

Market Analysis for RidePartner

Team Foresight

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Preface by James H. Morris

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The following report was done by a group of MS students at Carnegie Mellon Silicon Valley. Their job was to explore the market opportunity for a fictional company called NDSS, a small software contractor. Some of the specifics won't apply everywhere, but the information they gathered about SF Bay Area conditions and competitors was excellent. The method of sizing and analyzing the market was also excellent.

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Executive Summary

RidePartner's customer analysis and market segmentation result in a \$3.5M market opportunity for NDSS (\$17.5M addressable with a 20% market share assumption, please see Customer Analysis for sizing approach and logic). The primary subjective attributes of the market size assessment were fuel cost trends and carpooling adoption rate. The future growth potential of the market is expected to be positive in the medium term (due to increasing fuel cost), but low to potentially negative over the long-term due to alternative solutions (e.g. lower-priced alternative fuels).

Based on the data provided in the analysis, Team Foresight recommends against moving forward with RidePartner. The primary reasons for this recommendation are as follows:

1. RidePartner's market success is predicated upon changing peoples' behavior. As Christiansen points out in his article, businesses that bank on that usually fail.¹
2. The opportunity size is small. The projected revenue of \$3.5M is not expected to support the required R&D and Sales/Marketing/etc.
3. Carpooling is not a long-term growth market. The competitive pressure from emerging transportation alternatives will, over time, reduce the attractiveness of carpools.

Product Concept Summary

NDSS has previously received a business proposal to develop RidePartner, a system to support businesses with their efforts to reduce the miles, dollars and environmental impact of commuting. RidePartner will allow employees to find and maintain carpool arrangements with other employees; automating services that make carpooling more attractive (e.g. arrange ride alternatives to accommodate unscheduled activities). RidePartner will generate revenue for NDSS through a licensing model. RidePartner will be hosted by NDSS and licensed to corporations, with options for corporate internally hosted instances that are customized and integrated with HR systems. The proposed vision is to initially target RidePartner at large companies with 500 or more employees in Silicon Valley; an area that is densely populated and lacks comprehensive, point to point, mass transit solutions. A compelling reason for a company to implement RidePartner as an enterprise solution is that it can be easily integrated into the company's benefit program. It offers cost effective carpooling solutions to its employees while positively impacting employee hiring and retention.

Market Analysis Introduction

In this document, Team Foresight has performed a detailed market analysis for RidePartner to further assess the validity of the business proposal. The analysis focuses on NDSS and RidePartner's climate, customers, company, competitors, and collaborators.

Competitive Market Analysis

1. Climate

1.1 PEST analysis

1.1.1 Political

The current political factors considered for RidePartner are as follows:

Kyoto Protocol – A protocol from the United Nations Framework on Climate Change that calls for the United States to reduce its greenhouse gas emissions is something many Americans have taken seriously. Thus, Silicon Valley has formed an initiative that involves community leaders collaborating to reduce emissions by 20% below the 1990 level by the year 2010.²

Environmental Regulations - The headline reads "California will offer Plan to Cut Harmful Emission" definitely effects businesses and residents of California. According to the California Global Warming Solutions Act of 2006, there are plans to cut greenhouse gas emissions to the 1990 levels in 12 years by requiring more energy-efficient appliances and buildings, lowering vehicle emissions, and generating 33 percent of its energy from renewable sources.³

- Passenger vehicles, freight, rail and aviation account for more than 40% of California's greenhouse gas emissions depicted in Figure 1. Passenger vehicle emissions comprise two-thirds of that total. What is more, vehicle emissions are one of the fastest growing sources of greenhouse gas emissions. Those statistics spurred California to adopt strict emission standards for new passenger vehicles in 2004-the first in the nation.⁴

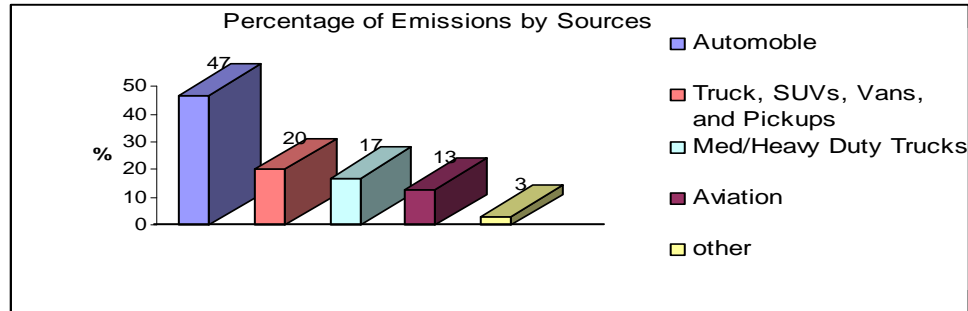


Figure 1 – Sources of Emissions

- Given these statistics, California Environmental Protection Air Resources Board (ARB) has regulations to ensure the state of California as a whole reduce its environmental footprint. Some may think that it's just a matter of time before businesses are charged for their contribution to emission and for not meeting regulatory requirements. An example is the city ordinance (Employers obligated to provide mass transit commuter benefits) issued on businesses in the city of San Francisco.

Taxation – Federal Tax Law 132f ([Section 132\(f\)](#)) provides tax benefits to both employers and employees for utilizing public transportation to commute to work.

1.1.2 Economic

Today's economy is looking pretty grim, but from NDSS' perspective this could be an opportunity for RidePartner. Successful software and software services IPOs did occur in 2002, after the dot-com bust of 2001.⁵

Per analysts, the fundamental outlook for the Computer Software and Services Industry is neutral. As the economy continues to spiral downward, there are expectations that corporations, like consumers, will decrease their spending and the purchase of software will trend toward the low end of what is thought to be "steady state" growth in the mid-to high-single digits in 2008. Even though, this trend is expected to continue through 2009, there is growth potential for NDSS.⁶

Software as a Service Market – In 2007 Gartner Group reported that the global SaaS market reached \$6.3 Billion in 2006 and may hit \$19.3 Billion by 2011. With \$19.3 Billion in play, the opportunity to carve off even a small, but appreciable percentage can move the revenue dial⁷ in the positive direction for NDSS' RidePartner.

Global Economy – Slow growth of today's US and global economy, increased U.S. unemployment rate (6.5%), the increased unemployment rate in Silicon Valley (6.9%, a 46 percent increase from a year ago⁸), are all factors that NDSS must take into consideration when deploying RidePartner. If employers are reducing work force, this reduction decreases the number of prospective commuters and impacts the probability of critical mass needed for RidePartner.

1.1.3 Social

Additional crucial factors NDSS must consider with RidePartner are social attitudes and commuting behaviors:

The freedom of driving alone – In contrast to the increase in riders of public transportation, there is still a larger number of Americans that prefer to ride alone as illustrated in the Figure 2 below. Can tax saving benefits change their attitudes?

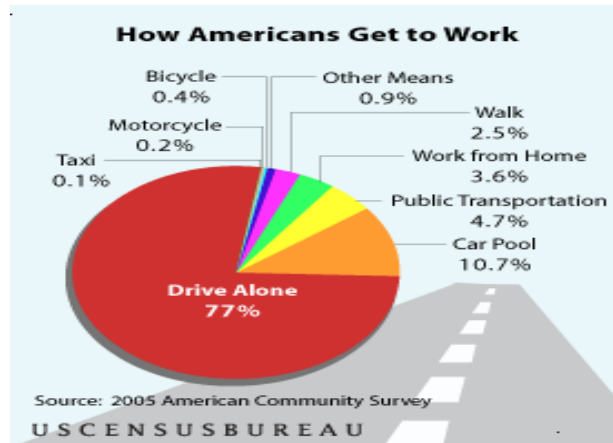


Figure 2 – How Americans Get to Work

No, the tax incentive is not big enough. From the perspective of the persona of busy working parent, who needs flexibility, greater benefits would have to be a factor for carpooling to reach critical mass.

With the rising fuel costs, the American Public Transportation Association (APTA) reported an increase in trips from 140 million to 2.8 billion during the second quarter of 2008 compared to the same time last year.

Social behavior could change by gas price elasticity on demand – The research suggests that a 10 percent increase in the retail price of gasoline would reduce consumption by about 0.6 percent in the short run. [short run elasticity=0.06] Estimates of the long run elasticity of demand for gasoline indicate that a sustained increase of 10 percent in price eventually would reduce gasoline consumption by about 4 percent. That effect is as much as seven times larger than the estimated short-run response, but it would not be fully realized unless prices remained high long enough for the entire stock of passenger vehicles to be replaced by new vehicles purchased under the effect of higher gasoline prices—or about 15 years.⁹ Relative to RidePartner, supply and demand of oil versa higher gas prices would take a significant amount of time before impacting commuter's behavior.

