wireless transceiver, and an interface with the car’s on-board diagnostic (OBD) system. It permits the location and tracking of all vehicles in the fleet in real time and relays valuable diagnostic information (such as fuel and oil levels) to the CSO. It also permits the vehicle to be unlocked without the use of a physical key.
2. Cloud-based, management software.
3. Mobile application software that permits members to locate, reserve, and unlock cars using their smartphones.
4. Optionally, a membership card that includes radio-frequency identification (RFID) technology to enable unlocking of vehicles in the case of mobile app failure.

1.4 Purpose and outline of this project

In March of 2015, BCAA entered the Vancouver car sharing market with Evo Car Share (“Evo”). The venture was immediately successful. Within eight weeks of launch, Evo had surpassed 9,000 members and was operationally profitable. However, Evo’s ongoing smooth operation was jeopardized by the unreliability and inflexibility of its car sharing platform, development of which BCAA had outsourced to the French company,
Vulog. (As outlined in Section 1.3, this platform included in-car hardware, management software, and a mobile app that permits Evo members to find, reserve, and unlock cars.)

This thesis will identify the strategic risks to Evo posed by the current implementation of Vulog’s car sharing platform. From BCAA’s perspective, the technical requirements of this system are:

1. Native mobile apps for Android and iOS
2. RFID-based key card entry
3. Responsive customer support
4. Data-driven analytics

This thesis will also explore a number of mitigation strategies. Implementation of the best of these strategies may result in BCAA’s ownership of a superior platform that could be used to power Evo and potentially serve as a new product offering for BCAA to market across North America.

The remainder of this thesis is divided into three large analyses that follow in subsequent chapters. In Chapter 2, we conduct a situational analysis, that is, we examine Evo’s current state. In Chapter 3, we consider the strategic vulnerabilities that Evo experiences through its dependence on Vulog by way of a fulcrum analysis and set the stage for our proposed solutions. In Chapter 4 we propose options for overcoming these in a solution analysis and enumerate criteria by which the options should be evaluated. We then make a recommendation to BCAA.
2: Situational Analysis

This strategic analysis of Evo Car Share is structured in three distinct parts: situational analysis, fulcrum analysis, and solution analysis. The situational analysis focuses on Evo as it is today. Topics include the firm's external environment, internal characteristics, current strategy, and financial performance (Boardman, Shapiro, & Vining, 2004). This discussion forms the basis for understanding Evo's current situation and for discovering strategic vulnerabilities, which are then discussed in later chapters.

2.1 Introduction

The British Columbia Automobile Association (BCAA) is a not-for-profit, member-based organization that supports and advocates for motorists and travellers. It is committed to delivering peace of mind to its members and customers across British Columbia and the Yukon through the provision of home, auto, and travel insurance, as well as delivery of emergency roadside assistance to drivers. BCAA is one of nine auto clubs affiliated with the Canadian Automobile Association (CAA) and has operated in this province for over 100 years. BCAA employs over 1,000 people and counts approximately 833,000 members; it serves nearly one in three households in British Columbia. In 2014, the organization generated $476.8 million in sales (an increase of 3.5% over 2013) and grew its net assets from $123.9 to $145.3 million.

In addition to generating sufficient revenue to continue building in a sustainable manner for the long-term benefit of members and customers, BCAA is committed to advocating on behalf of members for positive change, keeping BC’s communities healthy and safe, and taking care of the planet by managing its operations in an environmentally responsible manner. BCAA’s vision is to “be the most trusted organization in British Columbia, absolutely famous for doing the right thing.”

BCAA traces its history to 1906 with the formation of the Victoria Automobile Club, a group of motoring enthusiasts who gathered to enjoy their hobby and to help each other with breakdowns. In 1931, BCAA started to produce detailed road maps and in 1936
began to provide emergency roadside service that included free towing. The organization sold its first personal accident insurance policy in 1946 and followed this in 1954 with its first auto insurance plan. It was the province’s largest provider of car insurance until the establishment of the Insurance Corporation of British Columbia (ICBC), a Provincial Crown Corporation, in 1973. In that year, BCAA began selling home insurance. By 1989, it counted 500,000 members and was the fastest growing of all CAA affiliates. In 1992, BCAA relocated its headquarters from Vancouver to Burnaby.

Prior to 2015, BCAA was engaged in the following businesses:
1. Provision of member services and benefits, including roadside assistance, CAA dollars, and discounts on select shopping, dining, lodging, entertainment, health, travel, and automotive purchases.
2. Sale of insurance policies for home, automobile, and travel.
3. Auto travel planning and booking within North America.
4. Auto service, including its own Auto Service Centre and a network of approved auto repair service centres.

Given its long and successful history in serving drivers and travelers, and in alignment with its values of positive change and environmental stewardship, BCAA decided in 2014 to enter the car sharing business. In March of 2015, it launched Evo Car Share (“Evo”), a new service in the Vancouver market that competes with the following incumbents car2go, Modo, and Zipcar. Evo is not a subsidiary of BCAA in that it is not a separate legal entity, but is rather a branded division of the organization.

BCAA owns and maintains the 250 gas-electric hybrid Toyota Prius vehicles that constitute the current Evo fleet (Bouw, 2015), but outsourced development of the integrated hardware and software components that provide the technical foundation for sharing these cars. After an extensive search for a provider of an end-to-end solution for a free-floating car sharing operation, BCAA awarded the Evo contract to the French company, Vulog S.A.S. As outlined in Chapter 1, BCAA required in-car hardware, back-end software, and front-end software (both Evo- and customer-facing).
This thesis examines the strategic options available to BCAA that would mitigate the business risks posed to Evo by its reliance on Vulog. From BCAA’s perspective, a critical input to Evo’s business is supplied by a small, remote company of a different language and culture that has proven to be only sporadically responsive to BCAA’s needs and has furnished a product that is inflexible and not sufficiently reliable.

2.2 Industry analysis

The first step in developing a description of the firm’s current situation is to analyze the industry in which it competes. This analysis determines the attractiveness of the industry by examining the external forces that impact current and potential profitability (Boardman, Shapiro, & Vining, 2004).

2.2.1 The industry

After a long period of market stability, new personal communication technologies, urbanization, and changing consumer values are rapidly transforming the personal transportation industry. Population density is rising, cities are growing, roads are becoming increasingly crowded, and the luster of car ownership is waning. Simultaneously, consumers have become more focused on sustainability and the health of the planet. These factors, in combination with the high cost of gasoline, have raised the profile of alternative modes of transportation. In major cities across Canada and the US, a record number of commuters are taking public transit (“Statistics Canada”, 2011) or biking (McKenzie, 2014) to work. Driven by the ubiquity of the internet and smart devices (Fingas, 2014), real-time ridesharing and car sharing services are exploding (“Car sharing: number of users worldwide”, 2014). These changes have dramatically transformed a stale industry into a very dynamic one.

Dynamic markets differ from mature markets in that there may be little difference between competitors and substitutes (McKendrick & Carroll, 2001). In one context, alternative modes of transportation, taken together, can be seen as a substitute to owning a
car. Most people would not sell their cars to travel exclusively by bicycle throughout the year. However, taken together, biking to work in the summer, using public transit in the winter, and car sharing when needed could be a viable substitute to owning a car. Once a person has decided not to own a car, car sharing and other means of transportation become competitors; biking or car sharing could compete on any given day to fulfill the commuter’s needs.

2.2.1.1 Product-customer matrix for the personal transportation industry

An industry product-customer matrix is a graphical tool that represents the relationships between competing products or services in an industry and the various types of customers who consume them (Boardman & Vining, 1996). Table 2.1 captures the personal transportation industry in Vancouver (henceforth referred to as the “industry” in this thesis). Here, competitive transportation options are listed by row and customer segments (based on their trip-specific needs) are mapped as columns.

The first three options listed in this matrix – walking, cycling, and public transit – are similar in meeting customer requirements. They are all relatively low cost and environmentally sustainable, but are relatively less flexible in terms of traveling long distances, transporting others or in transporting goods. Contrast this to using a taxi, renting a car, or using one’s own vehicle, the scores are almost completely reversed; these transport modes score relatively highly in traveling long distances and transporting goods and people, but score low in terms of price and environmental sustainability. The third group of options, which includes carpooling and car sharing services, also score relatively highly for transporting goods and people, while being more cost effective and environmentally sustainable than the second group.
2.2.1.2 Strategic group map

A closer inspection of Vancouver car sharing industry reveals distinct differences between Evo and its direct competitors car2go, Modo, and Zipcar. These firms use a number of strategies to differentiate their services; these are captured in the strategic group map shown in Table 2.2. A strategic group map aids in the determination of how competitors differentiate their services (Daems & Thomas, 1994). One of the key differences between these competitors is user choice versus simplicity and peace of mind. For example, both Modo and Zipcar provide choice in terms of fee structures and car models. Evo and car2go focus instead on simplicity. These two firms offer an easily understood per-minute rate, single car model, and very flexible car pickup and drop off. Evo further differentiates itself by including a multi-purpose sports rack on top of each car, allowing Evo to fulfill bicycle and ski transport use cases. Inter-firm industry rivalry is explored further in the Section 2.2.4.
Table 2.2 Strategic group map of the Vancouver car sharing industry (developed by the authors). Red = high, orange = medium, yellow = low.

<table>
<thead>
<tr>
<th>Low Signup Fee</th>
<th>Low Monthly Fee</th>
<th>Low Usage Rate</th>
<th>Pickup Flexibility</th>
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<th>Size of Home Area</th>
<th>Fleet Size</th>
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</table>
2.2.2 Industry supply chain

Analysis of the industry supply chain reveals the extent to which competing firms are vertically integrated. The generic car sharing service supply chain is shown in Figure 2.1. In principle, a fully integrated firm could supply the cars themselves, the car management hardware, and the software that interfaces with the hardware. This software would be used both by the firm for fleet management and by drivers to reserve and unlock cars. Evo’s biggest competitor, car2go, is the most integrated of the Vancouver-based CSOs. It deploys cars manufactured by the parent company, Daimler, and software that is built in-house. The other three car sharing vendors in Vancouver, Evo, Modo and Zipcar, procure their fleets and software from the open market.

![Diagram of the industry supply chain for car sharing](image)

Figure 2.1 High-level overview of the industry supply chain for car sharing (developed by the authors).
2.2.3 Industry Overview

The Vancouver car sharing industry is a local oligopoly comprising four dominant players: Evo, car2go, Modo, and ZipCar. In general, rival firms in oligopolies closely monitor the actions of the other firms and adjust their strategies accordingly to compete on either production or price (“Competition Counts”, 2015). The firms in Vancouver’s car sharing market compete on fleet size and on differentiation. Therefore, it is likely that if one firm expands its fleet, the others will follow suit. If a firm were to lower prices to take market share, the others would probably mimic the behaviour, resulting in another temporarily stable price point. It is not clear which organization is the price leader in car sharing, but it is likely the first entrants that established the current pricing benchmark. In this market, that would be Modo for a monthly membership fee structure and car2go for a one-time membership fee structure.

Since the Vancouver market is currently underserved, it is healthy for firms to compete on “production,” which in the case of car sharing is fleet size. In fact, Evo is in the process of expanding its fleet as this thesis is being produced. This strategy is expected for a new entrant into an oligopoly.

Product differentiation among the competitive group includes fleet composition, accessories added to the vehicles to target unique markets, branding, pricing structure (monthly vs. one-time, by the minute, hour, or day), and rental model (round trip vs. free floating vs. point-to-point). This is in addition to the firm’s fleet size, which is also a strong differentiator. The more vehicles a firm has on the roads, the higher the visibility and likelihood of a customer to find and select one of its vehicles over a competitor’s. This could be based on either preference or convenience for the customer.

Launched in March of 2015, Evo is the newest entrant into the Vancouver car sharing market. There have been no exits since Modo began servicing Vancouver in January of 1997 (Jansen, 2011). This market has been in place for 18 years, but the traction and visibility of car sharing has significantly increased only in recent years, in part due to
governments support and increased housing density in the downtown core. This had led the market to its current stage of high growth and a virtuous cycle of car sharing: the more members a car sharing service gains, the more cars the vendor puts on the road, the easier it is for a member to find a car, the more members the car sharing service gains.

2.2.4 Augmented “5-forces” model of industry competitiveness

Vancouver’s car sharing industry consists of four companies: car2go, Modo, Zipcar, and Evo. The four firms compete on a number of differentiation strategies, not on price. These differentiations have been highlighted and assessed in the strategic group map shown in Table 2.2. Based on the nature of the industry’s strategic group, Porter’s 5 forces model (described below) describes the industry's competitiveness as a whole and not that of any single car sharing company exclusively. This model is useful in determining whether an industry as a whole is attractive and how the firms within it compete (Porter, 1980). Please note the terms substitutes and complements are sometimes interchanged in the text below, depending on the context (complementary goods offer more value to the consumer together than when they are apart, whereas substitutes are alternative goods or services that could replace one another (Nicholson, 1998). This is due to the fact that cycling, walking, taking transit, and carpooling are complementary to car sharing, but could also be considered substitutes in a different scenario. For example, if an individual is commuting 20 km with a final destination just outside the home zone, walking and car sharing are complements, but if an individual is commuting 1 km, walking and car sharing become substitutes for one another. There are a myriad of different scenarios where one mode of transportation may act as either a complement or substitute to car sharing, so for the sake of this analysis, it will be made clear whether they are being considered as one versus the other.

2.2.4.1 Industry rivalry – low

There are currently only four companies competing in this space, and there is a large, growing market to serve. In fact, the more car sharing services, sharing vehicles, and complements available, the more likely individuals are to consider using a car sharing service as part of their commuting strategy. In any sharing economy, network effects
provide a positive reinforcement loop; the more resources and complements available, the more likely people are to sign up to use the service, which leads to additional resources and complements, etc.

In the local car sharing industry, where companies compete on differentiation rather than price, it is likely that a customer will belong to more than one CSO, and select a different provider depending on the requirements of a given trip. For example, if a consumer is making a short trip to pick up groceries within a few kilometres of their home or making a family trip to the park, he or she may choose a different CSO for each scenario, for example car2go for groceries (small car) and Evo for family outing (large car). In another scenario, differentiation may not even be a factor as a consumer may select a provider solely based on proximity to the vehicle.

