Appendix A The market simulations

A.1 New Enterprise Development

Simulated market experiments were run during the New Enterprise Development courses using a custom developed online trading platform. At the beginning of trading, they were given an access code to be able to register and use the platform. Before the start of the market, each student was endowed with 2,000 shares per each start-up venture in their initial portfolio and $1,000 cash per project in their opening cash balance.

The trading mechanism used was continuous double auction,[1] which meant that traders could log on and trade using any browser at any point in time throughout the duration of the market. The trading worked in two stages. In the first stage, the traders would post the offers to buy and sell certain number of shares of a project at a certain price, and in the second stage, other traders who found these offers attractive would accept these offers. Once a trade went through, the backend of the software automatically did the accounting, debiting and crediting the cash and stock balances of the parties involved. The trading was anonymous. Trading with oneself and short selling were not allowed.

Throughout the course, teams generated information about their value proposition, business model, technology, market potential, financial feasibility and projections, and challenges going forward. There were two types of information: 'private' and 'public'. 'Private' information was created through work of the teams and was not available to others. This information became 'public' during the team presentations.

There were three presentations within the 13-week course and a fourth presentation to experts occurring soon after the teaching term.

1. The initial presentation took place typically 2 weeks after the start. It lasted 5 minutes with 5 minutes for Q&A. Teams select one team member to present. The presentation was about value proposition, business model and potential market segments.

2. The next presentation occurred in the middle of the course, typically after 6 weeks. It lasted 10 minutes with 5 minutes Q&A. The teams presented the results of their market research (both primary and secondary, i.e. potential customers and competition).[2] During the presentation, all members of the team were required to speak.

[1] Double auction is the trading mechanism used in most of the natural securities exchanges, such as stock markets.

[2] Primary market research is conducted through surveys and interviews and secondary research using the available databases at the library and online search engines.

3. Financial presentation took place toward the end of the course, about week 11. It lasted 5 minutes with 5 minutes Q&A. Teams selected one team member to present. The presentation is about required start-up funding, budget, and financial projections for the venture[3]

4. The final presentation took place in week 14, the first week after the end of the course. It lasted 15 minutes with 10 minutes Q&A. All members of the team were required to speak. While the first three presentations were held before the rest of the class and the instructor, the final presentation was delivered to the panel of experts. The experts come from Vancouver VC and entrepreneur community.There were three members of the panel for all experiments except for one which had two experts. Trading ceased prior to these final presentation and therefore market prices did not reflect information from the experts.

A.2 Strategic Management

Similar market simulations were conducted in undergraduate strategic management courses as an investment game. Students acted as senior managers in charge of investing in early-stage entrepreneurial ventures. We used the ventures from an NED class. The purpose was to establish whether "unbiased investors", i.e. traders who traded based only on the information supplied by the market host and nothing else, will evaluate differently than in the NED market simulations. As in the NED market, each student was endowed with 2000 shares per each start-up project in their initial portfolio and $1000 cash per project in their opening cash balance before the market has opened. Regarding the information content, students received written descriptions of each of the venture team presentations from the NED section associated with that SM section. This information included the value proposition, business model and technology, market research, financial information and major challenges going forward. Students in the control market did not have any information about student identity or teams proposing the entrepreneurial venture.

[3]Teams have to provide projections such as income statement, sales projection, break even point, and sources and uses of funds statement for the 3 year period.

A.3 Business game instructions for traders

Experiment Instructions

You are going to participate as a trader in a prediction market experiment.

1. Background

The securities you will be trading are based on entrepreneurial start-up projects in an entrepreneurship class at Sauder in Spring 2011. In that class, nine teams participated in a series of presentations that ended with an evaluation by a panel of experts as to each project's likelihood of success. That evaluation resulted in a score for each project with the scores adding to 1. The market will open on March 11, and close on April 9, 2011.

2. The setup

The experiment today will replicate that experience. You will be an outside observer to the process. Before the start of the trading, we will provide you with a brief initial description of the securities and their trading symbols. Over the course of the experiment, we will give you summary information about the most relevant aspects of each project.

At the start of the experiment you will be given 2,000 shares of a security for each project (18,000 shares in total). You will be also be given an interest-free loan of 8,000 experimental currency units (ECUs), so you can pay for the shares that you purchase during trading. (All traders have the same starting securities portfolio and opening cash balance).

3. Your payoff

At the end of the experiment, you will be paid in real dollars. Your payoff will be calculated as follows. First, we will calculate the value of your closing securities portfolio by multiplying the number of shares you hold for a security by the experts' score for that security. Second, we will calculate your net closing cash balance as the difference between your opening and closing cash balance. Then, we will add up the value of your securities portfolio and your closing net cash balance. Finally, this figure will be multiplied by an exchange rate (1/100) $ per ECU to arrive at your payoff in real dollars.