1.1.4 Technological

Using the internet and social networking sites such as Facebook, Craigslist and MySpace are the hottest trends of this decade. An internet platform for RidePartner should excel as proven during the historical election where both parties used the internet to blog, address questions, email, and raise money. In terms of technology, President-elect Obama vowed on his Web site to "ensure an open Internet, create a transparent and connected democracy, encourage a modern communications infrastructure, improve America's competitiveness, and employ science and technology to solve our nation's most pressing problems."

Pocket size/mobile wireless devices, whether iPhone or Blackberry Storm, the growing use of these devices can be contributing factors for improving commuter experiences and RidePartner. For example, the iPhone features Google Street Maps and GPS that can be used to enhance commuting.¹⁰

Green Tech – More electric cars and more charge station coming to California. Better Place announced that it aims by 2012 to bring a \$1 billion electric-car infrastructure system to the California Bay Area, whose leader's unveiled policies to fast-track the adoption of electric cars. The Palo Alto, Calif., start-up will apply its unique business model, followed in [Israel](#), Denmark, and [Australia](#), of providing the public stations to charge vehicles and swap out leased batteries.¹¹ This is a potential threat for NDSS' commuter solution RidePartner by decreasing the demand for high occupancy vehicle (HOV) with electric car.

1.2 Recommendations

With the decrease in oil prices, declining global economy, loss of jobs in the U.S. and lower consumer confidence, there are reasons to be concerned about entering the market. However, RidePartner could be a SaaS offering that supports enterprises concerns with minimizing their green footprint, addresses employees commuting concerns, improves employees commuting experience, and reduces emission by decreasing the number of vehicles on the road. Many products offered by the software industry can increase efficiency, important in tough economic times.¹² Given that there is a need for commuter solutions and the outlook for computer software and services is favorable, it is recommended that NDSS pursue the SaaS model, but consider a plan to mitigate the risk of commuter's attitude

and the economy environment.

2 Customer

2.1 Market analysis approach

The RidePartner customers are enterprises. The value of the RidePartner solution is a benefit offered by these enterprises to their employees. Thus, the value of the RidePartner solution is ultimately the value of the benefit it provides to those employees. A “green” corporate image and current or future regulatory concerns are also expected to provide a motivating factor in support of adoption of the RidePartner solution, however these are difficult to value and are not relied upon in this customer analysis.

This value was determined through the following approach:

1. Define the market segmentation variables and values.
2. Quantify the total cost of commuting for the target market using published statistics.
3. Calculate a benefit value for the RidePartner solution by determining the portion of the total commuting cost applicable to carpooling. Use probabilistic decision analysis to adjust for the most significant attributes with uncertainty.
4. Select attributes that form significant dependent variables in the benefit value calculation (e.g. fuel cost). Adjust probabilistic decision model to account for this sensitivity.
5. Determine opportunities for increasing market size through adjustments to market segmentation and/or features. Adjust the results of the above steps based on any changes to the vision.

2.2 Market segmentation

The variables defining the target market are shown in Table 1. Other variables including demographics (e.g. age), job categorizations (e.g. professional/non-professional, business domain), type of business and personality were considered, but were deemed difficult to reliably distinguish with respect to market definition (e.g. personality) or deemed an insignificant influence (e.g. age) in relation to the selected variables.

Segmentation Variable	Target Market	Rationale
Organization type	Employers	Specific vision target
Location	Silicon Valley	Silicon Valley provides an optimal target in the Bay Area for carpooling due to the limited mass transit offerings it provides in comparison to other Bay Area regions (e.g. San Francisco).
Employer Size	>500 employees	Change to the prior vision (1000 or more employees) based on market analysis. It is expected that the reduction in organization size will not result in a significant negative impact to carpooling factors such as matching success (benefit of increased market size will outweigh potential negative impact on matching).
Work Schedule	Predictable working hours	Influences adoption due to practicality of coordinating with others
Income	Middle Class	Influences adoption due to cost of commuting as a percentage of income

Table 1 Market Segmentation Variables

2.3 Potential customers

2.3.1 Market Size Based on Segmentation

As mentioned above, the market size was determined by analyzing the potential benefit to employees (in \$US dollars) that result from carpooling. The total “cost of commuting” for the target market is determined to provide a starting point for analysis. The employee population for the target market (organizations with 500 or more employees) is 220,001.¹³ The average commute distance for those employees is 22.8 miles.^{14 15} The cost of driving a mile is estimated at 32.5 cents.^{16 17} This results in a total annual commuting cost for the target market of \$310M, assuming a fuel cost of \$3.50/gal (note that the total commuting cost was computed for multiple fuel costs – see decision model below) and 225 commuting days. The market segmentation variables “work schedule” and “income” are considered factors that influence the carpooling adoption rate (see decision model below).

Next, the portion of total commuting cost that represents an addressable market for the RidePartner solution is determined through the following steps:

1. The overall commuting cost determined by employee population and commuting cost is reduced by 1/3 to account for the fact that carpooling is a shared expense. An assumption of a 3 rider per car average results in a 2/3 reduction in total cost (resulting in **\$207M**, **\$245M** and **\$282M** for fuel costs at \$2.50, \$3.50 and \$4.50, respectively).
2. The carpooling adoption rate and fuel cost are determined to be the primary contributors to pricing sensitivity (in the sense that the value of the benefit is directly related to these variables). These are incorporated in a probabilistic decision model (see below) due to the uncertainty that exists in assigning a specific value to these variables, resulting in a value of **\$35M**.
3. The market size resulting from the decision model is reduced by 50% to account for the “perceived” value of the solution from an organization perspective. The assumption here is that the benefit cost (for this type of solution) will not be simply transferred from the employee to the employer; the employer will expect an overall cost reduction similar to that offered by other benefits (e.g. spreading the cost of healthcare over a population results in lower healthcare insurance premiums). In addition, the eventual presence of multiple solution providers (see Competitor Analysis) will reduce pricing, and thus market size. This results in an addressable market of **\$17.5M**.
4. A market share of 20% is assumed for NDSS. See the Competitor Analysis section for a description of the competitive landscape. Given the negative impact of relative ease of entry and potential for “no-cost” solutions and the positive impact of a regional focus, 20% is deemed a reasonable assumption. The market opportunity is thus set at **\$3.5M**. Figure 4 shows the probabilistic decision model and associated calculations for the steps 2-4.

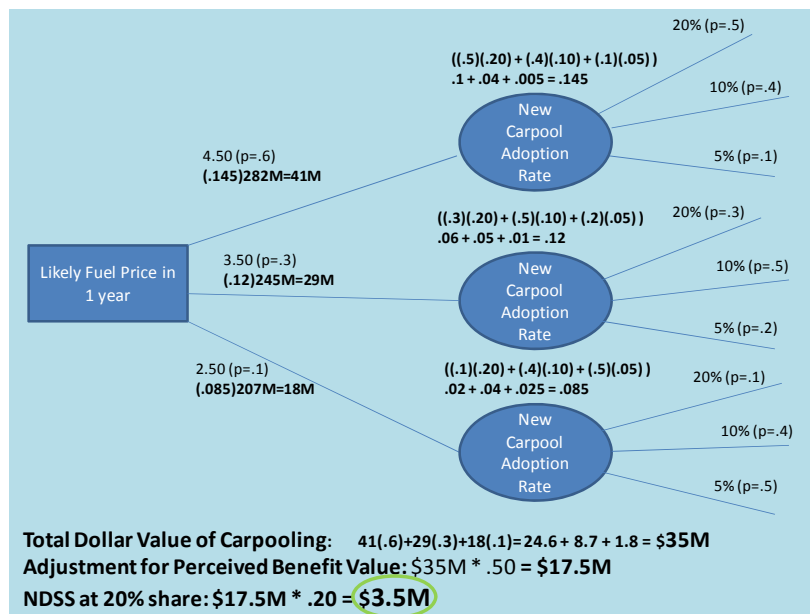


Figure 3 – Probabilistic Decision Mode For RidePartner Market Share Calculation

This model includes fuel cost and carpooling adoption as uncertainties. Near-term projections of fuel prices should not be considered highly reliable, as evidenced by recent trends. Various published projections were reviewed (see <http://www.eia.doe.gov/steo>, for example), before setting the values at \$2.50, \$3.50 and \$4.50, with probabilities at 10%, 30% and 60% respectively. Near-term projections are used in order to avoid errors that would be associated with a lack of long-term views of alternative solutions (e.g. alternative fuels).