The key differentiators among the four car sharing providers in Vancouver are:

1. Evo
   a. Extra accessories included, such as ski and bike racks (BC lifestyle focus)
   b. Identifiable fleet of hybrid vehicles (sustainability focus)
   c. Extra room in vehicle for passengers or transporting materials
   d. Ability to reserve a vehicle in advance
   e. High visibility; parking spots and vehicles can be spotted all over the city
   f. Free floating flexibility
   g. One-time membership fee, free for BCAA members
   h. Fast check-in/check-out

2. Zipcar
   a. Fleet includes a variety of car types
   b. Large home area
   c. Low monthly membership fees
   d. Membership gives you access to cars around the globe

3. Modo
   a. Co-op option
   b. Fleet includes a variety of car types
c. Inexpensive

d. Low monthly membership fees

4. car2go

   a. Identifiable fleet of smart cars
   b. Large home area
   c. High visibility; parking spots and vehicles can be spotted all over the city
   d. Free floating flexibility
   e. One-time membership fee

At this time in the development of Vancouver’s car sharing industry, the service providers are working in tandem to usher in and support the adoption of car sharing by proving its validity as an alternative for individuals to owning one, or more than one, vehicle. In this regard, all the car sharing companies are complementors in building the industry, yet competitive in dividing the market and differentiating themselves from each other.

With few firms competing on the basis of differentiation, there is a low level of rivalry within the car sharing industry at this time and great growth potential. This makes the industry susceptible to new entrants, and allows the current competing firms to capture strong margins and revenues instead of competing on price. The car sharing companies should be wary of an influx of new competitors as this will decrease the power of each firm in the industry and the stable oligopoly that is currently in place could crumble over time.

2.2.4.2 Power of suppliers – high

Car sharing companies such as Evo, Modo, car2go, and Zipcar rely heavily on their car sharing platforms. These platforms consist of the hardware that is installed in the vehicles, the back-end software, and the end-user application (web or mobile). Providers can source this platform from a single provider, a number of different providers, or develop their own in-house solution.

The car sharing platform is critical to the operation of every CSO due to their reliance on vehicle, operator, and customer connectivity. If any portion of the car sharing
platform fails at any time, service outages occur. These outages can negatively affect a customer's user experience as well as a car sharing company’s reputation and future business, especially in the initial stages of operation. The end-user application is also the first point of contact for the customer and their initial experience with the service. Customers will commonly compare front end software between services and therefore, a customer is more likely to be a repeat customer with the service that provides the most straightforward, appealing front end software and the best user experience. Also, the reliability and speed at which a customer can enter/exit and login/logout of a vehicle, whether that be by RFID card or application, is critical to becoming the preferred service provider.

Car sharing companies that source any portion of the platform are susceptible to supplier hold-up. car2go, which operates internationally, has developed its own in-house platform to eliminate the risk of hold-up. However, this threat is still present for Evo, Modo, and ZipCar, and these organizations must take measures to reduce, or eliminate, their exposure to this risk. For example, Evo is susceptible to supplier hold-up by Vulog due to the large amount of money invested in rolling the car sharing platform for their operations on launch. At this point, switching platforms would be complicated and even result in additional service outages that could be damaging to the company’s reputation and future revenues. The sunk transaction, learning, and setup costs, along with the added capital cost of switching platforms, is a quasi-rent that could be easily realized and collected by an opportunistic vendor.

Another consideration of suppliers to the car sharing industry are the car manufacturing companies. Some car sharing organizations lease large numbers of the same vehicles from manufacturers and then rely on those specific vehicles for maintenance consistency and branding purposes. For example, Evo’s fleet consists entirely of the same model of Toyota Prius and, similarly, car2go’s fleet is exclusively composed of Smart Cars. This creates an interesting dynamic between the manufacturer and the car sharing company. The large quantity of cars leased undoubtedly provides the car sharing company with significant leverage when negotiating bulk discounts; on the other hand, the car
The manufacturer becomes a monopoly seller which increases their negotiating power. It is likely the negotiating power shifts from the car sharing company to the car manufacturer over time. Initially, car manufacturers are more flexible in pricing in order to secure a large purchase order, but their flexibility becomes more rigid as they become aware the car sharing company has no other choice than to lease the same vehicles in order to remain consistent in their costly branding and marketing strategies, as well as limit any added costs that would be incurred from revising existing maintenance contracts. This susceptibility is only relevant for Evo and car2go, as Modo and ZipCar use a variety of vehicle brands and types.

The power of suppliers of car sharing platforms in this industry is high and should be a strategic consideration for any car sharing provider currently competing or considering entering this industry.

2.2.4.3 Power of buyers – moderate

Users of car sharing platforms in British Columbia have a number of commuting options including, but not limited to, walking, transiting, cycling, taking taxis, and owning a car. Though there are few firms competing in the car sharing industry, this realization gives buyers a relatively high level of power, as switching costs between the providers is quite low. For example, car2Go and Evo one-time membership fees are the highest in the industry but are still a mere $35.00, encouraging people to sign up for a number of different services depending on each unique trip’s requirements (“Evo Car Share Rates”, 2015) (“What does car2go cost?”, 2015). Beyond that, the power of buyers starts diminishing.

The population in the Lower Mainland, as at the last recorded census in 2011, was 2.59 million people (Statistics Canada, 2011). There are currently four car sharing platforms and only approximately 1000 vehicles in service as of 2014, we can estimate there are closer to 1250 today with Evo’s entrance into the market (“The Metro Vancouver Car Share Study”, 2014). These figures highlight an industry with a large, growing number of buyers, and a disproportionately small number of firms providing car sharing services. This puts users in a position where they largely outnumber the shared cars available. Since the car sharing services are differentiated, it is difficult (or impossible) for users to get the
same experience, or product, from one car sharing provider to another competing firm. For example, if a user wants a ski or bike rack on their shared car, they only have one option - Evo. In addition, there are a relatively low number of transactions per buyer, limiting their influence over an individual firm or the industry as a whole.

In order to be eligible to drive a shared car or gain membership to a car sharing service, one must be insurable. Therefore, not every individual with a valid driver’s license, 1.92 million people in the Lower Mainland as at 2014, is a suitable member (Quick Statistics, 2015). In fact, not even everyone of legal driving age is eligible. If an individual has a poor driving record and the Canadian government has revoked their privilege to hold a driver’s license for a period of time or permanently, they are unable to become a car sharing member. Once again, buyer power is diminished, as legal criteria filters out those who could potentially be a liability, financially or reputationally, to the car sharing companies. This protects the firms and provides them with necessary power over unsuitable buyers.

In summary, the power of buyers in the car sharing market is rated as a medium risk to the industry as a whole. Buyers have low switching costs, which decreases loyalty to brand and enables them to select freely from a number of providers. On the other hand, the government protects the car sharing companies and buyers outnumber shared cars at this time. There are a number of variables in flux that could change this score in the near-term, and therefore any firms that are currently competing should monitor these potential changes and react accordingly.

2.2.4.4 Threat of entrants – high

There are currently only four firms competing in the British Columbia car sharing market. It is a relatively new, low-competitive, profitable, and growing market. These few firms in the industry are competing solely on differentiation at this point, not on price due to the nature of the car sharing landscape in Vancouver as it sits today. With a minimal number of players in this relatively new market, customer brand recognition isn’t a challenge at this point and the barrier to entry is low.
In order to compete in the car sharing market, a large amount of capital is required to source the vehicles themselves as well as the platform to enable the service. Beyond the initial capital investments, it is a fairly easy industry for new firms to compete in and share in the growing profit pool. Every element from the cars themselves, hardware, application, to the end-user software can be outsourced and provide a sufficiently high level of service to compete against the current firms. There is no exclusivity, intellectual property, or proprietary technology required to operate. Switching costs for customers are also low, so they can be easily enticed to move to a new provider with a new feature set that may be tailored more to their requirements at that time.

In addition, it would not take a new entrant long to get their operations up and running. The administrative challenges have already been overcome: regulatory requirements, parking agreements, and building an install base that understands the value proposition. All of these elements, and the time and money required to execute, have already been sorted out and taken care of by the first few car sharing providers that entered the market. Government support for car sharing is only increasing with Vancouver’s goal to become the greenest city in the world by 2020 (“Greenest City 2020”, 2014).

On the other hand, the economies of scale in this industry are relatively low, so profits tend to be relatively linear. There are no government subsidies to entice new firms to enter the British Columbia car sharing market specifically over any other province in Canada and there may be regulations in the future to limit competition and restrict parking and licensing.

Taking all of these elements into consideration, the threat of new entrants in the Vancouver car sharing market is worryingly high, as there are a number of capital-rich organizations who could choose to diversify and start competing in this industry within a relatively short period of time.
2.2.4.5 Threat of substitution – low

When we look at the personal transportation industry from a holistic viewpoint, the substitutions to car sharing services include:

- Walking
- Cycling
- Public transit
- Carpooling
- Owning a car
- Traditional car rentals
- Taxi cabs
- Uber (not in Vancouver as of publish date of this thesis)

Though all of these listed are substitutes, the only real threat to the car sharing industry is car ownership. There are a myriad of other substitutions that come in to play in the car sharing industry, including walking, cycling, and public transit, but none are as threatening as car ownership. That is due to the fact that car ownership can take the place of all of the substitutes that provide the different services, i.e. taking a person from point A to B (short or long haul trips), transporting goods, and on-demand transportation that is fast and reliable. The downsides to car ownership are the costs associated (i.e. gas, insurance, maintenance), the infeasibility if you live and/or work in an urban centre (without residential or commercial dedicated parking stalls), the negative environmental effects due to emissions and general pollution, and lastly, the opportunity costs incurred by underuse.

Not one type of individual uses car sharing exclusively. Instead personal transportation is a combination of the above listed products and services, depending on the specifics of the situation. If using these products and services in combination can serve a user’s transportation requirements at a lower price point than car ownership, they may choose to forgo the traditional route and become a car sharing member. Therefore, outside of car ownership, the substitutes listed can realistically all act and be categorized as complements to car sharing, the degree of which varies based on each customer and each unique trip’s requirements.
The government is also assisting in holding out other potential substitutes, such as Uber, which is actively, and legally, operating in other Canadian major cities such as Toronto, Ontario. The city has delayed putting in place regulations and provide permits and/or licenses that would allow Uber drivers to compete alongside taxi drivers in the personal transportation industry (Unger, 2015). Though Uber may not compete directly with car sharing, it is another option for individuals to have in their arsenal of public transportation requirements, and could encourage Vancouver residents to forego purchasing a vehicle, or an extra vehicle, which would open up the accessible market for car sharing providers also, depending on the user and trip requirements.

It seems upon first glance that there are a number of substitutions for car sharing services, but upon further inspection, it becomes clear that a number of these are in fact complementary and act to encourage a wider audience of users requiring personal transportation by providing a variety of options for individuals to access. The threat to the car sharing industry is car ownership, and this threat is diminishing in urban centres where there is increasingly less access to personal and commercial parking. The threat of substitutes should not concern current or new entrants into the Vancouver car sharing market.

2.2.5 Industry and Competitive Dynamics

The industry and competitive dynamics of the car sharing market bear positively for its growth. The PEST analysis in Figure 2.2 has been conducted to thoroughly examine the current factors for the industry.
Figure 2.2 PEST analysis of the car sharing industry in Vancouver (developed by the authors).

The political factors mostly favour the car sharing industry. There is provincial support for more green transportation, including bike lanes, improved and increased transit options, and other similar initiatives. The government has embraced these environmentally friendly activities as a move towards becoming the “Greenest City” in the world by 2020 (“Greenest City 2020”, 2014). There are a number of measurable targets that the city is planning on putting into action over the next five years to earn this title and the emphasis on green transportation is pushing the city to continue encouraging the use of alternate transportation beyond car ownership. Car sharing organizations should also bear caution though if these green transportation initiatives target all cars. For example, if the city banned all vehicles from entering the Vancouver downtown core, this would not bear favourably on car sharing firms. Evo also has first-hand experience acquiring parking permits, which can take months of negotiations to get through the political red-tape. It is also possible that the current regulations that are keeping Uber from operating in Vancouver could be lifted, which would add another substitute to the market. The effect of
Uber entering the market would not directly compete with car sharing, but it could offer individuals another option beyond car ownership (which would be favourable).

The economic factors for car sharing are mixed. In Vancouver, the car sharing firms do not currently compete on price, which provides a simple fee structure that is shared across all companies. All four car sharing organizations charge a membership fee and layer on a per minute/hour/daily rate on top of that. The oligopolistic structure of the market keeps the companies in financially good health by keeping prices firm, instead of commoditizing the service and driving margins to zero. Unfortunately, the poor exchange rate between the Canadian Dollar and the United States Dollar is currently affecting Canadian businesses purchasing large assets, including vehicles. Evo is potentially paying significantly more for any assets they are acquiring during this time.

On the positive side, there are currently very low interest and financing rates for vehicles. This allowed Evo to procure its fleet, and will allow them to expand it, at a good rate. On the flip side, costs could increase if these rates increased. Similarly, the price of gas is relatively low at this time which would encourage individuals to own and drive their own vehicles. As financing rates and the price of gas fluctuates, car sharing firms need to keep a close eye on these factors as it will affect their customers’ behaviour, their business, and their bottom line.

The social factors affecting the car sharing industry are interesting but fare positively for the industry. There is a shift occurring in the urban communities of British Columbia where millennials are living and working downtown in large condominiums or high-rise complexes with limited parking. Coupled with the green initiatives the community has undertaken towards a healthier environment and lifestyle, people don’t have the desire, or luxury, to drive or own a vehicle in the same way that people had previously. Due to this, driver's licenses have become less of a necessity and car ownership has become less of a status symbol or aspiration for a growing percentage of the community. This opens up a market for Evo and other car sharing companies for those
individuals who cannot, or do not want to own a vehicle, and only to use one when needed or desired with limited investment.

Lastly, the technological factors bearing weight on the car sharing market could provide the existing firms, or new entrants, with additional competitive advantages. With the research and development occurring in vehicles at this time, and the expectation that technology be ubiquitous in all areas of life, the car sharing market could take advantages of these technological advances. Unfortunately, these advances may not be public knowledge and first mover advantage may come into play for capturing additional market share with these features. Car sharing organizations will need to keep close ties with their car manufacturers to ensure they are current with technological advances that could give rise to competitive advantages in the car sharing market.