YOUR PAYOFF =
(1/100)*[(experts' score) x (no of shares held at end) + (final cash) – (initial loan)]

4. The trading mechanism
You will trade by:
(1) posting your offers of securities for sale on the market
(2) posting your bids for securities to purchase on the market
(3) accepting the offers (buying the securities), provided you have enough cash to pay for them.

(4) accepting the bids (selling the securities), provided you have enough shares of that particular security to meet the bid.
You may also cancel your posted bids and offers at any time during the experiment if they had not been accepted before that.
The software will not let you make more bids than you have money balances for.
The software will not let you offer to sell more shares of a security than you have.
The software will not allow you to accept one of your own bids or offers.

Please note that the prices of securities reflect probabilities of success, thus they have an upper bound of 1 and the lower bound of 0.01.

5. An example

Suppose you expect the score of a security to be .25. You might then try to acquire the shares of that particular project at prices below .25. You can do this in two ways: you can post the bid for that security, or you can accept someone else's offer (if it is posted). Presuming that either transaction goes through, it will increase the relative weight of this security in your individual portfolio (remember that you start with equal weights for all securities). Likewise, you might try to sell that security for more than .25. As in the buying case, you can do this in two ways: you can post an offer or you can accept another's bid. If someone accepts your offer, or you accept someone's bid, your sale will reduce the relative weight of this security in your portfolio.

Good luck!

A.4 Summary Information, SM

BUSINESS MODEL/TECHNOLOGY

BARTER BACK (Market symbol: BRBK) The value proposition is to match UBC students who at a particular moment in time can run small errands for other students who do not have it (like during the exams). Each errand will have a certain value in in-app currency (for different items, like coffee or burger, there will be different prices). The payoff will be in actual food items. Primary market segments; students at UBC. Technology: Software application

COMMUTE (Market symbol: CMTE) The value proposition is to aggregate information from the websites of car sharing companies (like Evo, Cars to Go, Zipcar) about the location, availability and charges. The customers will be able to compare different offers from individual car sharing companies and make the best decision. Primary market segment: Anyone who needs a car, and does not want to use taxicab services. Technology: Software application

FABLE (Market symbol: FBLE) The value proposition is to aggregate fashion clothing items in one place/platform, where users can compare the clothes they want with what is available. The customer will then be able to purchase the item from the vendors. The project is based on a similar application in Spain. Primary market segments: Gen Z. Technology: application software.

ORIZZONTE (Market symbol: OZTE) The value proposition is to have a restaurant on top of a building downtown with 360 degree views where guests will be able to have their own booth/pod covered by Plexiglas separated from other pods, and have their choice of music, ambiance and food. There will be no servers, the food will arrive by a booth conveyer in the wall. (If they need a human waiter, it is available on demand). The team wants to offer a unique integrated experience (including great food, they plan to hire a Michelin starred chef)) customized for the individual guests. Primary market segment: Anyone who wants privacy, good food and views. Technology: It is available, needs to be customized to this particular project.

RIGHT OVER (Market symbol: RIVR) The value proposition is to offer delivery of meals from restaurants to students who do not know/do not want to cook/go to restaurant/have a takeout. The meals will be

delivered on an agreed-upon weekly/monthly schedule. The primary market segments are UBC students. Technology: application software.

ROOMMATE FINDER (Market symbol: RMFR) The value proposition is to connect students with similar interests and life styles as roommates (in apartments and houses). The online platform will have detailed filters for matching and the rating system for matched roommates. Primary market segment(s): UBC students. Technology: application software.

SMART PET (Market symbol: SMPT) The value proposition is to create all-in-one "smart" collar for pets (primarily dogs and cats). The collar will integrate GPS and relevant health information and will alert the owners when warranted. Primary market segments: old and new pet owners. Technology: not available yet, particularly in terms of health information and measurement.

SPARK (Market symbol: SPRK) The value proposition is to provide a safety information for travellers/tourists in a foreign environment (city, town, neighborhood) about crime and problems in that part of the city/country. Primary market segments: tourists and visitors to a foreign country, particularly in the areas of the World where crime is rampant. Technology: software application, requiring the input from local police and law enforcement agencies.

MARKET

BARTER BACK (Market symbol: BRBK) The team did a thorough market research. In primary research, they conducted 87 online surveys and 12 interviews. As the project's target market segment was UBC students, all of the interviewees were students. Most of them liked the idea of "debits" and "credits" (i.e. having somebody get them coffee or a sandwich at one time, and they themselves running the same (similar) errand for somebody else), particularly during exam periods. In secondary research, they did not find any businesses on campus that were similar to their idea (i.e. direct competition).