Carpooling adoption rates are set at 5%, 10% and 20% with selected probabilities set as shown in Figure 3. Adoption rates are highly subjective, but are based on “new” adopters of carpooling. The current average nationally is approximately 11% (see Climate section), but the RidePartner solution is not necessarily of value to existing carpoolers such as long-standing carpools, spouse carpools, etc. It is considered important to refrain from being overly optimistic due the societal changes required for higher adoption rates. The selected rates and probabilities are considered reasonable based on the benefit offered by the RidePartner solution.

The price of fuel influences the adoption rate (higher fuel costs increase motivations for cost savings, with

carpooling a cost saving alternative), thus the adoption rates at each fuel cost are calculated and then applied to the fuel costs.

2.3.2 Reaching the target market

Although the market size can be established by considering the value RidePartner offers to employees, the employer is the ultimate sales target. The employer organizations are typically segmented in a manner that results in the HR department being the direct sales target. A significant direct sales approach would be difficult for NDSS to staff and execute in the time frames targeted for the RidePartner solution. Instead, NDSS can focus on 1) partnering with other organizations that are already established as benefit solution providers (e.g. ADP) 2) joint development of market materials that will provide relatively low cost awareness among potential customers 3) leveraging existing NDSS relationships in Silicon Valley as opportunities for beta test sites and eventual customers and 4) leveraging publicity opportunities by joining “green” events in the area targeting employers. A very small direct sales force should be established to follow up on leads generated from the above activities. In addition to direct considerations for reaching the employers, reaching the employees both pre- and post-sale will enhance RidePartner success.

2.4 Recommendations

The RidePartner market analysis has quantified a market opportunity of **\$3.5M** for the RidePartner solution. Enhancement to the prior vision resulted from market analysis is a factor in establishing an opportunity at this level (see Table 2).

Change	Effect on Value of RidePartner Offering
Partner with Zipcar to offer employer site car sharing. Shared cars can be used for errands during the day and emergency rides home.	<ul style="list-style-type: none"> • Makes the offering of value to existing carpoolers (who do not need to be introduced to a carpool through RidePartner) by removing some of the inconvenience with respect to work day errands • Removes the need to provide taxi service backup – removes a cost to the employer that would have offset a significant portion of the RidePartner benefit value
Expand the target market to employers with 500 or more employees	Adds 25% (approx) to the RidePartner market opportunity when compared to the prior vision target of employers with 1000 or more employees

Table 2 – Recommendations To RidePartner’s vision

With respect to customer analysis, it is recommended that the proposed adjustments to the vision are incorporated and the initial target market is valued at \$3.5M. However, a primary consideration on the appropriateness of RidePartner for NDSS is the future growth potential of this market. Although expansion into other geographic areas (within the SF Bay Area and nationally) is a straight-forward opportunity for growth, it should be understood that this will likely be offset by the emergence of alternative solutions that offer similar cost savings to commuters (e.g. alternative fuels such as electricity and fuel cell vehicles - see Competitor Analysis). Although it was not analyzed quantitatively, a rational assessment is expected to result in a relatively high probability of reduced value of the RidePartner solution over longer time frames.

3 Company

3.1 NDSS’ internal capabilities (strengths and weaknesses)

Data is derived from current and previous sources regarding the internal status of NDSS.^{18 19} A PRIMO-F styled methodology, which proves to be a more suitable tool for a market analysis than the standard SWOT methods, is used to supply the following analysis.²⁰

3.1.1 People

NDSS is comprised of many highly educated individuals, the technical staff being dominated by Carnegie Mellon University (CMU) graduates. Employees are used to delivering high quality work within allotted time frames. The current group that will be leading up RidePartner effort is the Internet Services Division (ISD). This division currently has 30 employees as compared to the 80 in the Contract Software Engineering group (CSE). Unfortunately, any expertise regarding SaaS or web technologies found within CSE group is already committed working on contracts or other consulting work and may not be utilized for RidePartner.²¹ Because NDSS primarily deals with large defense companies and others under a contract model, its may lack individuals trained to operate within the SaaS delivery model. NDSS also faces the threat of loosing employees as contract derived dollars retract.

3.1.2 Resources

NDSS also has at its disposal an unofficial but potent relationship with CMU. CMU graduates and students, with their invaluable educations, could be harvested as additional employees if needed. Current NDSS employees might also be able to provide contacts within a potential partner's organization. Since NDSS is currently working within a contract business model relationship with customers, it is not used to working with partners. This is a weakness if NDSS continues entertaining working with business partners for RidePartner.

3.1.3 Innovation and Ideas

NDSS leadership is vision capable and entrepreneurially orientated. NDSS did well during the Y2K panic and prospered after the dot com crash. Its leadership has recognized the current offshoring threat to its contract business model; indicating slower growth and retraction in that area. These awareness attributes will lend themselves well to NDSS' future success, particularly when dealing with a new business and product model, RidePartner.

3.1.4 Marketing

Currently NDSS lacks a meaningful market experience in regards to building a SaaS product. Its marketing personnel may not be prepared to market RidePartner as a SaaS offering to customers and potential partners. On the bright side the NDSS name carries with it a marketable reputation for predictable quality. Its work is well designed and constructed. It has delivered on-time and within budget constraints.

3.1.5 Operations

NDSS is no longer a startup and does not face startup issues. Costs in both time and dollars to build software are known. NDSS knows how to please large customers, which RidePartner will be marketed to. Even though the creation of RidePartner is a new undertaking, NDSS will be able to manage it well because of its business experience. Also central to RidePartner's success is that the location of NDSS is near to the targeted customers.²² NDSS understands and lives with the problem that it is trying to solve. Any face to face meetings with potential customers will not be an issue. The geographical area contains a large workforce from which NDSS may hire from. One significant issue that NDSS will have to face is the change required in the company to move to a SaaS model both in terms of delivery and revenue.²³ While NDSS leadership has anticipated this course adjustment the entire organization will have to expend resources to make the change.

3.1.6 Finance

NDSS is currently profitable. NDSS has \$10 million in revenue. Revenue is coming in as large chunks through its contracts. NDSS is stable enough to attempt a move into software products with SaaS as its model and RidePartner being the tip of the lance. As stated before, NDSS must learn to grapple with the SaaS model. If it so happens that the SaaS revenue model for RidePartner is widely divergent from the current contract model or even dynamic from customer to customer NDSS may not be prepared for financial disruptions.

3.2 NDSS' ability to compete in the target ecosystem

In depth information regarding statements presented as facts in this analysis can be found in other sections of this document, notably Climate (Section 1) and Competition (Section 4). Material here is organized similar to a SWOT matrix.²⁴

3.2.1 Internal Strengths with Existing Opportunities

NDSS has the internal means to deal with the possible case if and when California state body enacts emission impact fees causing businesses to pay for their share. In regards to San Francisco's local requirements for businesses (Section 1.1.1), NDSS as a California company based in Silicon Valley, its geographic location makes it an optimal player for attaining customers from local companies. Similarly the location is also excellent for hiring purposes. A large pool of qualified engineers is available if it is deemed necessary. Accordingly, if the current economic downturn continues then the hiring costs of these engineers will also fall and the more qualified engineers for RidePartner will be available at more reasonable rates to NDSS. This downturn has forced the price of gas to drop significantly however, possibly creating a shortage of immediate potential users according to the aforementioned elasticity principle. When market forces eventually drive the prices of gas higher more users may find carpooling more appealing to NDSS's benefit.

3.2.2 Internal Strength with Existing Threats

Economic downturns are nothing new to NDSS. NDSS history has pointed to the success of the company through

difficult financial times such as the dot-com crash. Even though many software companies failed at that time, NDSS was actually prospering. If NDSS leadership continues to prove viable it will be able to weather this downturn as well. When compared to many current direct competitors, NDSS finances are as good as or better. If NDSS can weather the storm through leadership and fiscal discipline, it may find itself taking market share from other competitors who cannot excel during this time.

3.2.3 Internal Weakness with Existing Opportunities

With the City of San Francisco making businesses pay for their share of environmental impacts (Section 1.1.1.) no existing relationships with these business and political organizations are present. With no marketing experience and no political clout NDSS is vulnerable to actions taken within these and similar organizations. Likewise, no relationships with existing competitors exist as well. In order to succeed in making possible partners from competitors NDSS will create and maintain relationships beyond the customer relationships that it has had up to now (see Section 4 for more details).

The economic downturn is showing signs of favoring software businesses with Internet on-demand delivery of product such as SaaS (Section 1.1.2). NDSS having never created such software before with its possible impact of new financial models is vulnerable here as well.

3.2.4 Internal Weakness with Existing Threats

NDSS is extremely weak in its marketing. Current direct competitors such as NuRide and VPSI have solid, strong marketing power (Figure 3). NDSS will not be able to compete without a better marketing position. All competitors have an installed user base with their current products. Obviously NDSS, having no existing product to compete with, faces an uphill battle in this regard as well. It must create, market, and maintain a user base in order to successfully take market share from these competitors.