2.3 Internal analysis

An internal analysis can be used to identify current and potential sources of competitive advantage, disadvantages, as well as factors that could act as impediments to sustaining any competitive advantages (Boardman, Shapiro, & Vining, 2004). It also aids in defining the current strategy of the firm, discovering gaps in the current strategy and to discuss strategic alternatives.

2.3.1 Value chain analysis

A useful tool to identify and assess the activities necessary in providing goods and services is Michael Porter’s Value Chain Model (Porter, 1985). The model works by breaking down the activities into primary activities, which transform raw inputs into consumable outputs, and secondary activities that coordinate and support the primary activities. The value added at each activity is defined either by increasing the customer’s willingness to pay or by reducing the cost of the end product to the firm. Thus the Value Chain Model aids in the identification of the sources of competitive advantage. The Value Chain for the Evo service can be found in Figure 2.3. All activities, unless noted otherwise, are performed by BCAA.
**Firm Infrastructure:** Division of BCAA

**Human Resource Management:** Use internal BCAA HR team

**Technology Development:**
- Car management hardware [1]
- Fleet management software [1]
- Car management software [1]
- End user software [1]
- Client relationship management systems
- Financial systems
- Billing systems [1][2]

**Procurement:**
- Car fleet
- Car management hardware
- RFID cards
- Identifying and negotiating with service providers
- Identifying and negotiating parking contracts

**Inbound Logistics:**
- Car fleet
- Fleet management software [1]
- Car management hardware [1]
- End user software

**Operations:**
- Car hardware assembly [2]
- Fleet branding [2]
- Integration of software and IT systems

**Outbound Logistics:**
- Car reservations, check-in and pick-up [3]
- Check-out [3]
- Automated billing
- Optimize location of fleet [2]

**Marketing & Sales:**
- Product management
- Branding
- Ads

**Service:**
- On location car maintenance [2]
- Fleet servicing [2]
- 24x7 customer service centre

[1] Activities outsourced to Vulog
[2] Activities outsourced to other firms
[3] Activities performed by the Evo customer

*Figure 2.3 Evo’s value chain (developed by the authors)*
2.3.1.1 Primary activities

The first group of primary activities in the delivery of the Evo service is the Inbound Logistics (Figure 2.3). Included in this grouping are the raw inputs to create the Evo service, including the car fleet, the hardware that enables car management, the software that enables the car fleet to be managed, and the software that enables customers to use the service.

BCAA has chosen to use one model for the entire Evo car fleet. Procuring 250 cars from a single manufacturer likely allowed BCAA to negotiate better lease rates and terms, lowering the cost of the service. A single model also lowered the time to market as the custom branding, hardware purchase and installation all had to accommodate only one model. BCAA also decided to outsource the fleet management software, the car management hardware and the customer facing software. The car management hardware reports the health of the car, mileage, gas levels, and allows for remote unlock and engine start. Though this type of hardware is a requirement for a car sharing service, it is also a commodity and relatively easy to obtain. Purchasing the hardware from the same vendor that creates the software should ensure that the two work in a more integrated, stable fashion, and would likely undergo more consistent and thorough testing.

The customer-facing software is the client’s interface for interacting with the Evo service. It is therefore instrumental to the overall user experience. The software must be pleasant to use, intuitive to navigate, responsive to user input, and stable. Great software can truly differentiate Evo from their competitors, and can directly impact a customer’s decision to use Evo or a competitor for the next trip. Both the Vulog web application and mobile app have a number of usability and stability issues that may tarnish the Evo customer experience. This is truly a strategic vulnerability where Evo could further differentiate itself to greatly increase their customers’ satisfaction and therefore their willingness to pay.
The fleet management software is required for BCAA to be able to manage their fleet of Evo cars. This activity was also outsourced to Vulog, and it reports standard information such as where each car is located, the state of the car, fuel levels, and whether maintenance is required. Where the software falls short is in analytics. The information that this software already gathers from the fleet can be used to predict load levels, optimize car locations, and forecast revenue, all in real time. There is a definite opportunity to optimize the use of the Evo fleet and cut costs in running the Evo service.

The second class of primary activities is Operations, where raw inputs are transformed into outputs usable by clients. This is the stage where the fleet is outfitted with the car management hardware and the software is integrated with BCAA’s internal systems, including their client relationship management systems, financial systems, and billing systems. The integration of the Vulog software and the BCAA systems leaves much to be desired. The systems do not communicate in real time and much of the communication is done in a suboptimal fashion, which leads to data points that are out of sync and require manual re-entry or verification. This leads to increased labour costs, and potentially a poor user experience if data needs to be verified.

Outbound Logistics, which is delivering the service to the client, is the third class of primary activities. As the Evo service supports automated car reservation, check-in, and check-out, the client actually performs much of this activity for Evo. This not only reduces the labour costs for these tasks, it also simultaneously increases the client’s willingness to pay due to the improved user experience. Automated billing based on mileage and time spent driving is also performed, which increases both the billing accuracy and transparency to the client. This perceived benefit will increase the client’s satisfaction and trust of the service, thereby once more increasing their willingness to pay. In this case, because the billing is automated, it also helps reduce labour costs to BCAA.

To maximize the availability of vehicles to their members, BCAA also works to optimize the location of their Evo fleet. This activity is currently done manually, with BCAA staff monitoring usage and tasking an external firm to relocate the Evo cars. With proper analytics and data mining, this could be done in a more automated, data-driven
fashion, which will allow lower costs and create a better service for their customers. An innovative alternative is to outsource the physical car relocation activity to Evo members, and either lower their fee for this task or potentially even pay the member to do so. This would be similar to a relocation cruise, and could substantially lower the cost to BCAA and increase member satisfaction.

The unique brand, market placement, and positioning of Evo within the Vancouver market truly sets it apart from its competitors in the Marketing and Sales portion of the value chain. The Evo product was built to “accommodate the social and active lifestyles of British Columbians” (Bouw, 2015). To support this message, all Evo cars include sports racks built to accommodate bikes, skis, and snowboards, while having enough room for up to five passengers. Also, each car in the Evo fleet is the same, with the all-black exterior and bright blue accents, ensuring clients get a consistent experience between rides. Evo advertisements consistently convey the message that the Evo service is the top car sharing service if you value the active, outdoor, BC lifestyle with your friends. This effective marketing and unique placement helps Evo stand out from their competitors, and is a source of competitive advantage.

The fifth and final primary activity in Porter’s Value Chain is Service; for Evo this can be broken down to three main categories: on-location car maintenance, fleet servicing, and the 24x7 customer service centre. BCAA currently outsources the on-location car maintenance and refuelling, as well as the maintenance of the fleet to an external firm. Depending on costs, these could be activities BCAA eventually brings in-house; BCAA has a well-managed fleet of service vehicles which are scattered throughout the Evo service area. As well as service centres which could be used to maintain the Evo fleet. The 24x7 customer service centre model was already in place for other BCAA services, which allowed BCAA to easily extend the model to cover the needs for Evo. Leveraging existing infrastructure for the customer service centre helps maintain a cost advantage that Evo has over their competitors, which they may be able to further extend with in-sourcing the on-location and long term car maintenance.
2.3.1.2 Secondary activities

In Porter’s Value Chain, secondary activities are defined by activities that coordinate and support the primary activities. These secondary activities are categorized as firm infrastructure, human resource management, technology development, and procurement.

For both the firm infrastructure and human resource management, BCAA decided to use the existing BCAA infrastructure and situate the Evo business unit as a division of BCAA. This allowed Evo to exist within a well-established and well-managed company. It also allowed Evo, when recruiting industry talent, to leverage the fact that BCAA is rated one of Canada’s 50 Best Employers for 2015 (BCAA, n.d.). The Evo service is absolutely aligned with BCAA’s core values of advocating for positive change and operating in an environmentally responsible manner. Leveraging the trusted and well-known BCAA brand and institutional strength gives Evo a strong advantage over their competitors, while simultaneously lowering costs. This is a source of a strong competitive advantage.

In terms of technology management, BCAA has a number of existing systems that needed to be integrated with Evo, such as its client relationship management systems and financial systems. Much of this software already existed, but needed to be modified to work with the systems used for Evo. These include the fleet management software, car management software, and end user software, all of which were procured from Vulog. Vulog actively maintains these systems and adds new features, albeit at its own pace and according to its own priorities. This places Evo in a competitive disadvantage relative to firms that are more agile in terms of their technology development, as Evo cannot quickly adapt to evolving customer needs and tastes, or immediately fix software bugs that impact their customers and negatively affect the Evo brand.

BCAA is a large firm with no debt and an enviable balance sheet. This allows them to take advantage of capital intensive opportunities more quickly and cheaply than many of their smaller competitors. They also have existing relationships with car manufacturers, as well as municipal and provincial governments, that would allow them to negotiations
more efficiently and effectively than younger, less established firms. An example of this is the parking contracts signed with municipal governments as well as private parking firms. They may have been able to negotiate quicker, more favourable contracts due to their existing relationships, existing contracts for other services, their favourable standing in the local and provincial communities, and the fact that they are a large, local employer with over 1000 employees. Procurement is a strong source of competitive advantage for Evo, and one that should be leveraged.

2.3.2 Relational management analysis

Evo interacts with and manages a number of external competitive and collaborative forces. The external competitive forces include the car sharing platform provider, Vulog, the car manufacturer, Toyota, and the industry competitors (car2go, Modo, and ZipCar), and the British Columbia and municipal governments. The collaborative and internal force Evo interacts with in an almost ubiquitous fashion is BCAA and their internal team.

Evo’s relationship with its car sharing platform provider, Vulog, presents a number of challenges. Vulog is based in the south of France, has predominantly French-speaking employees, operates in a time zone that is nine hours ahead of British Columbia’s, and is part of a wholly different culture. Herein lies a number of challenges that Evo must attempt to overcome.

One of the relational challenges with Vulog being a French-speaking primary company and Evo an English-speaking primary organization, is a language barrier. This language barrier could lead to misunderstandings in product requirements, deadlines, or a number of other pertinent details being misunderstood or overlooked. Also, with the operations taking place in radically different time zones, it is difficult for Evo employees to speak directly with Vulog employees. In addition, if a problem arises early in the day for Evo in British Columbia, it may already be after work hours in France, and a full day of operations for Evo could be lost while waiting for the next workday to start in France before receiving support.
The work culture in France is very different than that in Canada, where the expectation is a 35-hour work week and vacation allotment is guaranteed at seven weeks of vacation per year (Government of Canada, 2005). This can cause challenges for Evo, as a majority of this vacation time is taken in the summer, which could leave the car sharing company with limited opportunity for product development, and more importantly, without support for its platform during this time if an outage or other problem occurred. Vulog also holds a wealth of analytical information that Evo could potentially use to streamline its operations, increase revenues, and enable them to make data-driven decisions. Unfortunately, Evo does not have direct access to the information that Vulog holds.

In addition, Evo is not Vulog’s only customer. Vulog has an estimated eighteen employees and services approximately a dozen CSOs, primarily in Europe. Due to that, even though a serious outage may occur for Evo impacting customers and their business, it may not be the highest priority for Vulog to respond to, depending on what other issues are occurring with other customers at that time, or where Evo sits in that queue. Vulog has limited resources which, unfortunately, decreases their responsiveness and increases their response time, making it a challenge to do anything in a prompt fashion.

In order to mitigate the negative forces that arise from Evo’s relationship with Vulog, BCAA now has a dedicated Vulog employee co-located in its Burnaby headquarters. Though this has reduced the prevalence of some challenges, it has not solved a number of them. Evo’s reliance on Vulog to operate a crucial aspect of its business makes the organization highly susceptible to vendor hold-up and Evo will need to look at alternative measures to mitigate this risk.

Evo’s relationship with the car manufacturer, Toyota, is another external force that must be managed closely. Evo launched with a fleet exclusively composed of black Toyota Prius vehicles with bright blue accents, and their branding and marketing strategies has relied heavily on the features and functionality of the vehicle, including the large interior size, ability to carry five passengers, and the fact that it is a hybrid vehicle. As discussed in Section 2.2.4, it will be difficult for Evo to hold the power in this relationship now that
their branding and value proposition has been built around the Prius vehicle. Toyota is a large corporation and Evo’s business is minor in comparison to its global sales. However, BCAA does have mitigating strategies to level the playing field; as the vehicles were purchased in bulk, when it is time to renew BCAA will investigate switching to different manufactures for that bulk purchase. Thought is may not be ideal to switch a portion of Evo’s fleet to a different car model, it is a definite option and will allow BCAA to negotiate with Toyota from a position of strength.

Evo’s relationship with their industry competitors, car2go, Modo, and Zipcar, is an oligopoly in nature where the four firms dominate. The industry’s firms compete on fleet size and differentiation, not on price. The industry leaders, in this case the first entrants, have set the price and all other firms have followed suit. This is very common in oligopolies, and the car sharing market is no different. In this type of market structure, it is critical for Evo to monitor its competitors’ moves. If one firm increases its fleet size or decreases price, it is likely the whole market will follow suit in order to maintain the market share. These actions, if radically taken, can lead to decreased rents and margins for all firms unless the market continues to grow in size. The risk of this occurring is low at the current time as the market is still in a high-growth state, but Evo should strive to become the industry leader before that growth stalls in order to control the future of the company’s margins and costs.

The internal relationship Evo works most collaboratively and closely with is BCAA and its internal staff. Evo presents BCAA with a new business opportunity in the car sharing industry as well as access to a large potential pool of younger generation customers, the millennials. This relationship also presents both Evo and BCAA with an increased database of customer information and analytics to draw upon. Both companies are in a better position to put this data to use and tailor and improve their services for their customer base, and rise above the competition.

This internal relationship can also be complicated for staff. Presumably, departments responsible for both organizations may find themselves in situations where
they “serve two masters” (Evo and BCAA), where decisions made could be more favourable or detrimental to one over the other. This could potentially make it very difficult to make sound business decisions for Evo. Personal biases could also be at play, or executive sponsorship of a project, which could sway the internal decision-making process. This could lead to an unfortunate and potentially detrimental and costly decisions being made for one or both business lines.