3.3. Recommendations

NDSS should retain current valuable employees. When the growth slows on the contract side of NDSS, be ready to retrain and find a home for them in ISD. Find within ISD available SaaS specialists. If none are found either hire or acquire consultants. Possible CMU graduates or current students found with expertise in either web development and/or SaaS service should, at a minimum, be considered for consultation work if not outright hired. Because of current technological advances and trends, mobile experts should also be part of the RidePartner team. CMU staff and faculty might also be an excellent source of information themselves and should be considered as consultants. Management training regarding partnership business relationships, if found lacking, should be instituted before NDSS engages other companies.

RidePartner, being a sustaining innovation and competitor to other car pooling and ride sharing products will need to differentiate itself. In order to better ensure success, NDSS leadership should assess and hone its entrepreneurial skills through workshops and training as it heads a new product in a direction that the company is unused to. Past experiences and solutions in weathering economic downturns must be examined by leadership as well.

Marketing personnel should train themselves in order for NDSS to compete in the software product business world. Special attention should be given in regards to competing products and services as well as selling NDSS as a business partner. Marketing should also be creating metrics to validate promotional effectiveness and market.²⁵ It should use NDSS' reputation for quality work as its initial flagship for RidePartner. Lobbying skills may also be necessary to learn in this current political environment.

As NDSS initiates its first moves into the SaaS business model it will need to make changes to its contract-centric structure. Change can be difficult and creates insecurity so it is important to keep management and employees aware and involved.²⁶ Research into change management would also be helpful.²⁷

The addition of SaaS revenue models to the current contract model may be disruptive. NDSS must learn how to price the RidePartner offering. As the cash flow continues to move from contract to SaaS NDSS must learn to manage this change internally; collect and analyze financial metrics, evaluate total compensation, and become educated about legal contracts such as automatic renewals, service level agreements, privacy issues, etc.²⁸

4 Competitors

Appendix I - NDSS RidePartner business competitive landscape covers detailed comparison of competitors to RidePartner. In this section we focus on a relevant subset of existing or emerging competitors.

4.1 Existing competitors (strengths and weaknesses)

4.1.1 Important existing competitors

Table 3 illustrates competitors included for analysis, their competitive profile as well as the primary reason for consideration. The competitor type is specified by as per classification by E. Sink²⁹.

#	Name	URL	Type	Primary consideration
1	Goose Networks	www.goosenetworks.com	Smart&Small	Direct competitor
2	VPSI	www.vpsiinc.com	Smart&Big	Well funded vanpool company expanding into our space
3	GoLoco	www.goloco.org	Smart&Small	Experienced management
4	Zimride	www.zimride.com	Smart&Small	Riding Web 2.0 popularity wave
5	Carpool World	www.carpoolworld.com	Smart&Small	Similar background to NDSS, good customer base
6	Carpool Crew	www.carpoolcrew.com	Smart&Small	Potential threat from a non-profit
7	Green Ride (E&E)	www.greenride.com	Smart&Big	Bigger company (Ecology & Environment Inc.) expanding into our space
8	Pickup Pal	www.pickupal.com	Smart&Big	Carpool market leader
9	Nuride	www.nuride.com	Smart&Small	Direct competitor on expansion trajectory
10	Ridespring	www.ridespring.com	Smart&Small	Direct competitor

Table 3 – Existing Competitors

4.1.2 Competitor Positioning

Examining the list of 10 companies above, their positioning and strategy can be represented on a two-dimensional grid (Figure 5 below), where the X axis represents customer focus (from individual carpooler/consumer, to the enterprise), whereas the Y axis represents their size, either in terms of their backers (VPSI, Green Ride) or number of subscribers (Pickup Pal).³⁰

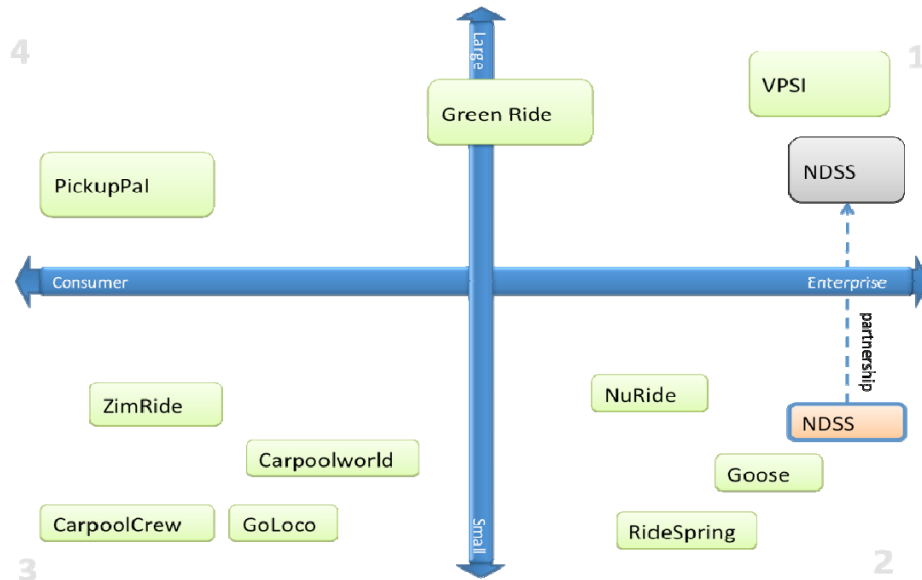


Figure 4 – Competitor Positioning

The five companies in the *first* and *second* quadrants in Figure 5 are direct competitors of NDSS’ RidePartner and the subsequent analysis focuses on them.

4.1.3 Direct Competitor Analysis

Applying the methodology described by Aaker and Harvard Business School Press yields the following matrix.³¹ The scores, while subjective, are assigned by Team Foresight based on publicly available sources including public disclosures (where available), company web sites and press coverage³². Higher scores represent better ratings.

	Green Ride	VPSI	NuRide	Ride Spring	Goose	NDSS
Innovation	8	5	9	7	9	10
Management	10	10	10	8	6	10
Development	6	6	10	10	10	8
Marketing	10	9	8	6	7	3
Finance	10	10	6	5	5	10
Customer Base	9	10	6	4	5	0
Sum	53	50	49	40	42	41

Table 4 – Competitor Strength

As shown in Table 4 above, NDSS has two large (Green Ride, VPSI) and two small (NuRide, Goose Networks) capable direct competitors that present a significant threat. Table 5 below covers strengths and weaknesses of NDSS' primary competitors.

#	Company	Strengths	Weaknesses
1	Green Ride (E&E)	Backed by E&E (870 people, \$100M revenues in 2007) Presence in 21 states Leverages relationships with government agencies [4]	Software technology is not its core competency
2	VPSI	Can leverage its position as enterprise vanpool market leader Nation-wide presence (60 cities) Established player (145 employees, \$11M revenues in 2007)	Not a technology company
3	NuRide	Fast-growing, cash flow positive, creative business model, technology savvy, 40k members	Limited access to capital, regional access only (primarily East Coast) Small (11 employees) Upcoming \$5-\$20 VC round may defocus the company
4	Goose Networks	Technology savvy, West Coast presence, Multi-modal (carpool, public transportation)	Weak management team Shoestring operation (currently in process of raising \$250k)

Table 5 – Primary Competitors' Strengths and Weaknesses

In order to leapfrog the two small players and compete effectively with E&E and VPSI, NDSS needs to move from second to the first quadrant (Figure 5). NDSS shall partner with a larger player such as ADP (see section 5 for more information) to accomplish this.

We expect that the small competitors will react aggressively when NDSS enters the market, while the big ones will be slow in their defensive response. In order to neutralize aggressive offence, RidePartner shall stay in stealth mode until the partnership with ADP (or similar) is established, and then utilize the partner's PR machine to crowd out the message of the competition.

4.2 Emerging competitors (strengths and weaknesses)

Companies marked as "E" in Appendix I are our potential emerging competitors. Again we are focusing on *Smart* companies only.³³

4.2.1 Important emerging competitors

#	Name	URL	Type	Primary Consideration
1	Zipcar	www.zipcar.com	Big&Smart	Risk of expansion
2	City Car Share	www.citycarshare.com	Big&Smart	Risk of expansion
3	Enterprise Rent	www.enterprise.com	Big	Risk of expansion, already operating

	A Car			vanpool rental service ³⁴
4	Better Place	www.betterplace.com	Small&Smart	Creative business plan modification could set them on a collision part with us
5	511.org	www.511.org	Small&Smart	Already has relationships with enterprise customers that it could leverage
6	RideSearch	www.ridesearch.com	Small&Smart	Only 7000 (09/08) members but growing
7	uLoop	www.uloop.com	Small&Smart	Risk of expansion outside of the university market
8	Divide The Ride	www.dividetheride.com	Small&Smart	While focused on soccer moms, it could expand into additional verticals

Table 6 – Emerging Competitors

The first four (Zipcar, City Car Share, Enterprise, Better Place) companies are similar in that they offer innovative or traditional car rental services and they may be interested in broadening their appeal to carpoolers. The analysis in this section will focus on them. As for the remaining companies, 511.org is a good candidate for “preemptive partnership” as our competitors may chose to leverage their existing enterprise relationships. RideSearch is on a direct collision course³⁵ and shall be watched, but their customer base is currently small. The last two companies (uLoop and Divide The Ride) are niche players at present (college campuses and soccer moms respectively), but could become threats once they signal expansion beyond their niche markets.