It is clear Evo must manage a number of relationships in order to successfully tackle the car sharing market. It has had a strong start, but there are relationships that are threatening its future and others that must be monitored and dealt with carefully in order to mitigate any of the risks that could present themselves in this situation.

2.3.3 **Sustainability analysis and strategic assets**

In order to correctly identify Evo’s sustainability against competition as well as the company’s strategic assets, an analysis of the firms’ SWOT (Strengths, Weaknesses, Opportunities and Threats) was conducted and can be viewed below in Figure 2.4.
A number of Evo’s strengths are susceptible to erosion by competition. For example, the addition of the ski/bike racks and the fleet of Prius’, which offer more room for passengers and objects than some of the competitors’ vehicles. These can be easily imitated by competing firms with little investment in time or money. The reliable hardware component in their fleet is also easily imitable as it is currently sourced and purchased through a third party manufacturer, which is accessible to all competitors and new entrants.

A number of Evo’s sustainable advantages lie in BCAA’s strongly rooted reputation, customer service, and installed base in British Columbia and their strong branding and marketing strategy. These resources hold the VRIN framework characteristics necessary for a sustainable competitive advantage; all of them are valuable, rare, inimitable, and non-substitutable. This provides Evo with a strong advantage over the firms competing in the province with no previous history, positive or negative, with its future customers.
Evo’s weaknesses all point to their car sharing platform, Vulog, which provides them with the hardware, application, and back-end software required to operate their business. Since Evo’s launch in March, they have had a number of service failures resulting in lost revenues and potentially reputational damage. They also have limited visibility on analytics due to the elementary features of the back-end software and the inability to customize reports and manipulate data as an administrator of the program. Instead, Evo must rely on Vulog for much of the reporting, which is unfortunately highly rudimentary in its own right. Proper reporting and analytics would further the ability for Evo to streamline their operations, and will allow Evo to increase rents and compete at a higher level in the industry. Compounding these weaknesses, Evo is also open to vendor hold-up by Vulog.

Launching Evo itself provides an opportunity for BCAA to compete and build market share in a new industry, and provide a new revenue stream to their business. In addition, it provides the opportunity for BCAA to gain increased insight into its current customer base by monitoring additional patterns and behaviours that members express. The reporting output from the car sharing platform used would have to be increased in order to capitalize on this opportunity, but it is a potential advantage to increase the value both Evo and BCAA could provide its customers.

The potential threats to Evo’s business also lie in the outsourced car sharing platform. The company’s reliance on Vulog threaten Evo’s operations and margins. The lack of in-house control over reporting is a concern, but troubleshooting in the event of a service outage is even more worrying. Relying on Vulog to repair service outages is a concern due to the language barriers and differences in time-zone, Evo could potentially suffer reputational damages without the ability to prevent or correct service issues in the manner or timeline they might otherwise be. These outages also threaten their customer retention; if customers find other car sharing providers’ services to be more reliable, they may choose to take their business to another provider. Lacking control over the platform could also have long term implications; BCAA may not be able to pivot strategies or to
modify the application to suit trends or changing customer requirements as quickly as competitors who do have control over their car sharing platform.

Evo’s strategic assets lie disproportionately in its affiliation to BCAA at this point. However, Evo’s strong value proposition and marketing strategy, coupled with this affiliation, is likely to enable the company to thrive while the market is growing and few firms are competing.

2.4 Current strategy

The following section presents an analysis of Evo’s current strategy using the framework developed over the last four decades by Porter. In this context, a good strategy describes “how an organization, faced with competition, will achieve superior performance” (Magretta, 2011). Sustained superior performance necessarily means that the organization has one or more “competitive advantages.” That is, compared with rival firms, it is consistently able to command a greater price, or operate at lower cost, or both. The “five forces” described in Section 2.4 shape the car sharing industry in Vancouver and govern the profits of the average firm. In this section, we describe and analyze how Evo plans to achieve above average profits.

According to Porter, there are two fundamental strategies: differentiation and cost leadership (Porter, 1985). The first involves increasing the customer’s willingness to pay by offering a good or service that is uniquely positioned in the market, and the second is offering the lowest price. Evo is currently positioned squarely in the differentiation camp.

2.4.1 Value proposition

A distinctive “value proposition” is the core of strategy. It is the promise of worthiness that the firm makes to its customers about its goods and services. In delivering its value proposition, the firm must ask itself three basic questions: (i) “What customers are we serving?” (ii) “What needs are we fulfilling?” and (iii) “What price, relative to our competitors, are we asking?” The value proposition concerns the demand side of the firm’s
business. The following paragraphs will demonstrate that Evo has launched with a strong and clear articulation of its value proposition.

2.4.1.1 Customers

In answer to the first question, Evo actively targets Vancouver-based “millennials” ("Millennials", n.d.), that is the demographic cohort born approximately between the years of 1980 and 2000. In particular, the service focuses on those who live within the “home zone.” A 2010 report by the Pew Research Centre described American millennials as “Confident. Connected. Open to Change” ("Millennials", 2010). In broad strokes, millennials (also known as “Generation Next”) are more likely to be technologically savvy than other generations and the majority are active participants in social media. Their access to the Internet is predominantly through the smartphone rather than desktop or laptop computers. That is, they are wirelessly connected and mobile. Millennials are more highly educated than older generations at comparable ages. However, this education has generally not translated into reliable and satisfying employment. The recession of 2008 disproportionately affected millennials who were just then beginning to enter the workforce. Those who were fortunate enough to land jobs were among the last to be hired and the first to be downsized. Even those millennials who are working either full- or part-time report hardship. Only 31% of them say they earn enough money to support the kinds of lives they want. Fully 13% of millennials aged 22–29 who had previously lived on their own moved back in with their parents after the recession and 15% of younger adults live with roommates to cut costs. Millennials are the least capitalized of the generations and the least likely to own houses and cars. However, despite these difficulties, millennials generally remain optimistic about the future; approximately 35% older millennials who are working full-time report that they are “very happy.” Millennials are no more likely than other generations to be concerned about the environment. They are politically and socially more liberal than older generations and value daily vigorous exercise like jogging, biking, and working out at the gym.
2.4.1.2 Needs

Evo’s online promotional videos end with the slogan, “From here to there with room for your friends.” This catchphrase is predicated upon two essential features of Evo’s fleet. The first is that it is free-floating. The second is that it is comprised uniformly of mid-sized, four-door vehicles equipped with roof racks that are capable of carrying bicycles, skis, and snowboards. These two features enable Evo to meet the needs of the customer who requires flexible pick-up and drop-off, and adequate space within the vehicle to ferry passengers, cargo, and sporting equipment.

Figure 2.5 shows an example of advertising posters that were prominently displayed on bus stops throughout Vancouver during the month following Evo’s launch. The message is bold and clear: if you need to carry gear or passengers, Evo is for you. (And more specifically, perhaps: If you’re active and have friends, Evo is for you.) In support of this message, Evo created custom content to appear in local media during launch. Sponsored articles with titles like “An IKEA Trip with Evo Car Share” and “Raising the Roof Racks with Evo Car Share” ran in Vancouver is Awesome at and immediately subsequent to launch. These pieces outlined the essential components of the Evo service and emphasized its differentiating characteristics of convenience and utility.
Of the four CSOs currently operating in Vancouver, only Evo and car2go offer free-floating fleets. Both firms provide only one kind of vehicle, but the sizes of the cars are dramatically different. Evo supplies the four-door Toyota Prius C, which seats five, and car2go offers the two-door Mercedes Smart fortwo, which can carry only two people and very limited cargo. Evo is thus very well differentiated in the needs category.

Considered within the jobs-to-be-done framework, Evo also addresses much deeper customer needs than the practical ones outlined above, namely psychological needs around identity. The Evo customer sees herself as young, social, active, outdoorsy, and environmentally conscious. By holding an Evo membership and driving boldly branded Evo cars, she reaffirms these qualities within herself, even if she never has reason to use many of the features that the vehicle offers, or even to drive more than occasionally. Over
and above its practical benefits, an Evo membership signifies membership in an urban “tribe” that shares these values.

Nowhere is this tribe more clearly depicted than on the landing page of the Evo website (Figure 2.6). The branding strongly centres on freedom, youth, friendship, fun, and the outdoors with a splash of style. Notably absent in this image is the car itself. As a play on the slogan, “From here to there with room to spare,” this page declares, “From here to there with room for your friends” and it is no accident that the five people shown in the photograph correspond to the capacity of the Toyota Prius. Once again, Evo is strongly differentiated from the competition along the needs “axis.”

Figure 2.6 Landing page of the Evo website (retrieved from evo.ca on June 15th, 2015).

2.4.1.3 Pricing

The pricing of car-sharing options must be considered within the structure of membership fees, monthly fees, and usage fees. The last of these can be further divided into by-the-minute, by-the-hour, and by-the-day rates and may, depending on the provider, also include per km charges. The pricing structures of the four CSOs in Vancouver are
given in Table 2.3. Unless otherwise noted, all offerings include 200 km of “free” driving, that is, with fuel and insurance included. Longer distances typically incur per km surcharges ranging from $0.20 – $0.45.

Table 2.3 Comparison by price of offerings by Vancouver’s four car-sharing organizations (data compiled by the authors).

<table>
<thead>
<tr>
<th>CSO</th>
<th>Membership fee ($)</th>
<th>Monthly fee ($)</th>
<th>Usage (minute, $)</th>
<th>Usage (hour, $)</th>
<th>Usage (day, $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evo</td>
<td>35.00</td>
<td>0.00</td>
<td>0.41</td>
<td>14.99</td>
<td>89.99</td>
</tr>
<tr>
<td>Evo (BCAA member) [1]</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>13.50</td>
<td>80.99</td>
</tr>
<tr>
<td>car2go</td>
<td>35.00</td>
<td>0.00</td>
<td>0.41</td>
<td>14.99</td>
<td>84.99</td>
</tr>
<tr>
<td>Modo (member-owner)</td>
<td>520.00</td>
<td>0.00</td>
<td>–</td>
<td>4.00 [3]</td>
<td>40.00</td>
</tr>
<tr>
<td>Modo (member)</td>
<td>20.00</td>
<td>5.00</td>
<td>–</td>
<td>8.00</td>
<td>64.00</td>
</tr>
<tr>
<td>Zipcar (monthly plan [4])</td>
<td>25.00</td>
<td>7.00</td>
<td>–</td>
<td>7.75</td>
<td>76.00</td>
</tr>
</tbody>
</table>

[1] BCAA members have their Evo membership fee waived, and are refunded 10% of usage fees in the form of free minutes. Effective pricing is listed.
[3] Plus $0.40 per km for the first 40 km and $0.20 per km thereafter.
[4] Zipcar also offers four “extra value” plans at monthly tiers ranging from $50-$250. These correspond to between approximately 7 and 38 hours of prepaid driving a month and offer between 10 and 15 % discounts on the hourly rates.

Examination of the various pricing plans reveals a lot about the competing strategies and operations of the Vancouver-based CSOs. The hourly rates offered by Modo and Zipcar are substantially cheaper than those of Evo and car2go (and neither offers by-the-minute billing). This is because neither of the former pair offer free-floating fleets, so their cost structures are lower on account of the relative simplicity and predictability of their operations, and the efficiencies they can achieve by precisely locating fixed lots in optimized, high-traffic locations. In addition, these CSOs need to offer their customers lower prices to offset lower flexibility.
Zipcar is the only one of the four companies to target pre-paid “extra value” plans to individuals who know with certainty that they will be driving a minimum number of hours every month. These are not shown in Table 2.3 (see note [4]) so as not to confuse the listed offerings which are designed for the “occasional” driver. This is to say that Evo, car2go, and Modo – all of which offer free monthly plans – appeal more to people who drive only infrequently, or who do not like to commit to contracts. These customers may either already have a car of their own or need a second occasionally, or may not have a car at all and make most of their trips by foot, bicycle, or public transit. Modo locks in its owner-members by selling them shares in the cooperative.

Table 2.3 makes it clear that car2go is Evo’s most direct competitor. Given that both CSOs offer a homogeneous, free-floating fleet with no monthly fee, Evo cannot afford to be at a price disadvantage relative to car2go.

2.4.2 Value chain

In order to sustain its competitive advantage, a firm must either engage in different activities from its competitors, or perform the same activities differently. That is, it must cultivate a tailored value chain. The value chain concerns the supply side of the firm’s business. Evo’s current value chain is discussed in detail in Section 2.3.2. This section focuses on only one aspect.

Unlike car2go, which has developed its own car sharing platform, Evo has outsourced production of the integrated hardware and software “stack” that underpins its service. Porter argues that “generic activities – those that cannot be meaningfully tailored to a company’s position – can be safely outsourced to more efficient external suppliers” while “outsourcing is risky for activities that are, or could be, tailored to strategy, and especially those activities that are strongly complementary with others.”

In light of this reasoning, we believe strongly that Evo must take greater ownership over the production of its own car sharing platform because it provides many opportunities for
tailoring and therefore differentiation from competing CSOs. See Section 2.4.4 for a fuller explanation of how Evo’s car sharing platform supports its core value proposition.

### 2.4.3 Trade-offs

Trade-offs are the linchpins of strategy. They are what give a good strategy its teeth. While a tailored value chain means performing activities differently from how rivals perform them, trade-offs mean making different decisions, the kinds of decisions that, once taken, limit the firm’s future options; the kinds of decisions that competitors are not willing or able to make and therefore lead to sustainable competitive advantage.

Like car2go (but unlike Modo and Zipcar), Evo offers only one type of vehicle, the four-door, gas-electric hybrid Toyota Prius. By limiting itself to only one make and model of vehicle, Evo benefits from two distinct advantages. First, a homogenous fleet is much easier and less costly to maintain and service than a heterogeneous one. Second, in its uniform presence on the streets of Vancouver, the Evo brand conveys strong, consistent messaging. Like any trade-off, however, the choice is sub-optimal in other respects. Chief among these are that (i) Evo narrows its market by appealing only to customers who want or need a mid-sized car and (ii) after the initial purchase, Evo effectively creates for itself a monopoly seller in Toyota over whom it has distinctly less buying power than it would have had had its range of potential suppliers been wider. Mitigating strategies to overcome this were discussed in 2.3.2.