#	Company	Strengths	Weaknesses
1	Zipcar, City Car Share	Access to customer base interested in alternative forms of transportation Car fleet	Carpool would cannibalize their primary business (\$6-\$10/hr rental). No strong Silicon Valley presence.
2	Enterprise	Strong cash flow Presence in the vanpool market Car fleet available at convenient locations	Carpool would cannibalize their primary business. Not technology savvy.
3	Better Place	Well-funded (\$200M) Innovative (business model) relies on leasing system for electric vehicles Green image	Unproven Needs enterprise relationships (charging pods) Carpool would cannibalize their primary business.

Table 7 – Emerging Competitors’ Strengths and Weaknesses

Zipcar, City Car Share and Enterprise may be good targets for partnership (see Section 5) as RidePartner could bring incremental revenues to them without cannibalizing their primary business. Better Place is representative of an entirely new category of emerging partners/competitors. Depending on the price point for electric vehicle leases offered by Better Place and others, it has the potential to be a valuable partner (if the price point is high) or a menace (if the price point is low).

4.3 Recommendations

NDSS RidePartner shall undertake the following steps in order to improve its competitive position:

1. Build a strong partnership with a larger player in order to move from quadrant two on *Figure 1* (small enterprise player) to quadrant one (large enterprise player such as ADP). Such move will neutralize smaller competitors (Goose Networks, NuRide, RideSpring) and enable NDSS to compete with the incumbents in that quadrant (GreenRide, VPSI). Section 5 covers such partnership in more detail.
2. Prevent competitors from leveraging relationships of 511.org by preemptively partnering with 511.org.
3. Monitor closely companies in quadrant four on *Figure 1* (large consumer play) and consider partnering with a large player such as Enterprise to prevent companies from that quadrant (e.g. Pickup Pal) from crossing over.
4. In addition to striking a partnership with an established enterprise player (e.g. ADP) invest in best-of-breed technology and intellectual property protection (patents) in order to create a sustainable competitive advantage. RidePartner will be in a position to convince potential customers to purchase its service rather than the competitors’ if its technology is clearly superior.
5. The formidable salient competitor is the comfort of one’s car. As Christiansen points out “[...] At a fundamental level, the things that people want to accomplish in their lives don’t change quickly. Because of this stability, if an idea for a new business is predicated on customers wanting to do something that hadn’t

been a priority in the past, it stands little chance of success.”³⁶ This competitor can be neutralized once the cost of driving is high enough; Section 2 contains more information about the customers’ sensitivity to that cost.

5 Collaborators

NDSS, with the limited amount of resources, needs to focus on a few strategic collaborators in the beginning in order to establish a strong position in its market; it can extend its collaborator network as the RidePartner solution grows and evolves over time. For this purpose, an initial assessment, shown in Appendix II, has separated the collaborators into Must-Have and Nice-To-Have categories. The Must-Have collaborators are critical to the success of RidePartner and they are strategically essential for NDSS to create a whole product. These collaborators are future analyzed in this section. The Must-Have collaborators are assessed for three factors: 1) the value the collaborator brings to the RidePartner whole product 2) the value NDSS can offer to the collaborator and 3) the right time NDSS should engage the collaborator. The Nice-To-Have collaborators will add value to RidePartner solution but they can be engaged at a later time; they are candidates for future business development.

5.1 Partners

5.1.1 Zipcar, Inc.

Zipcar, Inc. is a popular hourly car rental business in the Bay Area. It offers flexible personal as well as business car rental services. It has cars located in many locations in San Francisco and East Bay. It has limited presence in Silicon Valley except for Stanford University campus. As NDSS’ partner, Zipcar can provide on-site car rental services to employers subscribing to RidePartner. NDSS’ enterprise customers and their employees who use RidePartner service will have direct access to Zipcar rental service for business transportation, commutes, or mid-day errands. RidePartner users will be able to match rides based on Zipcar rental car location and availability. NDSS can charge referral fees on vehicle rentals. When more car pickup locations become available, Zipcar can also be used by carpoolers to establish commute routes with multiple destinations and drivers.

This partnership will help NDSS increase user adoption and provide NDSS a source of revenue from Zipcar rental services. Zipcar will in return be able to expand its market to Silicon Valley and generate a source of revenue in the process. NDSS should engage Zipcar as a partner after its initial funding for RidePartner is approved and secured. As NDSS acquire more employers as customers and grows its user base, NDSS will be able to entice Zipcar to invest in the partnership and set up additional vehicles and car rental locations for Silicon Valley.

5.1.2 Local gathering places

The partners in this category are business chains that people frequent to start or end their day. Some key businesses to consider include Starbucks, Peet’s Coffee, 24 Hour Fitness, Bally’s, and Safeway. The strengths of this partner category are that the partners are generally located in convenient locations and their locations are plentiful and close to where RidePartner’s users reside. People frequent these business chains on a daily basis and have already established these visits as part of their daily routine. These locations are safe places to meet and the businesses usually have parking facilities that are easily accessible. A strategic partnership can be established so that the partner’s business locations will be the preferred meeting locations for carpoolers and the partner can provide parking to carpoolers for a minimal fee or for free if the parking facility is available.

This partnership will be mutually beneficial for NDSS and the partner. As a safe hub for local carpoolers to meet, the partner will gain marketing capital as a neighborhood friendly green business and increase its business when its established customer base can carpool without deviating from their daily routine and it can offer its services to carpoolers who are new to the business. The partner can charge for parking thus generates revenue on a parking lot that would not have been fully utilized during the day. NDSS can see higher user adoption of RidePartner through this partnership as it will remove carpoolers’ concerns over safety and convenience over ride sharing. NDSS should consider forming this type of partnership in phases, selecting one business chain that has the largest customer base and most number of locations to establish the first partnership for the first RidePartner release. NDSS can then gradually expand to additional business chains based on its carpooler locations and adoption rate.

5.1.3 511.org

511.org is RidePartner’s competitor as it provides a free online carpool matching service called RideShare for its registered users. RideShare is not an immediate threat to RidePartner as it has not gain mass user adoption. 511.org offers RideShare to companies in the Bay Area for free but, because its features are limited and it is not a whole product, some companies have decided to opt for paid services from vendors such as RideSpring to implement

customized solutions. Rather than competing, NDSS should consider forming a strategic partnership with 511.org to leverage its brand name and market presence in the Bay Area transportation space to reach its targeted user base and to leverage its existing services to provide the carpoolers a whole product. 511.org has established brand recognition in the bay area as the free phone and web service to provide up-to-the-minute information on traffic condition, incidents and driving time, schedule, route and fare information for the Bay Area's public transportation services and carpool and vanpools. It is a non-profit organization that is funded by government agencies including Metropolitan Transportation Commission, the California Highway Patrol, and the California Department of Transportation. Thus 511.org's primary focus is not to make money but rather facilitate transportations for the Bay Area businesses and residents. As a partner, 511.org can offer RidePartner as its designated paid enterprise solution to the business customers. This subscription-based service will provide companies a carpool management solution that is integrated with their HR system and provides custom features such as enterprise security verifications and company level reporting. NDSS will develop an ad-hoc trip planning service incorporating public transportations and RidePartner as the ad-hoc ride matching service, utilizing 511 Phone Help infrastructure and 511.org's partnerships with the major wireless providers.

This partnership will generate long-term benefits for both NDSS and 511.org. With an ad-hoc ride matching feature added to 511 Phone Help, carpoolers will receive a whole product that enable them to arrange and manage ad-hoc as well as regular transportation needs using cell phones and computers. By leveraging NDSS' consulting expertise and offering customized enterprise solution to companies in the Bay Area, 511.org will enhance its position as the facilitator of Bay Area transportation system. NDSS in return will establish a strong distribution channel for its enterprise RidePartner solution. NDSS should engage 511.org for RidePartner's first release so that 511.org will help generate sales opportunities for the enterprise solution. The timing is critical because NDSS has competitors such as RideSpring that already offer similar solutions and if one of the competitors form alliance or partnership with 511.org as described above, NDSS will arguably loss its competitive advantage and its opportunity to establish itself in the Bay Area market in the near term. NDSS can develop the add-hoc trip planning solution using 511 Phone Help after the initial release for completing its whole product offering.

5.2 Suppliers

5.2.1 Amazon Web Services

NDSS will offer RidePartner through the SaaS delivery model. SaaS model requires NDSS to employ computing infrastructures to host and run its services 24 x 7. Instead of creating in-house infrastructure, NDSS should consider the cloud commuting services in the market. Based on the vendor selection criteria, Amazon.com Inc. stands out as a trustworthy vendor.³⁷ Amazon has a relative long history in the commercial cloud computing domain and, it as a public company, offers higher level of security and reliability. Amazon's EC2 allows scalable deployment of applications by providing web services interface through which customers can request an arbitrary number of service instances on which they can load any software of their choice.³⁸ The pricing model for Amazon's EC2 is monthly billing for compute resources consumed.

NDSS, by subscribing to Amazon's EC2 service, can avoid the expensive upfront investment required for building up in-house infrastructure. Thus more money can be allocated for developing and marketing RidePartner solution. The cloud computing will also enable NDSS to scale up its services more easily. As RidePartner's user base grows, NDSS will incur more compute resource consumption and consequently provide a good revenue stream to Amazon. NDSS needs to subscribe to Amazon's EC2 service before its software development can start.

5.3 Distributors

5.3.1 ADP

Because NDSS will provide an enterprise solution on carpool matching and management to companies of 500 to 1000 employees, it is important for NDSS to establish a strong sales channel to sell RidePartner solution to the targeted companies. According to the 2004 survey conducted by The Conference Board, 87 percent of executives from 120 companies at the U.S. companies surveyed said they had outsourced one or more major HR functions.³⁹ None of the major human resource outsourcing (HRO) vendors offers carpooling solutions; some vendors such as Ceridian offer commuter expense reimbursements as a service.⁴⁰ WageWorks, even though is recommended for the initial business vision, has been categorized as Nice-To-Have distributor because carpooling receives no tax incentive from IRS and RidePartner does not match WageWorks' core competency for managing tax-advantaged employee benefits. ADP on the other hand offers comprehensive HRO services to companies of all sizes. It is one of the largest business outsourcing services, serving 600,000 clients in the U.S. and around the world. It has a service called Major Accounts that is targeted for companies with 50 to 999 employees, covering the target market

for RidePartner. By establishing ADP as the strategic distributor of RidePartner, ADP can sell RidePartner as one of its HR outsourcing services to its existing and new clients. NDSS can provide a pre-built integration to ADP’s HR outsourcing solutions. NDSS can also provide customization either by leveraging NDSS’ existing in-house consulting expertise or by engaging ADP’s professional service teams.

This will be a strategic relationship for both companies. It will help NDSS to establish a strong distribution channel for the enterprise market by leveraging ADP’s market position and client portfolio. ADP will gain new competitive advantage because, even though other vendors such as Ceridian offer commuter expense reimbursements solutions, ADP will be the first one that offers carpooling management solutions to employees as part of its comprehensive HR solution suite. NDSS should engage ADP as a collaborator once its initial funding for RidePartner is approved and secured because building out enterprise solution with integration requires time and company level collaboration. It is important that NDSS’ product management team understands the integration requirements before development starts.

5.4 Recommendations

NDSS should partner with 511.org and ADP to establish its RidePartner solution as the enterprise carpool management solution for Bay Area businesses. These two distribution channels will sell RidePartner solution as subscription services. The solution customization can be provided by either NDSS professional service team or ADP integration service. Integration of Zipcar service into RidePartner whole product solution will generate additional revenue for NDSS and increase business and user adoption of both Zipcar and RidePartner service in Silicon Valley. NDSS should also partner with local businesses to establish hubs for carpoolers to park their cars, meet and ride. Even though this partnership does not generate direct revenue for NDSS it will promote user adoption of RidePartner services. Lastly, NDSS should consider leveraging Amazon’s cloud Amazon Web Service for its webhosting and back end storage so that it can avoid high upfront infrastructure cost and minimize risk of capital investment.

6 Overall Recommendations

Based on the data provided in the analysis, Team Foresight recommends against moving forward with RidePartner. The primary reasons for this recommendation are as follows:

1. Carpooling is not a long-term growth market. As described in Section 2 and Section 4, the competitive pressure from alternative means of transportation will over time reduce the attractiveness of carpool.
2. RidePartner’s market success is predicated upon changing peoples’ behavior. As Christiansen points out in his article, businesses that bank on that usually fail.⁴¹
3. The opportunity size is too small. The projected revenue of \$3.5 requires the staff of roughly 16 people (assuming \$200k revenue per employee) to support.⁴² With a conservative sales and marketing to development ratio of 3:1, the breakdown by resource type is shown below:⁴³

Business Development	1
Sales & Marketing	11
R&D	4

With target market size of roughly 500 companies, at 20% market share, RidePartner will need to sign up roughly 100 customers per year via direct sales force or through partner companies. While the sales and marketing staff of 11 may be adequate to accomplish that goal, the R&D resources are insufficient given the requirements described in the RidePartner product vision document.

4. Unlike vanpool, there currently are no laws that offer tax advantages to carpool. While this may change going forward, NDSS shall not hedge the future of this undertaking on the uncertain regulatory outlook.

If NDSS management decides to proceed with RidePartner despite this recommendation, NDSS should undertake the following actions:

- Company
 - Perform skill assessment of its Marketing organization and hire additional people or replace existing employees with candidates that posses more balanced services and product experience.
 - Create product management position in order to guide product development as well as drive business relationships.

- Identify SaaS/Web development talent within Internet Services Division engineering, if none found, hire full-time employees or consultants.
- Invest in sales operations (pricing and licensing, cash flow management, product sales metrics and compensation).
- Prepare for additional 14-16 people to join NDSS in order to support the target revenue of \$3.5 million.
- Become an active participant in the local regulatory process in order to gain knowledge beneficial to the business.
- Competition
 - Engage a strong enterprise company such as ADP to build a partnership and effectively compete with large and leapfrog smaller players in the ride sharing business.
 - Invest in best of breed technology to create and maintain a sustainable competitive advantage.
 - Enter the consumer-focused business as soon as there are strong indications of competition from that segment crossing over into the enterprise segment. This step will be most effective by partnering with a larger player, for example Enterprise Rent-a-Car.
- Climate
 - Position the solution as a way for customers to save money due to the economic conditions.
 - Exploit tax-savings that companies can realize by implementing carpooling.
 - Take advantage of the powerful new mobile platforms (iPhone, RIM, Android) to lure early adopters.
- Customers
 - Expand the addressable market size by partnerships with car rental companies such as Zipcar.
 - Enlarge the market opportunity by changing the employee count threshold for target enterprise customers from 1000 (original vision document) down to 500.
 - Aim for 20% of the addressable \$17.5 target market to achieve \$3.5 million revenue.
 - Focus on the near term as long-term growth may slow down dramatically.
- Collaborators
 - Convert potential car rental competitors (Zipcar) into partners as a way of expanding enterprise offering and defending against potential onslaught by consumer-focused competitors (Pickup Pal).
 - Sign up local businesses such as Starbucks, 24hr fitness, and so forth as gathering places to help overcome concerns over potential safety and ride sharing logistics.
 - Engage 511.org and county public transportation organizations (e.g. Santa Clara Valley Transportation Authority) as both a marketing effort and a way to offer whole product (local transportation links).

Appendix I - NDSS RidePartner business competitive landscape

	Goose Net.	VPSI	GoLoco	Zimride	Carpool World	Carpool Crew	Green Ride (E&B)	Pickup Pal	Nuride	Ridespring	uloop	Zincar	City Car Share	Enterprise	Better Place	511.org	Divide The Ride	Ride Search	GishiGo	RideShark	Ridester	eRideShare	Alternet Rides	iCarpool	Rideshare	Craigslis	PiggyBack
Direct Competitor	Y	Y	N	N	Y	N	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
Market Overlap	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	N
Geographic Overlap	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	Y
Niche	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N
Size (L/S)	S	L	S	S	S	S	L	L	S	S	S	L	L	L	S	L	S	S	S	S	S	S	S	S	S	L	S
Price	?	?	10%	Per user	Usage - \$10/month	Free?	Subscription	Free	Spanship	Per site	\$50/campus/month	\$8/hr	\$6.50/hr	\$90-\$150/month	?	Free	free	Free	?	?	\$2+9.5%	?	?	Per user fees	\$150/month	?	?
Disruptive	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Disposition: Competitor, Emerging, Ignore	C	C	C	C	C	C	C	C	C	C	E	E	E	E	E	E	E	E	I	I	I	I	I	I	I	I	I

The following competitors were examined but excluded, as they do not present a threat at this time.