Like car2go (but unlike Modo and Zipcar), Evo offers a free-floating fleet. This provides a great deal of flexibility to the customer, but comes at the cost of increased operational complexity and uncertainty. These dramatically increase the burden on Evo’s underlying software platform and therefore also increase the risk exposed by BCAA’s dependency on Vulog. However, by enabling this flexibility, Evo is able to command a substantially higher usage price than Modo and Zipcar.
2.4.4 Fit

“Fit” describes the relationships between the activities in the value chain. It emphasizes that successful enterprises are not built upon a single competitive advantage, but rather result from many interdependent activities and trade-offs and that these directly contribute to the credibility of the firm’s value proposition.

The three “tent poles” of Evo’s value proposition are convenience, utility, and identity. By convenience, we mean, among other things, that Evo’s vehicles can be picked up and dropped off at any location within the home zone and can be booked at any time using a simple mobile app (“from here to there”). By utility, we mean that the Toyota Prius is a mid-sized vehicle capable of carrying passengers and cargo. Moreover, Evo’s cars are equipped with roof racks for transporting bikes, skis, and snowboards (“with room for your friends”). By identity, we mean that Evo is positioned to appeal to drivers who are young, social, active, outdoorsy, and environmentally conscious. Membership reaffirms these attributes in Evo drivers. These three core elements of convenience, utility, and identity allow Evo to charge higher prices than Modo or Zipcar and to match the prices of car2go, even though the latter has a much larger fleet in Vancouver.

The relationships between the core elements of a firm’s value proposition and the distinct choices it makes in crafting a tailored value chain can be expressed graphically by an “activity map.” The denser the interconnections between the components of the map, the stronger the strategy. Evo’s activity map is illustrated in Figure 2.7. It shows a dense network of connections between the value proposition and supporting choices. This indicates the overall health of Evo’s “fit.” It also hints at the strategic weakness of relying on Vulog to provide three crucial supports for the “convenience” aspect of Evo’s value proposition (free-floating fleet, by-the-minute billing, and mobile reservations).
In addition to the internal fit of activities within Evo, we also need to consider that Evo is a division of BCAA and as such we need to analyze its fit within the parent company. This fit can be viewed from the perspective of both BCAA’s core values and its growth strategy.

As outlined in Section 1.2.7, car sharing decreases congestion, decreases mean vehicle miles traveled and fuel consumption. These reductions suggest that car sharing may be a “win-win” model for personal transportation in that it has both personal and societal benefits. Given these outcomes, the development of Evo was a natural fit for BCAA whose mandate is to advocate on behalf of its members for positive change, to keep BC’s communities healthy and safe, and to take care of the planet by managing its operations in an environmentally responsible manner.

Membership in Evo is free for BCAA members. It therefore makes sense for prospective members of Evo who are not already members of BCAA to consider joining.
the parent organization at the moment of sign-up. Evo, therefore, aligns with BCAA’s current strategy for membership growth which is centred on the slogan “Membership is Rewarding.”

Evo also provides a mechanism for BCAA to expand its membership to encompass young people. As outlined in Section 2.4.1, millennials are the least well capitalized of the generations and therefore the least likely to own cars and houses (which is especially true with the current high Vancouver housing prices). This makes it unlikely for them to hold BCAA membership (which primarily confers benefits to drivers and home-owners).

2.4.5 Continuity

A good strategy is consistent over time. Continuity answers the questions, “Is the strategy at its core sufficiently resilient to allow the firm time to become good at what it does, to optimize tailoring, make necessary trade-offs, and better its fit? Is management sufficiently committed to the strategy to enable its good effects to take root?” (Magretta, 2011).

Evo is a brand new service. It is much too early to predict whether it will evolve into an enduring, recognizable, consistent, and successful brand. However, there are two important long-term effects that greatly increase its chances:

1. Evo is a division of BCAA. BCAA has a long and successful history in this province that exceeds 100 years. It is well managed, debt free, and has significant resources and will to ensuring Evo’s ongoing viability. In addition, Evo is well aligned with BCAA’s core values and strategy for growth.

2. As urban densification accelerates, as traffic congestion worsens, as demand for taxis skyrockets, as environmental awareness grows, and as civic policy evolves, car sharing’s growth seems assured. Evo has got off to a good start. If it can continue to differentiate itself from its closest competitor (car2go) by consistent application and sharpening of its current strategy, it stands to gain a large share of a growing market.
2.4.6 Summary

Evo’s current strategy is to charge a premium price for flexible personal transportation within the City of Vancouver by providing a compelling value proposition based on convenience, utility, and identity to young, urban, social, and environmentally-conscious consumers. This strategy provides BCAA with an opportunity to grow by serving a generation that is not typically associated with membership in the association. In contrast to many of BCAA’s other lines of business, which are loss leaders to increase membership, Evo should drive growth profitably. The strategy is compelled by BCAA’s mission, aligns well with its core values, and is a good fit for its financial situation (see next section.)

2.5 Financial performance

BCAA is a not-for-profit, member-based association. Therefore, its accounting does not follow GAAP. Unlike the balance sheet of a publicly-traded corporation, for which \( assets = liabilities + shareholder\ equity \), BCAA’s “balance sheet” is reported as \( total\ assets = liabilities + net\ assets \). Although \( net\ assets \) are mathematically equivalent to \( shareholder\ equity \) by these equations, they are practically very different because “the bylaws of the Association provide that, in the event of dissolution, the net assets shall be distributed, at the discretion of the Board of Directors, to any charitable non-profit organization in Canada and shall not be payable or otherwise available to any member.”

Figure 2.8 shows a snapshot of BCAA’s financial performance over the four years spanning 2011–2014. During this period:

1. Total assets have increased by 45.1 % from $265MM to $385MM;
2. Net assets have increased by 64.4% from $88.4MM to $145MM;
3. Operating revenues have increased by 18.0 % from $147MM to $174MM;
4. EBIT has decreased by 4.58 % from $5.97MM to $5.69MM;
5. Investment income has increased by 735 % from $2.74MM to $22.9MM;
6. Earnings have increased by 208 % from $7.07MM to $21.8MM; and
7. Return on assets (ROA) has increased by 113 % from 2.67 % to 5.66 %.
Figure 2.8 Selected metrics showing BCAA’s financial performance during 2011–2014 (values in thousands; data compiled by authors using official BCAA financial reports).
BCAA’s overall financial health is excellent. The association carries no long-term debt and, as of September 30th, 2014, held an impressive $145MM in assets. We note, however, that if earnings were to be considered net of investment income, that is, proceeding solely from operations, organic growth would be viewed as being substantially weaker, though still healthy. Indeed, EBIT growth during 2011–2013 was 75% while earnings grew 210% over the same period. The offsetting nature of investment income is evidenced even more dramatically over the 2013–2014 financial year when EBIT declined by nearly 46% as earnings slipped by less than 1%. This effect is also apparent in the fact that while operating revenues have grown by only 18% over the last four years, net income has grown by a staggering 208%. These trends are illustrated graphically in Figure 2.9, which shows the relative contributions of operations and investment to BCAA’s income before taxes.

![Relative contribution of operations (blue) and investment (green) to BCAA’s income before taxes over the period 2011–2014 (data compiled by authors).](image)

BCAA is not a bank. Therefore, it should not be generating the bulk of its earnings from investment income. Nor should it be accumulating large capital reserves, as it has done, at the expense of developing new products and services. It should instead be using this money as fuel for organic growth, or, given that it is a not-for-profit association, returning the cash to members by way of lower membership fees. While the authors are
not privy to the executive-level discussions that led to the creation of Evo, we surmise that these factors must have been considered. We believe that BCAA did exactly the right thing by investing some of its reserves into creating a wholly new business and one that is so closely aligned with its mission and core values.

Although it is too early in Evo’s life to present a detailed financial analysis of its performance, in an informal discussion the SVP and CIO at BCAA stated that Evo was already operationally profitable one month after launch. Given that Evo is well managed by BCAA, that it has a strong strategy (Section 2.4), that it competes as one of only four firms in a moderately attractive industry (Section 2.2.4), and that Vancouver’s car sharing market is growing rapidly, we predict solid performance. Indeed, we foresee that BCAA’s operating revenues will benefit from noticeable growth in the coming years due to a strong contribution by Evo.
3: Fulcrum Analysis

3.1 Overall summary and assessment of the current situation

Taken as a whole, the situational analysis in Chapter 2 demonstrates the attractiveness of Vancouver’s car sharing industry. Porter’s “Five Forces” analysis (Section 2.2.4) reveals the industry to be moderately attractive. If 5 points were applied to low forces (most attractive) and 1 to high forces (least attractive), the industry would score 15 overall out of a maximum possible 25. However, once this analysis is put into the context of prevailing political, economic, social, and technological trends (PEST framework, Section 2.2.5), and the industry begins to look more attractive. The North American car sharing industry is not just growing but accelerating, from an average of 27 % per year between 2008 and 2010 to an average of 33 % per year between 2010 and 2012 (Metro Vancouver, 2014). Given its combination of high population density and low affordability, not to mention strong political and cultural shifts towards environmental friendliness, the City of Vancouver could be considered the capital of car sharing in North America (Jackson, 2014). Couple this with a projected population growth of 11 % over the next ten years (from 660,000 to 730,000) and the future growth of the industry in this city looks assured.

Currently, Evo has only three direct competitors in this growing industry: car2go, Modo, and Zipcar. The four firms create an oligopoly in which they wisely compete on differentiation rather than price. As discussed in the Value Chain Analysis (Section 2.3.1), Evo has a number of competitive advantages which positions it well against its rivals, including the support, guidance, and experience of the BCAA management team, the considerable resources of this parent company, and the unique branding and marketing of Evo to match the aspirational BC lifestyle. Though Evo was launched just a few months prior to the publication of this thesis, it already has an estimated 19 % share of car sharing vehicles on the road (Figure 3.1). Assuming the vehicles of each firm have roughly equal utilization, this vehicle share can be taken as an approximate proxy for market share.
An analysis of Evo’s strengths, weaknesses, opportunities and threats (Section 2.3.3) clearly outlines that the car sharing platform that powers Evo represents its single largest strategic vulnerability. Production of this platform was outsourced to a small European firm, Vulog, for whom BCAA is but one of a number of customers. Given that Vulog is Evo’s sole supplier, and to the extent that it has made relationship-specific investments, BCAA is vulnerable to hold-up (Section 3.3.1). In addition, BCAA has limited influence over Vulog’s priorities, its product roadmap and timeline. The firm must also tolerate slow fixes of software glitches and organize its operations around the inflexible and incomplete analytics provided by Vulog. These deficiencies could leave Evo in a lagging position behind its competitors in terms of service reliability and user experience. They could also mean that BCAA may not have sufficient data for proactive planning and optimizing the Evo fleet, which could put the young organization at a significant cost disadvantage relative to the incumbents. Lastly, it places Evo in a position in which they are unable to respond rapidly to changes in the dynamic car sharing market.

The General Electric-McKinsey matrix is a semi-quantitative analytical framework that helps multi-business firms decide where to allocate their limited resources. In this analysis, the firm’s various business units are located on nine-cell, two dimensional graphs that plot relative industry attractiveness against business unit strength (McKinsey
Quarterly, 2008). Business units that fall in the green areas of the matrix should be nurtured, while those that fall in the red should be divested. Our estimation of Evo’s position in the matrix is shown in Figure 3.2. Evo is a small, young, relatively inexperienced organization that has approximately 20% share of a moderately attractive, but rapidly growing, industry.

It may not be valid to compare Evo with BCAA’s other lines of business. As discussed in Section 2.4.4, some of these other lines are loss leaders designed to further BCAA’s strategy of increasing membership by providing value-added services. Though Evo may also drive membership, it is unique within BCAA in its key performance metric is to increase profits, not necessarily to increase BCAA membership. The GE-McKinsey nine-box matrix will be used in this thesis to compare Evo as it stands today, and how its position is predicted to change based on future strategy and recommendations in Chapter 4.

Figure 3.2 General Electric-McKinsey matrix showing the position and estimated current market share of Evo. The arrow indicates the anticipated change as the car sharing industry grows in Vancouver (developed by the authors).
3.2 Expected future performance under the status quo

Driven by sound strategy, which enables it to prosper in a rapidly growing, unsaturated market, Evo’s current performance is strong. After a successful launch, membership is growing quickly and Evo is already operationally profitable. However, Evo’s expected future performance under the status quo is uncertain due in large part to the strategic and operational risk posed by the Vulog-supplied car sharing platform. Service outages, lack of support, a poorly operating mobile app, and an inadequate back-end software are just some of the challenges and risks posed by Vulog system.

In the following sections, we review the three major components of the car sharing platform independently in order to identify the specific challenges and risks associated with each. We then enumerate the general risks posed by Evo’s reliance on the Vulog platform generally so as to describe the full scope of the challenges that Evo may face in the future. Lastly, we discuss the principal-agent problem Evo currently experiences in its relationship with Vulog. In all these analyses, we assume the current market conditions are maintained.

3.2.1 Vulog component challenges

3.2.1.1 Hardware

The hardware is the only component of the three that doesn’t pose a significant risk to Evo’s business. It works as expected, and provides the services needed to compete in the car sharing market without any shortcomings when compared to its competitors. It is possible that as the car sharing industry matures and hardware inevitably becomes commoditized, the in-dash components could be sourced elsewhere at lower prices. It is also possible that vehicle manufacturers could begin to install the necessary hardware in their factories so that vehicles could be purchased ready for sharing “out of the box.” Although Vulog-branded, Evo suspects that the hardware is generic and could “talk to” various back-ends provided by other vendors. Thus, the installed base of in-car hardware doesn’t represent a considerable switching cost for Evo.
3.2.1.2 Web and mobile applications

The web and mobile apps, which allow customers to locate, reserve, and unlock cars, is the platform component that Evo most urgently needs to control and improve. Customers interact with it during each and every transaction. Though customer satisfaction has improved in recent versions, on both the iOS and Android operating systems, Evo’s mobile app still lags far behind that of car2go, its principal competitor. On the Google Play Store, the Evo app has a mere two star rating, of which over half of the reviews are a one star rating (“Evo - Android Apps”, n.d.). In contrast, the car2go app has a four star rating based on its reviews from around the globe (“car2go - Android Apps”, n.d.). The main complaints about Evo’s app focus on its crashing and instability, the length of time it takes to view and reserve vehicles, and various other elements that are lacking or distract from a positive user experience. With over 31% of car sharing users holding memberships with multiple CSOs, Evo’s app is constantly being compared and contrasted (Metro Vancouver, 2014). A poor application and user experience could lead customers to choose a competitor’s services over Evo’s, which in turn may eventually lead to a reduction in Evo’s market share if the service cannot be improved.