#	Name	URL	Type	Reason
1	GishiGo	www.gishigo.com	Smart&Small	Going after Greyhound customers

2	RideShark	www.rideshark.com	Small	Not focused, lacks execution capability
3	Ridester	www.ridester.com	Smart&Small	Two men show, regional (TX)
4	eRideShare	www.erideshare.com	Small	Focused on individuals, excludes corporate carpool explicitly
5	Alternet Rides	www.alternetrides.com	Small	Launched 01/2002 yet without major success thus far, horrible UI
6	iCarpool	www.icarpool.com	Small	Weak leadership, not focused
7	Rideshare	www.rideshare.com	Big	Vanpool-focused, operating from 1984, unlikely to expand
8	Craigslist	www.sfbay.craigslist.org/rid	Big&Smart	Lack of security make successful expansion unlikely
9	PiggyBack Mobile	www.piggybackmobile.com	Small	Hobbyist project

Appendix II – Collaborator Index

Must-Have Collaborators

Partner	Strength	Weakness	Benefit for NDSS	Benefit for Partner
Hourly car rental service Zipcar	<ul style="list-style-type: none"> - Offer hourly car rental at affordable rate and multiple locations in the San Francisco and East Bay cities. - Hass business and personal services. 	<ul style="list-style-type: none"> - Has not locations in South Bay other than Stanford campus. 	<ul style="list-style-type: none"> - Provide carpoolers, who have no access to a car, a way to do mid-day errands and ad-hoc rides. 	<ul style="list-style-type: none"> - Revenue form corporate clients. --- Guaranteed business on weekdays - Expand the sales territory
Business chains where people gather and offer plenty of parking. 24 hr gym Gold gym Starbucks coffee	<ul style="list-style-type: none"> - Has parking available - Members visit in before or after work as part of daily routine - Safe place to meet - Business chains have many locations and they are located in convenient locations. 	<ul style="list-style-type: none"> - One business chain may not cover enough locations. NDSS will need to partner with multiple business chains. 	<ul style="list-style-type: none"> - Incent people to meet and share ride by providing safe and convenient parking. - Leverage word of mouth marketing for RidePartner. 	<ul style="list-style-type: none"> - Attract more businesses by allowing members/customers to park their cars for carpooling. - Additional income for otherwise empty parking lots.
511.org	<ul style="list-style-type: none"> - Established brand name in the bay area. - Government funded, won't go out of business. 	<ul style="list-style-type: none"> - Non-profit so it is not very business savvy. - Offer basic matching service. 	<ul style="list-style-type: none"> - Grow user base - RidePartner can integrate with 511 to offer live traffic update via web and phone. 	<ul style="list-style-type: none"> - Expand carpooling program for the area. RidePartner can offer better solution for ride matching to RideShare's user base. - Another partner who can offer value-add services to companies who want more than the free solution can offer.

Distributor	Strength	Weakness	Benefit for NDSS	Benefit for Partner
ADP	<ul style="list-style-type: none"> - One of the world largest outsourcing providers on HR solutions. - Offer HR services to small, mid and large companies. 	<ul style="list-style-type: none"> - Has no commuter benefit solution. 	<ul style="list-style-type: none"> - Sell RidePartner as part of the HR solution – a sales channel into the HR domain. 	<ul style="list-style-type: none"> - A new addition to its solution package so it can offer complete HR solution to its customers that can promote employers' green image.

Supplier	Strength	Weakness	Benefit for NDSS	Benefit for Partner
Amazon.com, Inc.	<ul style="list-style-type: none"> - Cost effective - Scalability - Pay for what you use - Public company 	<ul style="list-style-type: none"> - Had one outage. 	<ul style="list-style-type: none"> - Lower startup cost. - Can easily scale its service without incurring too much cost. 	<ul style="list-style-type: none"> - Revenue on its infrastructure resources. - Increased revenue when clients grow its compute consumption.

Nice-To-Have Collaborators

Partner	Strength	Weakness	Benefit for NDSS	Benefit for Partner
County public transportation organizations. Peninsula Traffic Congestion Relief Alliance(commute.org) Santa Clara Valley Transportation Authority (vta.org) SF MTA (sfmta.com/cms/home/sfmta.php)	- Public funded and well established programs to help employers, employees, residents to use mass transit and alternative transportations - Has incentives for individual to carpool. - Has shuttle services for major business locations. Some offer free shuttles	- County only service. - Services offered are not whole products so the utilization can be low.	Grow user base by becoming a preferred partner for county commute program.	Relive traffic congestion for the county.
CalTran (dot.ca.gov)	- Government transportation agency that offers multiple types of public transportation options. - Annual government budget.	- Can be difficult to engage due to the bureaucratic nature of the government agency.	-Brand Recognition to attract new users. -Offer alternative transportation for users (bus, train, bike) through the partnership.	Reduced cars on the road will help reduce costs on road repair and Reduce traffic congestion. Reduce damage to the high way system thus reduce road repair costs.
City public parking	Offer convenient and ample parking.	May not have the capacity to offer to carpoolers as the demand is not budgeted.	Incent people to meet and share ride by providing safe and convenient parking.	City will reduce traffic congestion.
Segway	Short distance green transportation	- Expensive to purchase. - Only one person can use it at one time.	Incent employees to share ride by providing a fast and fashionable way to ran errand without a car: Segway used by carpooling employees to run mid-day errands.	Reduce demand on parking. Help companies to be green.
REI	- Large member base who are environmental conscious - Offer bike repair services.	- There are only a few stores in the Bay Area.	Promote carpooling with Ride Partner.	Offer a new way to its members to be good citizens and save the environment.
Shuttle & Taxi service	Transportation that can be arranged for a short notice.	There are lots of such services so need to build partnership with many vendors.	Complement the carpooling solution with paid ad-hoc alternative option.	Additional revenue from carpoolers or their companies who need ad-hoc transportation service.
Insurance company	Every driver needs insurance.		Incent people to join because carpoolers drive less and have lower insurance premium.	Attract new businesses by offering special discount for RidePartner members.
Public radio and TV stations KQED, NPR	Has large following of concerned citizens.		Places to advertise carpooling solution to professionals.	Show support for the green initiative and public welfare.
Employers who RidePartner provides carpool solution to.	Has employees 1000+.	May have limited marketing budget.	Generate revenue from paid advertisement from the employers who sponsor the RidePartner solution to	Advertise on RidePartner's website customized for other companies. Provide carpooling service to

			employees.	employees.
Sierra Club	Has a mission to protect the planet		Seeking funding to finance RidePartner.	Reduce environmental impact by support carpooling.
The Climate Project	Mission is to stop global warming and have drive less as one of the solutions listed on the homepage.		Promote RidePartner as part of the Climate Project solution.	Add another solution to its Project to stop global warming.

Supplier	Strength	Weakness	Benefit for NDSS	Benefit for Partner
IVR service http://www.voxeo.com/library/ivr.jsp http://www.ivrtechgroup.com/?gclid=CIKEtoap-pYCFRxBagodHR10Yg http://www.plumvoice.com/products/ivr-hosting	Mature technology that helps automate user calls.	The menu selection can be complicated and time-consuming to use if not developed properly.	- Hosted IVR service to automatically answer user calls for matching riders and route to call center. - Enable ad-hoc carpoolers to match rides using landline or mobile phone.	- Revenue. - An opportunity to develop a new business application for the IVR system.
Call Center outsourced Customer service Call center to assist the carpooling and the HR	Cost-effective professional call center service with necessary infrastructure.		Provide professional customer service without incurring the overhead of hiring full-time employees.	Revenue.

Online Ads ⁴⁴ RegNow: Ads for selling software products LinkShare Amazon.com associated program Google AdSense	Can provide RidePartner advertisers on the website.	Revenue is dependent on users clicking on the ads.	Revenue: capitalize on the user base when the users click on the sponsored ads on the RidePartner’s website.	Generate leads for the advertising companies.
Marketing functions outsourced outsourcemarketing.com	Expertise in marketing. Solve all marketing needs without hiring multiple resources.	Need a resource from NDSS to coordinate the service.	Reduce the overhead of full-time hires and outsource the marketing function e.g. marketing collateral creation for the HR departments.	Revenue.
Cell Phone service companies AT&T, Verizon, T-mobile, Sprint	Broad user base in the US.		Brand name recognition when RidePartner’s cell phone program can be downloaded via these service companies. Enable ad-hoc carpoolers to match rides using mobile phone.	Increased cell usage and adoption of phones with browsers. Additional revenue.
Twitter	Enable people to stay connected using web.		Enable carpoolers to arrange rides.	Increased user base.