3.2.1.3 Back-end, fleet-management software

The challenge associated with the current back-end software provided by Vulog is the lack of visibility and reporting around car locations, trip routes, and customer behaviour. Not only is this shortcoming a huge inconvenience for Evo employees, it also negatively affects the business. If Evo could extract and combine this information in useful ways, it would have dramatically better insight into the dynamics of its fleet and its customers. Given this, Evo may be able to optimize vehicle locations and fleet size, entice customers with gamification techniques, or strategically lower per-car rates in order to encourage customers to move specific, under-utilized vehicles to popular locations.

3.2.2 Specific risks faced by Evo due to its reliance on Vulog
Maintaining the status quo with regard to its relationship with Vulog and reliance on its car sharing platform presents a number of serious risks to Evo’s future business. These risks have been discussed in detail in Chapter 2 (Section 2.3.2) and are summarized here:

### 3.2.2.1 Language barrier

The language barrier between Evo and Vulog presents a risk when product requirements, revisions, or reports are requested. There is always a possibility that requests will be misunderstood or miscommunicated. This also adds stress to the relationship as misunderstandings lead to frustrating delays.

### 3.2.2.2 Cultural differences

The work culture differences between North American and French businesses can affect the way Evo and Vulog interact and achieve results. In France, a 35-hour work week with seven weeks of vacation a year, often taken over the summer, is the norm (Government of Canada, 2005). This has the potential to negatively affect the turnaround time for Evo’s product change requests, recovery during application failures, or other critical times.

### 3.2.2.3 Time zone challenges

Evo and Vulog operate in time zones that differ by nine hours. This adds an additional element of risk. For example, when inevitable service outages occur, or when urgent fixes are requested, depending on the time of the day, one parties may not be available to action anything until the following work day starts, which could be 10-12 hours later. This could cause significant delays in service recovery and could ultimately lead to Evo losing customers.
3.2.2.4 Software concerns

The current inability of the back-end software to extract arbitrary fleet and customer data and to generate custom reports that can be easily and quickly visualized by Evo employees are limitations that could pose serious risks to Evo in the future. There is also the risk of reputational damage and loss of customers in the future due to problems related to Evo’s mobile app.

3.2.3 Principal-agent problem

The principal-agent problem occurs when one party (the “agent”) can make decisions that impact the other party’s (the “principal”) business (“Principal-agent problem”, n.d.). It is particularly acute when their incentives are not aligned. This leads the agent to act in its own best interest, rather than in that of the principal. In this case, Vulog is the agent that can make decisions that negatively affect the principal, Evo. It is in Vulog’s best interest to provide a car sharing platform for as many CSOs as possible, thus maximizing its footprint and revenue generation. On the other hand, it is in Evo’s best interest to provide the best possible service and user experience to its customers, particularly by way of a great mobile application, and thereby gain market share, build loyalty, and raise switching-costs. Herein lies the problem. Under the current process and relationship structure, there is insufficient incentive for Vulog to satisfy Evo’s strategic goals in parallel with its own. This misalignment of incentives will continue to plague Evo into the future as they continue to lack control over their software, limiting their ability to pivot and react as competitors adapt and the market changes.

3.3 Strategic direction and intent

As outlined in the preceding sections, Evo faces considerable strategic and operational risks posed by an adjacent upstream firm that supplies a crucial input. This makes corporate, as opposed to competitive, strategy the fundamental consideration of this thesis. The key decision is: should BCAA vertically integrate backwards into Evo’s supply
chain and, if not, how should BCAA take greater ownership and control over its car sharing platform?

Stuckey and White of McKinsey & Company warn that vertical integration is fraught with risk, expensive, complicated, and difficult to reverse (Stuckey & White, 1993). In addition, it is statistically more likely than not to destroy shareholder value. Therefore, it should not be attempted unless absolutely necessary. According to these authors, there are only four valid reasons to integrate vertically. These are (verbatim):

1. The market is too risky and unreliable – it “fails”;
2. Companies in adjacent stages of the industry chain have more market power than companies in your stage;
3. Integration would create or exploit market power by raising barriers to entry or allow price discrimination across customer segments; or
4. The market is young and the company must forward integrate to develop a market, or the market is declining and independents are pulling out of adjacent stages.

In the following paragraphs, we evaluate criteria (1) and (3) in the context of Evo’s relationship with Vulog. We make the case that BCAA should consider backwards integration in addition to less radical approaches to establishing greater control over its supply chain.

### 3.3.1 Vertical market failure (VMF)

In the context of sourcing its car sharing platform, Evo faces vertical market failure (VMT), which is by far the most important of the listed reasons for backwards integration. The failure is characterized by (i) small numbers of buyers and sellers; (ii) high asset specificity, durability, and intensity; and (iii) frequent transactions. These conditions often lead to considerable risk and, as a consequence, contracts that are complex, costly, and time-consuming to develop and prosecute.
3.3.1.1 Numbers

Where there are small numbers of buyers and sellers in a marketplace, prices tend not to reflect the economic fundamentals of supply and demand, but rather depend upon the relative power of the firms at either end of the transaction. Very small numbers lead to risk and instability as both parties are susceptible to opportunism. In the case of BCAA, an exhaustive search determined that only Vulog was able to satisfy all of Evo’s requirements (i.e., single seller). For its part, Vulog is a small firm (< 20 employees) with approximately a dozen clients (i.e., few buyers). It is likely that loss of Evo as a customer (and its fleet of 250 cars) would be a significant blow. Therefore, even though BCAA depends crucially on Vulog for its car sharing platform, the balance of power between the firms is approximately equal. This makes the relationship precarious and leads to protracted haggling and manoeuvring for advantage, especially as economic conditions within the industry vary unpredictably over time.

3.3.1.2 Assets

When one or both firms in a transaction invests heavily in software, equipment, personnel, or another resource that has low value outside of the relationship, a condition of high asset specificity is created. This effectively locks the parties together and creates a “bilateral monopoly” (i.e., a case of single seller-single buyer). Indeed, the emergence of these monopolies post-investment is the leading cause of VMF.

Evo and Vulog are bound together predominantly by high technical asset specificity. For its part, Evo has installed Vulog-supplied hardware behind the dashboard of every vehicle in its fleet. It has also developed software to consume and process Vulog-supplied data. Vulog, on the other hand, has customized its car sharing platform to meet Evo’s specific needs. As they stand today, these customized components have limited use outside the contractual relationship between the two firms, though Vulog has benefitted by incorporating some BCAA-requested features into the software packages it supplies to its other customers. Despite the current specificity, assets on both sides – particularly software – could presumably be modified to accommodate different relationships in the future, albeit
at considerable cost and potential disruption of service. Moreover, the hardware and fleet-management software assets are durable, *i.e.*, they have long, useful lifetimes.

This specificity dramatically raises the threat of hold-up, which in turn leads to underinvestment. In an ideal world of perfect information where all possible outcomes could be anticipated and comprehensive contracts written to govern the entire lifespan of a supplier-buyer relationship, hold-up could not occur. In this case, a risk-neutral buyer (Evo) and supplier (Vulog) could efficiently cooperate provided the buyer’s valuation exceeded the seller’s costs. However, unforeseeable external factors, lack of trust, quality issues, and asymmetric information make it impossible to write these perfect, long-term contracts, and short-term contracting becomes mandatory. This necessitates occasional renegotiation and raises the possibility that the supplier (Vulog), could hold-up the buyer (Evo) for the value of the specific investment that the buyer has made in the relationship, particularly if the supplier is the buyer’s only option. Fear of hold-up leads the buyer to underinvest in the relationship as a protective strategy.

*Asset intensity* refers to the R&D investment that has been made to create them. When intensity is high, it is risky for adjacent firms in the supply chain to be independent because both would then be vulnerable to opportunistic contract renegotiation, especially if the venture is a surprising success, or failure. In the case of Evo/Vulog, we classify asset intensity as very high, and weighted predominantly on Vulog’s side.

The assets representing Evo’s relationship with Vulog are specific, durable, and manifest considerable R&D investment. Taken together, the specificity and intensity of the assets elevate the cost that would be incurred by Evo in switching to another provider for its car sharing platform, and their durability extends the time horizon of these costs.

### 3.3.1.3 Transactions

When bilateral monopolies and high asset specificity are combined with high transaction frequency, VMF is likely. Under these circumstances, costs escalate because more frequent interactions give rise to more frequent opportunities to haggle, re-negotiate,
and exploit. This has been the case for BCAA and Vulog who need to interact daily to ensure uninterrupted provision of Evo service.

### 3.3.2 Market power and barriers to entry

Backwards vertical integration would not only solve Evo’s VMF problem but could also be used to magnify its market power. We note that the world’s largest car sharing organization, and Evo’s most direct competitor, car2go, is a substantially integrated organization. Two of its crucial inputs are sourced in-house: its vehicles (made by car2go’s parent company, Daimler) and its car sharing platform. This integration raises the barriers to entry by other firms by forcing them to make larger capital outlays and to achieve larger minimum efficient scales in order to compete meaningfully. By taking greater control of its car sharing platform through vertical integration, Evo could establish similar, albeit lower, defenses against potential new entrants and augment its current market power.

### 3.4 Alternatives to vertical integration

The full vertical integration options available to BCAA are:

1. An outright purchase of Vulog (or, one of Vulog’s close competitors) and all of its intellectual property.
2. An in-house “clean room” recreation of the entire hardware and software car sharing “stack.”

These radical measures lie at one end of a “vertical integration continuum.” At the other lies the contract that currently underpins the relationship between BCAA and Vulog. (“Spot,” or competitive market, arrangements do not factor into consideration in this case because there are too few buyers and sellers; see Section 3.3.1.).

Peterson et al. (2001) have proposed that the continuum can be represented as shown in Figure 3.3. These researchers point out that in going from left to right along this axis, control over the transaction between buyer and seller passes from being external to both (the market) to being internally located within a single firm. Moreover, they observe that coordination of price, quantity, quality, and terms of exchange shifts from being within the
realm of the “invisible hand” to being actively managed. Characteristics of each of these coordination modes are listed to the left and right of the figure.

![Figure 3.3 The vertical integration continuum defined by Peterson et al. The figure legend notes that “the diagonal line represents the mix of invisible-hand and managed coordination characteristics found in each of the five alternative strategies for vertical coordination. The area above the diagonal indicates the relative level of invisible-hand characteristics and the area below the diagonal indicates the relative level of managed characteristics.”](image)

Given this continuum, the status quo of contractual relationship, and the two options for vertical integration listed at the beginning of this section, the remaining options for Evo to take more control over its car sharing platform are a strategic alliance and a formal cooperation (joint venture) with Vulog.

In a strategic alliance, both parties retain their separate, external identities, but agree to work together to achieve common goals and to share the risks and benefits emanating from them. Although a strategic alliance necessitates shared control of the decision-making process, it does not preclude the use of contracts to cover some aspects of the relationship. In a formal cooperation, or joint venture, by contrast, the two firms become equal co-owners of a distinct, independent entity that acts on their behalf in the market. Joint ventures are typically limited in scope to a single project. It is possible that BCAA and Vulog could use either one of these two arrangements in order to further their mutual interests. Options for how to do so will be discussed in Chapter 4.
3.5 Summary

Through Evo, BCAA is well positioned to capture a substantial portion of the rapidly growing car sharing market in Vancouver. However, it bears considerable operational risk through its reliance on Vulog, which is the sole provider of a crucial input, that is, the integrated hardware and software platform that enables the car sharing service. These risks stem from a combination of cultural, language, and time zone differences, as well as deficiencies in the reliability and flexibility of the software components of the platform.

If Evo maintains the status quo without any major changes to operations or in the market as a whole, we anticipate maintenance of current business unit strength and near term projected membership and revenue growth at a steady, linear rate. Because of eventual changes in the industry, however, the intermediate and long-term future looks less certain. If Evo can gain control over its car sharing platform, particularly the software underpinning the mobile app and back-end, it has dramatically greater opportunities for increasing market share and increased revenues in this high-growth industry. Control over these aspects of the business would enable Evo to compete more vigorously with car2go and provide customers with a superior user experience, which would ultimately lead the organization to greater future success.

In its relationship with Vulog, BCAA faces a vertical market failure. To address this, and to expand its market power, BCAA should consider options for backwards vertical integration that could involve either outright purchase of Vulog (or a close competitor), or a “clean room” reimplementation of the entire software stack. If these approaches are deemed too radical or costly, BCAA should consider tighter collaboration with Vulog, possibly by way of a strategic alliance, or joint venture. These options will be discussed in detail in Chapter 4.
4: Solution Analysis

In this chapter, we develop and evaluate strategic options for Evo. Our approach is modeled on the framework of Boardman, Shapiro, and Vining (2004), who have proposed five steps for the development of strategic solutions. These are: (i) generation of options; (ii) establishment of goals and evaluation criteria; (iii) development of likely future scenarios; (iv) comparative evaluation of options based on criteria provided in (ii); and (v) selection and recommendation of the best option. Although the steps are presented linearly, the process of covering them in practice is necessarily iterative. This chapter presents the culmination of our iterative work. (The authors are solely responsible for the development of all steps listed above with the exception of (ii) for which we solicited the collaboration of BCAA SVP and CIO, Ken Ontko).

In setting the stage for our analysis, we first evaluate the effects of demographic, regulatory, technological, and social trends on the car sharing industry in Vancouver to make the case that maintenance of the status quo is not a viable option. We then present our goals and evaluation criteria followed by the proposed strategic options and their likely future scenarios. Next, we evaluate each of options individually according to the stated criteria and compare them against each other by way of an evaluation matrix. Finally, we select the most viable strategic option and make a recommendation to BCAA.