Distributor	Strength	Weakness	Benefit for NDSS	Benefit for Partner
WageWorks	Popular tax-advantaged benefit program for employers.	Only offers tax-advantaged benefit program (carpooling receives no tax incentive at the moment).	Package RidePartner as part of the WageWorks solution.	A new addition to its solution package so it can offer complete HR solution to its customers that can promote employers’ green image.

Appendix II - References

- ¹ Christiansen, Clayton M, et.al. "Foundations for Growth, How to Build Disruptive New Businesses." MIT Sloan Management Review 43, no. 3 (Spring 2002)
- ² Sustainable Silicon Valley-Focus on CO2 and Energy, <http://www.sustainablesiliconvalley.org/energy.htm>, accessed 11/28/08.
- ³ The New York Times website, http://www.nytimes.com/2008/06/26/us/26california.html?_r=1&scp=4&sq=California%20Will&st=cse&oref=slogin, accessed 11-08-08.
- ⁴ Silicon Valley Leadership, <http://svlg.net/issues/transportation/index.php>, accessed 11/16/08.
- ⁵ Bruce Hadley, Software IPO Review: 2002, <http://www.sterlinghoffman.com/newsletter/articles/article29.html>, accessed 11/21/08.
- ⁶ E*Trade Financial, S&P Industry Report for Technology Stock – Software & Programming, https://www.etrade.wallst.com/v1/markets/sectors_industry/sectors_industry.asp?id=1036, accessed 11/17/08.
- ⁷ The SaaS Ocean is Big and Getting Bigger, <http://saascamp.com/forums/thread/2586.aspx>, accessed 11/28/08.
- ⁸ Pete Carey of Mercury News dated 11/21/08, http://www.mercurynews.com/ci_11041994, accessed 11/28/08.
- ⁹ Management R&D Economic analysis of business practice, dated 1/24/08, <http://managementrandd.blogspot.com/2008/01/price-elasticity-of-demand-for.html>, accessed 11/21/08.
- ¹⁰ BlackBerry Storm vs. Apple iPhone: 8 reasons pro and con by CNN Money.com dated 11/15/08, <http://apple20.blogs.fortune.cnn.com/2008/11/15/blackberry-storm-vs-apple-iphone-8-reasons-pro-and-con/>, accessed 11/22/08.
- ¹¹ Else Wenzel, "Better Place eyes \$1 billion electric car networks for Bay Area" dated 11/20/08, http://news.cnet.com/8301-11128_3-10104206-54.html, accessed 11/23/08.
- ¹² Value Line Report, Computer Software & Services, dated November 21, 2008 page 2569.
- ¹³ <http://www.labormarketinfo.edd.ca.gov>, 3rd quarter 2007 report San Jose, Sunnyvale, Santa Clara Metropolitan Statistical Area (MSA)
- ¹⁴ CA Metropolitan Transportation Commission, http://www.mtc.ca.gov/planning/2035_plan/tech_data_summary_report.pdf
- ¹⁵ Averages for Santa Clara were used as they are considered representative for the MSA used for other figures
- ¹⁶ CA Metropolitan Transportation Commission, http://www.mtc.ca.gov/planning/2035_plan/tech_data_summary_report.pdf
- ¹⁷ Averages for Santa Clara were used as they are considered representative for the MSA used for other figures
- ¹⁸ Carnegie Mellon Silicon Valley. "Task 1 Product Vision." Software Product Definition. Available from https://curriculum.sv.cmu.edu/software_product_definition/task1/email1.shtml. Internet; accessed 28 November 2008.
- ¹⁹ Wasserman, Tony. (2008, November). SPS Week 4 Slides. Presented at plenary session. <http://info.sv.cmu.edu/twiki/pub/Fall2008/SoftwareProductStrategy/WebHome/SPSWeek4.pdf>
- ²⁰ CIPD. "SWOT analysis." Chartered Institute of Personnel Development. Available from <http://www.cipd.co.uk/subjects/corpstrtgty/general/swot-analysis.htm>. Internet; accessed 28 November 2008.
- ²¹ Wikipedia. "Software as a service." Wikipedia: Making Life Easier. Available from http://en.wikipedia.org/wiki/Software_as_a_service. Internet; accessed 28 November 2008.
- ²² Pal, Nimal, and Pantaleo. The Agile Enterprise: Reinventing your Organization for Success in an On-Demand World . 1 ed. New York: Springer, 2005.
- ²³ Dodge, Don. "SaaS - new software model, new challenges." Don Dodge on The Next Big Thing: Thoughts on business and technology. Available from http://dondodge.typepad.com/the_next_big_thing/2006/04/saas_software_s.html. Internet; accessed 28 November 2008.
- ²⁴ QuickMBA. "SWOT Analysis." Strategic Management. Available from <http://www.quickmba.com/strategy/swot/>. Internet; accessed 28 November 2008.
- ²⁵ "Marketing Metrics: Where to get them? Which ones work? ." Advertising and Marketing Review. Available from http://www.ad-mkt-review.com/public_html/docs/fs059.html. Internet; accessed 25 November 2008.
- ²⁶ Kohlireser, George. "How to Take the Pain Out of Change." IMD. Real World. Real Learning. Available from <http://www.imd.ch/research/challenges/TC020-07.cfm?bhcp=1>. Internet; accessed 28 November 2008.
- ²⁷ Caudron, Shari. "Managing the Pain and Gain of Radical Change." BusinessFinance. Available from <http://businessfinancemag.com/article/managing-pain-and-gain-radical-change-1101?page=0%2C0>. Internet; accessed 28 November 2008.

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- ²⁸ Schuller, Sinclair. "SaaS as Recurring Revenue Justification." [SaaS Blogs](http://www.saasblogs.com/2007/11/20/saas-as-recurring-revenue-justification/). Available from <http://www.saasblogs.com/2007/11/20/saas-as-recurring-revenue-justification/>. Internet; accessed 28 November 2008.
- ²⁹ Sink, Eric. "Choose Your Competition." Eric.Weblog(). 3 Apr. 2003.
- ³⁰ Ecology And Environment Inc., Annual Report 2007, p.7
- ³¹ Harvard Business Essentials: Marketer's Toolkit: 10 Strategies You Need to Succeed . Boston: HBS Press. Nov. 2005. "Competitor Analysis: Understand Your Opponents", p.7
- ³² "Web-Based Carpooling Startups" http://www.businessweek.com/technology/content/sep2008/tc20080911_412937.htm (accessed 11/30/08).
- ³³ Sink, Eric. "Choose Your Competition." Eric.Weblog(). 3 Apr. 2003.
- ³⁴ "Longer Commutes, Increased Traffic, and Higher Gas Prices Drive Growth of Ridesharing; Enterprise Rent-A-Car Makes Ridesharing Attractive and Eases Commuting Woes for Thousands of Northern Californians" http://findarticles.com/p/articles/mi_m0EIN/is_2005_June_27/ai_n14699088 (accessed 11/28/08).
- ³⁵ "RideSearch Names Top 10 Cities for People Looking to Carpool" <http://www.pr.com/press-release/82734> (accessed 11/29/08).
- ³⁶ Christiansen, Clayton M, et.al. "Foundations for Growth, How to Build Disruptive New Businesses." MIT Sloan Management Review 43, no. 3 (Spring 2002)
- ³⁷ Barley, David. "How to Select a Trustworthy Cloud Computing Vendor." 11/19/2008.<http://www.eweek.com/c/a/Cloud-Computing/How-to-Select-a-Trustworthy-Cloud-Computing-Vendor/> (accessed 11/25/08).
- ³⁸ "Cloud-Computing Services Comparison Guide." <http://www.webhostingunleashed.com/whitepaper/pdf/cloud-computing-comparison.pdf> (accessed 11/25/08).
- ³⁹ "Eighty Percent of Companies That Outsource HR Functions Would Do So Again." 4/15/2004.http://www.conference-board.org/utilities/pressDetail.cfm?press_ID=2373 (accessed 11/25/08).
- ⁴⁰ O'Neill, Leslie T.. "Size Up the Human Resources Outsourcing Market with a Comparison of Offerings." <http://www.hrworld.com/whitepaper/hr-outsourcing-comparison/> (accessed 11/25/08).
- ⁴¹ Christiansen, Clayton M, et.al. "Foundations for Growth, How to Build Disruptive New Businesses." MIT Sloan Management Review 43, no. 3 (Spring 2002)
- ⁴² Cusumano, Michael, "The Business of Software", Free Press, 2004
- ⁴³ Augustin, Larry. "The future of open source and enterprise software." July, 2008.(accessed 11/25/08).
- ⁴⁴ "Affiliate Programs: Free Sponsors and Advertisers for Your Website." <http://www.thefreecountry.com/webmaster/affiliate.shtml> (accessed 11/25/08).