4.1 Context for change

The strategic options listed in Section 4.3 should be viewed in the context of anticipated trends that are likely to shape, directly or indirectly, how the Vancouver car sharing market develops over the next decade. The action of these trends, together with inter-firm rivalry, make the car sharing market very dynamic and lead us to conclude that maintenance of the status quo is likely to lead to erosion of Evo’s market and profit share over the long run.

1. We expect that the City of Vancouver will become ever more densely populated, particularly as rezoning allows new mixed use, residential-commercial developments to concentrate along SkyTrain arteries. These routes include the
Cambie Corridor, which coincides with the Canada Line, and the planned Broadway Line to UBC. This crowding will put ever more pressure on parking and roadways and will make alternatives to car ownership increasingly attractive, especially as new city residents look to cut costs. BCAA needs to position Evo to take advantage of this substantially increased demand, to defend against expansion of its current competitors, and to erect barriers against entrants that will inevitably be drawn to the industry.

2. Changes in regulation will eventually permit ride hailing services, like Uber and Lyft, to enter Vancouver. In addition, we anticipate that peer-to-peer car rental organizations, like RelayRides, will also take root in the city (see point 4, below). Traditional car rental agencies – particularly Avis, which owns Zipcar – will also begin to use slack capacity in their fleets for car sharing. The City of Vancouver will continue to expand its cycling and public transit networks. Developments of this kind will increase the number, variety, and power of substitutes for car sharing. BCAA will need to harden Evo against these threats.

3. We foresee that car manufacturers will increasingly enter the car sharing market with their own vehicles, either via wholly-owned subsidiaries, like Daimler/car2go, or via joint ventures, like BMW/DriveNow. BCAA will need to protect Evo against the growing power of vehicle suppliers.

4. As the internet of things inevitably extends into the car, both ad hoc and organized peer-to-peer car sharing will become increasingly common. The phenomenon will be driven by everyday car owners having continuous and remote access by way of mobile apps to many of the metrics that currently require expensive after-market hardware and specialized software (such as the package supplied to Evo by Vulog). This information will be available either for free, or very cheaply, “out of the box,” that is, without complicated set-up. Metrics will include vehicle locations, engine diagnostics, and fuel levels, among many others. In addition, owners will be able to unlock and disable their vehicles remotely, which will obviate the need to transfer physical keys to renters and also provide a measure of security.

5. Software has fundamentally disrupted every industry into which it has been injected. In the words of Marc Andreessen, “Software is eating the world”
(Andereessen, 2011). Although limited forms of car sharing are possible in principle without software (see Section 1.3), large scale, real-world, efficient sharing requires it. Indeed, the free-floating platform underpinning Evo is absolutely dependent on software. However, it is in the nature of software to destroy and remake entire industries with ever increasing frequency, and car sharing, though already software-enabled in its current form, is not immune. As software enables both the technology and business model behind peer-to-peer sharing, new online, app-based marketplaces will emerge to connect owners and renters and to provide bespoke insurance. This new model of car sharing will have a dramatically lower cost structure than those borne by centralized fleets, like Evo’s, and will fundamentally threaten existing business models. Peer-to-peer sharing will also be able to expand geographically much more rapidly than traditional CSOs, will deliver much larger and more varied fleets, and offer a wider range of price points, including for free, or barter. (One might imagine, for example, an owner providing free use of a car for the day if the driver agrees as part of the deal to deliver packages, or pick up IKEA furniture, or ferry passengers, etc.)

6. Without control over its software stack, and in the context of points 4 and 5, Evo risks becoming commoditized in the face of overwhelming supply. By maintaining its own software, Evo would be able to participate in emergent peer-to-peer marketplaces, if and when it becomes advantageous to do so. A lynchpin for Evo’s ongoing viability in this new decentralized world will be building and maintenance of its perceived trustworthiness. This will mean, among other things, maintaining the highest standards of availability and reliability of its fleet, and being ever responsive to customer needs and complaints.

7. Through the sharing economy, the Internet will effect profound and potentially disorienting changes that will reverberate in every corner of our lives. Ben Thompson, author of Stratechery, an influential blog about the intersection between technology and strategy, has written, “[T]he definition of ownership begins to shift. This will clearly first play out in automobiles: the long-run promise of Uber is a world where few [people] own cars and few cars sit idle. This will impact not just automakers but insurers, dealers, repair shops, and more. More profoundly, it will
affect people. We will be less tied down, more willing to move, especially if our work becomes just as transactional as our possessions. And that, ultimately, will change the way we relate to each other, just as the shift from the small knit community in the countryside to the chaos of the city upended everything we thought we knew about how individuals, communities, and governments interacted” (Thompson, 2015). As an active participant in the sharing economy, it is not sufficient for Evo keep abreast of technological developments. It must also be exquisitely attuned and responsive to these changing cultural and social mores.

4.2 Goal and weighted evaluation criteria

The primary goal of implementing any one of the options proposed in the subsequent sections is to alleviate the strategic risk to Evo posed by its reliance on Vulog (these risks are summarized in Section 3.2.2). In addition, the other criteria by which strategic options will be evaluated are listed below in order of importance (expressed as a percentage weighting, as provided by BCAA CIO Ken Ontko).

1. Time to implement (15 %)
2. Potential to drive BCAA membership (15 %)
3. Potential to increase customer satisfaction (15 %)
4. Degree to which the proposed solution introduces new competitive advantages, or enhances existing advantages (15 %)
5. Potential to increase market power and share (10 %)
6. Potential to increase operational efficiency and lower costs (10 %)
7. Alignment with BCAA’s mission and core values (8 %)
8. Cost to implement (including opportunity costs) (5 %)
9. Potential to introduce new risks, or to increase exposure to current risks (5 %)
10. Potential to increase learning opportunities for staff (2 %)

4.3 Proposed solutions: an “ABC of options”

Our proposed solutions fall broadly into the category of corporate, rather than business, strategy – that is, they address the extent to which BCAA should vertically
integrate backwards into its supply chain. Our “ABC of options” can be classified into three main groups under the headings of “acquire,” “build,” and “collaborate.”

4.3.1 Acquire: purchase Vulog or a close competitor

4.3.1.1 Motivation for and advantages of acquisition

Given that BCAA faces vertical market failure (Section 3.3.1), it is reasonable for the firm to consider backwards vertical integration, that is, to buy Vulog, or one of its close competitors, and thus assume control over the entire software stack that powers Evo’s car sharing service. In doing so, BCAA would dramatically increase Evo’s power and raise the barrier to entry into the Vancouver car sharing market (Section 3.3.2). Acquisition would also enable BCAA to tailor what are currently Vulog-supplied activities in Evo’s value chain in order to align them more closely with its overall strategy.

According to Porter, it is “risky for activities that are, or could be, tailored to strategy, especially those that are strongly complementary with others” to be outsourced, while those that are generic, that is, “cannot be meaningfully tailored to a company’s position, can be safely outsourced to more efficient external suppliers” (Margretta, 2011). In BCAA’s case, the Vulog-supplied car sharing platform is integral to Evo’s premium-priced, differentiation strategy, which is based on the value proposition of convenience, utility, and identity. This is to say that the “fit” is tight and there are multiple points of close contact (Figure 2.7). These stem primarily from the free-floating nature of Evo’s fleet, mobile reservations, and by-the-minute billing. In addition, there are abundant other opportunities to tailor Vulog-related activities so as to make Evo’s value proposition even more compelling. These advantages could be effected either by acquisition of Vulog, or by building a car sharing platform in-house, from scratch. The latter option is discussed in the Section 4.3.2 (below).

Acquisition of Vulog can also be viewed in the (related) context of value chain evolution (VCE) theory developed by Clayton Christensen. This theory suggests that “companies ought to control any activity, or combination of activities, that drives
performance along dimensions that matter most to customers. Directly controlling, or integrating, an activity gives companies the ability to run experiments to solve problems caused by unpredictable “interdependencies” between activities. These same interdependencies can frustrate specialist firms that try to focus on a single piece of a product’s or service’s value chain.” (Christensen, Anthony & Roth, 2004). Evo customers value the availability and reliability of vehicles, the reliability and responsiveness of the reservation system, and the flexibility of the rental model. Taking ownership of its own car sharing platform via vertical integration would permit Evo to enhance in a substantial manner the second of these dimensions.

4.3.1.2 Risks and cost estimate

Despite the compelling strategic reasons in principle for BCAA to buy Vulog, it should be recognized that vertical integration is risky in practice. To reiterate the point made by Stuckey and White, vertical integration should not be attempted unless it is “absolutely necessary to create or protect value” (Stuckey & White, 1993). These McKinsey & Company analysts warn that “entry via acquisitions will not create value for the acquirer if it has to hand over the capitalized value of the economic surplus in the form of an inflated acquisition price. Often, the existing players in the less powerful stages of an industry chain pay too much for businesses in the powerful stages.” BCAA would do well to heed this warning. Given that Vulog has taken at least €1.5MM in venture funding and that investors will naturally want to receive a healthy multiple in return, an outright purchase of Vulog is likely to be very expensive – probably within the ballpark of $10–15MM.

Acquisition and subsequent integration will be complicated by many of the same factors that currently plague the relationship between the two companies – that is, Vulog is a small remote firm operating in a different language, time zone, and culture. Purchase and relocation of the firm, or portion thereof, to Vancouver would alleviate only the distance and time zone problems, but would leave the language and cultural barriers intact.
Post-acquisition difficulties are likely to be exacerbated further by the contractual commitments that Vulog has with its existing customers. In principle, these customers would become paying clients of BCAA’s, but in practice, they would continue to test the limits of the new software division’s resources, in much the same way that they do now. Therefore, Evo’s specific needs may continue to suffer in the near future, even though they would in principle receive higher priority. Unless the transition is managed skilfully, the benefits of acquisition would be far from immediate. However, over time, as more programmers and support staff could be hired in to help, and as Vulog’s current contracts can be renegotiated, Evo would progressively receive more attention.

Related to the difficulties outlined above, there may be a period of low productivity post-acquisition as predominantly French-speaking ex-Vulog software engineers would be required to introduce new English-speaking programmers in Burnaby to the intricacies of the code base. These slowdowns would further delay the accrual of benefits to Evo that acquisition of Vulog should bring in principle. The combined delays are equivalent to a substantial opportunity cost that need to be added to the actual cost of purchase.

4.3.1.3 Proposed post-acquisition integration of Vulog into BCAA

Given these concerns, a possible route to integrating Vulog smoothly into BCAA’s organization and operations would be to leave the Vulog office largely intact where it is in France and relocate only a core team of its best developers (two to three) to BCAA’s headquarters in Burnaby. These programmers would work with a substantial team of newly hired, highly qualified developers (six to eight) to customize Vulog’s codebase to Evo’s specific requirements as quickly as possible. The majority of Vulog’s employees would continue to service its outstanding obligations and over time the software division would be relocated to Burnaby through attrition. The French office would be kept open indefinitely to handle sales in Europe.
4.3.1.4 Possible future scenario and anticipated response by competitors

The purchase of Vulog will not result in immediate, visible changes to the Evo service and is therefore unlikely to elicit a vigorous competitive response. However, the considerable cost of the acquisition may curtail Evo’s ability to expand its fleet substantially in the immediate future. Moreover, the difficulties of integrating the new firm may absorb management’s attention. These factors may make Evo vulnerable to decreasing market share in the near term. However, as Vulog’s platform is tailored over time to Evo’s specific needs and the benefits of the acquisition begin to accrue, we anticipate that market share will begin to rise concomitant with increases in customer satisfaction. We also predict increases in operational efficiency and lowered costs. Of BCAA’s competitors, car2go is the best positioned to counter the advantages brought to Evo by acquisition of Vulog as it already has control over its own car sharing platform (developed in-house). Perhaps not coincidentally, it is also the only of Evo’s competitors to offer a free-floating rental model.

4.3.2 Build: develop a car sharing platform in-house

The other option for vertical integration is for BCAA to insource development of its own car sharing software platform. This could include the fleet management software, client-facing web application, and native iOS and Android applications. The in-vehicle hardware and RFID cards are commodity items that BCAA should continue to source from Vulog or purchase on the open market.

Of the three options presented in this chapter, building could take the most time to implement, depending on scope. Depending on internal human resources, skills, and expertise, BCAA may need to hire a completely new team with new abilities to create such a product. Skilled product managers, business analysts, user experience designers, and software engineers are difficult to find and also command high salaries. To accelerate the process, additional contract employees may need to be hired to supplement permanent employees, particularly in the demanding lead-up to the initial release. Personnel requirements for ongoing development and maintenance would likely be less intensive. Another option would be to outsource the initial development and, optionally, the ongoing
maintenance of a new car sharing platform. We do not recommend this approach as it introduces Evo to another yet another third party vendor and does not eliminate the current risk of VMF.

We see two competing approaches to transition Evo from the current Vulog-supplied system to an in-sourced replacement: stage the replacement of individual layers of the software stack one at a time for the current Vancouver-based fleet, or introduce a complete, integrated platform to a new market.

4.3.2.1  **Stepwise replacement of software components**

A layer-by-layer approach would allow BCAA to focus on one product at a time, and provide an easy path to revert back to the Vulog system if something were to go wrong during implementation. This approach should begin with the client-facing layer for a number of reasons. First, though the mobile app requires development for two different platforms (iOS and Android), it is much simpler to build than the fleet management software and impacts customer satisfaction more directly, making it a much easier win. Second, Vulog’s system already supports the option for clients to develop their own client-facing applications, presumably by vending access to well-defined application programming interfaces, or APIs (see Figure 4.1, Option No. 2). Third, by developing its own mobile app, BCAA would be free to incorporate a data-gathering package that would allow it to harvest a large number of user metrics, such as app launch location, driving patterns, app usage patterns, etc., which may not have been made available through Vulog’s integrated system. Implementing this would allow BCAA to resolve some of the identified strategic issues of using Vulog’s current fleet management system. The final reason to develop the client-facing applications first is that it provides BCAA a future option as to whether or not to continue backward integration into the fleet management software.
Building the client-facing applications also gives BCAA the option to sell these applications back to Vulog, as it would be an improvement over their current offering. Another option would be to sell it on the open market to other car sharing organizations who either use Vulog or another similar fleet management system with similar interfaces.

Starting with detailed requirements, specifications, and defined integration points, the development of the client-facing web application as well as the native iOS and Android applications would take a team of five an estimated three to four months to complete. The team would require a number of skills, such as product and project management, business and information analysis, user experience design, front and backend software development and systems engineering.
4.3.2.2 New market introduction with complete platform

If BCAA intends to grow Evo into a different geographical market, another option would be to create the entire software platform, and use it initially in only that new market. This would give BCAA the opportunity to iron out software bugs and workflow issues before migrating the current Vancouver-based Evo service to the new platform. “Pilot” home zones could be located in Victoria, Whistler, or another Metro Vancouver city, such as Surrey. Since these markets are geographically isolated from Evo’s current market in Vancouver, use of different platforms across two markets would not be disruptive to Evo’s current customers.

Another possibility would be for BCAA to target a new market segment; one example is to offer a separate “Evo for Business” service, using either an inter- or intra-firm fleet sharing model. This new B2B offering could use a completely different car sharing platform because it would be positioned as a distinct service from the current consumer-focussed Evo. Another related segment that could be targeted in this manner is government, which could be induced to cut costs by fleet sharing. Once comfortable with the software platform, BCAA could then opt to transition the current Evo to the new platform. Marketing a car sharing service to governments and businesses also has the added benefit of opening new demographics to BCAA, as most clients to date have been individual consumers.

By developing its own car sharing software platform, BCAA also opens up the option of vending the product to other CSOs across the world, essentially becoming a competitor to Vulog. BCAA would retain exclusive rights to the platform within British Columbia and profit from selling the platform in other geographies. As Evo’s needs are unlikely to be unique in the car sharing space, this could be an intriguing new business opportunity for BCAA. Since BCAA would be using the software itself, it would be in the association’s best interest to make the platform competitive or superior to other platforms in the same market. This incentive to create a great car sharing platform can be leveraged, packaged, and sold to other car sharing firms.
Starting with detailed requirements, specifications, and defined integration points, this project would take an estimated six to nine months to complete with a team of twelve. The skills needed on this team would be similar to those described in Section 4.3.2.1, but would require a larger team as both the scale and scope are much greater. This approach will allow BCAA to build the platform to its own specification, at its own pace, and based on its own priorities. BCAA would thereby take complete control of one of the key pieces of the Evo user experience and have unfettered access to the usage metrics that would enable it to add or modify features as consumer trends and tastes change, and to make rapid, data-driven business decisions.

4.3.2.3 Likely response by competitors

As building either the client-facing applications or the complete car sharing platform does not directly impact Evo’s competitors in the short term, there would likely be no immediate competitor response, particularly if the effort were to be kept secret. However, this vertical integration would empower BCAA to make quicker and better data-driven decisions. This increased nimbleness, and concomitant expansion of market share, would eventually elicit a competitive response from within the Vancouver car sharing oligopoly. Each of Evo’s competitors would need to assume control of its car sharing platform in order to match BCAA’s effectiveness, which would effectively raise the barriers to entry for operating in this market.

4.3.3 Collaborate: work closely with Vulog to improve its platform

The third and final option does not involve vertical integration. Instead, Evo focuses on collaborating more closely with Vulog and on remedying the principal-agent problem outlined in Section 3.2.3 through alignment of incentives. The “collaborate” option is likely to be the easiest to implement, lowest cost, and least disruptive to the current Evo operations. However, by taking this route, Evo will not gain full control over its software platform, or completely eliminate the risks around vertical market failure (Section 3.3.1).

In order for collaboration with Vulog to be successful, Evo needs to eliminate the risks identified in Section 3.2.2, i.e., those around language, cultural, and time zone
differences, as well as software issues. First, BCAA should hire two or three dedicated developers to work exclusively on Evo-required platform modifications and enhancements that Vulog does not have the resources to address, and to fix bugs that arise in day-to-day operations. These people would be responsible solely to Evo and physically located at the BCAA offices in Burnaby, British Columbia. In addition to being competent software engineers, they would ideally be fluently bilingual in English and French. The location and hiring criteria of these developers is critical to eliminate the current challenges around working in different time zones, having different work cultures, and the French/English language barrier.

In order to solve the principal-agent problem, Evo needs to offer Vulog incentives to better align their business goals. This can be done in a number of ways. One option is to begin a piece-rate payment agreement in which Vulog would be paid only upon successful completion of milestones. These milestones could include software customization, report generation, or app upgrades. Payment following completion would incent Vulog to action the Evo’s requests in a more timely fashion. Another option would be for Evo to provide Vulog with a positive case study, or client reference, upon successful completion of requested changes. In this option, Vulog wins because it receives a valuable piece of marketing material involving a North American car sharing organization, and Evo wins because Vulog will go “above and beyond” to complete the changes in an efficient and thorough manner. The last option to solving the principal-agent problem is to provide Vulog with some “skin in the game,” which could take the form of profit sharing. In this case, the success of the two firms would be intimately entwined and therefore their business goals would become much better aligned. In all of these options, Evo minimizes, or eliminates, the risks associated with the current principal-agent problem by incenting Vulog to act in its best interest through providing payment, positive reference, or financial gains.

The collaboration option is relatively safe for Evo. It does not introduce significant new risks or challenges; the challenges that have arisen in the relationship are already well known. Unfortunately, collaborating also does not yield new competitive advantages for
Evo’s business and does not give BCAA direct control over the direction of the software platform. By collaborating more closely with Vulog, Evo does not immediately benefit from additional business opportunities that would arise from the other strategic options presented in this chapter.

Evo’s collaboration with Vulog is unlikely to elicit strategic changes by competing CSOs. Vulog’s vested interest would make Evo’s software better and more reliable, which may ultimately lead to incremental expansion of Evo’s market share. However, it is unlikely that there would be changes sufficiently dramatic to alert competitors, or drive them to action. Collaboration is a viable option for Evo if the organization wants to make an immediate and relatively inexpensive change, but does not provide substantial strategic upside.

4.4 Evaluation

In our estimation, the three best options available to BCAA are: (i) take control of Evo’s car sharing platform by acquiring Vulog, or a similar company; (ii) take control of the client-facing component of the platform by developing Vulog-compatible, client-facing applications in-house, with a future option to build the back-end fleet management software; and (iii) increase collaboration with Vulog to ensure their interests are aligned with BCAA’s. Table 4.1 summarizes our comparative assessment of these options against the evaluation criteria given in Section 4.2. Each criterion was scored on a scale from 1 to 5, with 5 being the most favourable. As can be seen by the total weighted scores, the option to build the client-facing software is the best strategic direction that BCAA could take. The possibility of acquiring Vulog, or a competitor, runs a close second, while the collaboration option is a distant third.
Table 4.1 Comparative, semi-quantitative assessment of “acquire,” “build,” and “collaborate” strategic options according to the evaluation criteria listed in Section 4.2 (weightings provided by BCAA SVP & CIO, Ken Ontko; table developed by the authors).

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
<th>Acquire</th>
<th>Build</th>
<th>Collaborate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to implement</td>
<td>15%</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Potential to drive increases in BCAA membership</td>
<td>15%</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Potential to increase customer satisfaction</td>
<td>15%</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Degree to which the proposed solution introduces new competitive advantages, or enhances existing advantages</td>
<td>15%</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Potential to increase market power and share</td>
<td>10%</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Potential to increase operational efficiency and lower costs</td>
<td>10%</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Alignment with BCAA’s mission and core values</td>
<td>8%</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Cost to implement (including opportunity costs)</td>
<td>5%</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Potential to introduce new risks, or to increase exposure to current risks</td>
<td>5%</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Potential to increase learning opportunities for staff</td>
<td>2%</td>
<td>3</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
The four criteria by which the build and acquire options differed were: time to implement, cost, risk, and learning opportunities. These aspects are compared in the following sections.

### 4.4.1 Time to implement

The time needed to negotiate, conduct due diligence, and overcome regulatory hurdles to acquire Vulog is not entirely within BCAA’s control, and could be lengthy, especially if the firm is not actively looking to be acquired. In addition to this, the time needed to integrate Vulog, learn from Vulog employees how their software is architected, communicate new priorities, and redress deficiencies will mean that anticipated benefits from the acquisition will be slow to realize, and could be on the order of six months up to several years. By comparison, building the client-facing software would be much quicker (three to four months for a team of five). There are many tools to aid in multi-platform development, allowing near simultaneous development across the web, iOS, and Android platforms to speed up development (this is likely the development path that Vulog used, but is at the expense of user experience). BCAA may also opt for a continual release methodology, with the initial release having a level of functionality similar to Vulog’s current application, and rolling out new features regularly. This will accelerate the initial release to beta testers and allow BCAA to set priorities based on their feedback.

### 4.4.2 Cost

We estimate that the cost of building the client-facing applications from scratch with a team of five for 3–4 months is approximately $150,000–$200,000. The expected cost of acquiring Vulog, or similar firm, is approximately two orders of magnitude greater, estimated at $10–15MM (Section 4.3.1). This does not factor in the opportunity costs (such as lost investment revenue; Section 2.5), which would only compound this difference. In addition to the advantage of significantly lower cost, developing its own client-facing applications also gives BCAA the ability of adding many of the features it feels are lacking

| Total Weighted Score | 100% | 3.71 | 4.15 | 2.97 |
in Vulog’s current fleet management software, without needing to build its own. If BCAA’s experience building the client-facing software is favourable, and if the association determines that having done so does not go far enough to accomplish its strategic goals, it may opt to build the fleet management layer as well.

4.4.3 Risk

By attempting to build its own car sharing platform, BCAA exposes itself to considerable risk. This risk arises because software development is outside the association’s areas of core expertise, all of which are connected to provision insurance.

In transitioning Evo away from Vulog’s system, BCAA will be moving away from an application that has been thoroughly battle-tested in day-to-day operations across tens of thousands of vehicles and hundreds of thousands of users around the world to a comparatively unproven one developed by a company with no prior experience in the field. Launching ambitious software at this scale always introduces unexpected bugs, performance hiccups, and other reliability issues – wrinkles that Vulog has already ironed out of its platform. Since the new applications will be using the existing Vulog fleet management software, BCAA could easily run both Vulog’s applications and its own concurrently. This would allow the association to “beta test” its new applications with its best, most adventurous and loyal users, and to roll it out to ever more users over time. In addition to minimizing risk, this strategy could be deployed as a marketing tool to create buzz around the new software. Evo customers would be thrilled to be hand-selected to help improve the service, and could also be rewarded with discounted trips for their valuable feedback.

Acquiring Vulog or a similar firm has different types of risks, including financial, cultural, and technical. As discussed in Section 4.3.1, a private, venture capital-funded firm in a growing market with a stable of clients is likely to command a healthy multiple of the invested capital, and may demand nothing less than the net present value of its expected lifetime returns. Therefore, unless BCAA can demonstrate that Vulog is worth more under its ownership, the association will not receive good value. In addition to the financial risk,
Vulog has a culture completely different from that of BCAA (Section 3.2.2). Cultural differences run very deep and are a common reason why mergers and acquisitions fail (Nahavandi & Malekzadeh, 1988), and should not be taken lightly. The acquisition also poses a technical risk; it is not currently known how well Vulog’s code is written, how maintainable it is, and how easy it would be to modify and improve it. By buying Vulog, BCAA is betting that it will be able to improve the software in ways that Vulog could or would not.

4.4.4 Opportunities for staff learning

Building the new client-facing applications will give BCAA staff manifold opportunities to learn new skills. Developers for iOS and Android devices are currently in high demand, and staff may be excited and motivated to build their resumes by taking on these new challenges. Acquiring Vulog would also provide similar opportunities to learn, but on a smaller scale as BCAA would likely retain all of Vulog’s employees, at least initially.

4.5 Selection and Recommendation

Based on the semi-quantitative comparison of the three options presented in Table 4.1, and on the discussion that follows in Sections 4.4.1–4, we propose that BCAA should begin to build its own car sharing platform in-house by developing the client-facing software. Integrating backwards in this manner will address many of the issues from the vertical market failure described in Section 3.5, will enable BCAA to take control of the primary client interface for Evo (Section 3.2.1.2) and allow them to collect Evo usage data that will empower BCAA to make data-driven decisions and optimizations (Section 3.2.1.3). This will drastically increase the business unit strength of Evo, and allow it to capture a higher percentage of the market in a more cost effective manner (Figure 4.2).
Figure 4.2 General Electric-McKinsey matrix showing the position and estimated current market share of Evo. The arrows indicates the anticipated change as the car sharing industry grows in Vancouver, as well as the increased strength of Evo after backwards integration (developed by the authors).
5: Recommendations for Future Work and Concluding Remarks

We believe strongly that in order for Evo to maintain its differentiated and premium-priced position in Vancouver’s car sharing market, BCAA absolutely must assume greater control over its software. Not to do so would be to risk commoditization in a rapidly growing industry that is attractive to new entrants and to limit the degree to which Evo could tailor activities in its value chain to support its strategy. Moreover, Evo’s current reliance on Vulog for this essential component leaves it vulnerable to hold-up.

By developing its own car sharing platform in-house, as we recommend, BCAA would gain other enticing options beyond improving Evo. For example, the association would be able to:

1. Vend the platform to other CSOs worldwide, much as Vulog does now.
2. Develop a peer-to-peer car sharing service similar to that of RelayRides.

All three of these possibilities offer significant opportunities and challenges for BCAA and their respective viabilities should be addressed by further studies.

By launching Evo Car Share, BCAA has created a wholly new and potentially lucrative line of business that represents a bold and promising step towards expanding its membership among a demographic that has traditionally been underserved by the association. In doing so, BCAA has remained true to its mission and core values, and has established an important service that is simultaneously respectful of the environment and much needed by the citizens of Vancouver. BCAA has also ventured into the sharing economy, which may be the most evident manifestation of the Internet’s promise to transform the very nature of society. Given Apple’s rumoured plans to develop a car, Google’s pioneering work in self-driving vehicles, and Uber’s disruption of the taxi industry, it is quite possible that personal transportation is the next big battleground of the
high tech industry – and BCAA is in the thick of it. These are truly exciting times for a 110-year-old association that, despite its age and long tradition, is acting like a start-up.
Reference List