COMMUTE (Market symbol: CMTE) The team did a thorough market research. In primary research, they conducted 61 online surveys and 10 interviews. The project's target market segment is people who use car sharing services, such as Zipcar or Cars2Go, so the interviewees

were people who use these services (a mixture of UBC students and their friends and family). The results of the research were overall positive, with some of the interviewees questioning the project value proposition (the application enables the users to pick and choose the company based on the location of the available cars). In their secondary research, they did not find any direct competitor, but it is important to mention that each individual car share company does have the location function on their websites.

FABLE (Market symbol: FBLE) The team did a decent market research. In primary research, they conducted 34 online surveys and 10 interviews. As the project's target market segment was US, the sample they interviewed (UBC students) was not completely representative, so the results have to be seen through that prism. The basic premise of their business model is that something that worked well in Spain will work in US, and the research did not really confirm that.

HORIZZONTE (Market symbol: HORZ) The team did very detailed market research (91 surveys and 8 in-depth interviews), and made changes to their business model accordingly. Most of the results support the idea of a roof-top restaurant in Vancouver downtown with transparent pods that allow the views but accord privacy, (of course supported by Michelin-starred chef), as something unique in Vancouver.

RIGHT OVER (Market symbol: RIVR) The team made changes to their business model due to the results of their market research. They pivoted away from the idea of food delivery to UBC students on campus. Now they plan to offer meals from restaurants at discounted prices at the end of the day when restaurants are left with cooked but unsold meals. (They interviewed over 100 students at UBC and conducted 8 face-to-face interviews). The results clearly show that the students are interested in the idea. However, the team neither did any interviews with the restaurant owners/managers to try to estimate the supply of the meals, nor tried to estimate the pricing and delivery details.

ROOMMATE FINDER (Market symbol: RMFR) The team did very detailed market research (83 surveys and 10 in-depth interviews), and most of the results support the idea of a matching site for roommates,

as many students experienced issues with their current roommates. On the downside, what transpired from the primary research was the fact that the market is not that large – the whole market is a couple of thousand students.

SMART PET (Market symbol: SMPT) The team did detailed primary market research (46 surveys and 10 in-depth interviews). Most of the interviewees were supportive of the idea of "health wearable" for their pets. (Secondary research showed that Canadians spend on average $1,200 per year on their pets). The research also showed, somewhat surprisingly, that the highest willingness to pay was among the owners of working dogs (like on farms.) While there are already wearables for animals, most of them are providing GPS services, and none provide any health information.

SPARK (Market symbol: SPRK) The team did very detailed primary market research (over 100 surveys and 10 in-depth interviews), and made changes to their business model accordingly. Now they are going to provide the safety of travel local information primarily for "back packer" travelers who travel to the parts of the country that are known to have high incidence of crime. The information will be gathered from local police and other security agencies.

FINANCE

BARTER BACK (Market symbol: BRBK) Financial projections show that the project will need $100,000 in setup costs and another $200,000 in operating costs. The major costs are for the software development, marketing/advertising and salaries. They plan to raise this money from the funding members and from the bank loan. The team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 5 years. Their projections are supported by plausible assumptions.

COMMUTE (Market symbol: CMTE) Financial projections show that the project will need $50,000 in setup costs and another $100,000 in operating costs. The major costs are for the software development, marketing/advertising and salaries. They plan to raise this money from the founding members and from the angel investors. The team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 5 years.

Their projections are supported by otherwise plausible assumptions, except their core value proposition, which is that people will find the application very useful (in picking the best car share company for them).

FABLE (Market symbol: FBLE) Financial projections show that the project will need $100,000 in setup costs and another 150,000 in operating costs. The major costs are for the software development, marketing/advertising and salaries. They plan to raise this money from the founding members and from the two bank loans. The team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 3 years. Their projections are supported by plausible assumptions. Again, they critically depend on the number of active users acquired and retained over time.

HORIZZONTE (Market symbol: HORZ) Financial projections show that the project will need $3,000,,000 in setup costs (for the real estate and for the building of the restaurant), and another $2,000,000 in operating costs. The major costs are for the salaries of kitchen stuff and management, as well as for the ingredients. They plan to raise this money from the venture capital and from interested wealthy private individuals. The team adopted the pricing scheme accordingly, so the average price of a fixed menu for dinner is $150.00 per person, plus the costs of drinks. They plan to break even after 3 years of operation, which seems reasonable given the expenses.

RIGHT OVER (Market symbol: RIVR) Financial projections show that the project will need $100,000 in setup costs and another $200,000 in operating costs. The major costs are for the software development, marketing/advertising and salaries. They plan to raise this money from the funding members and from the angel investors. The team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 5 years. However, their projections were not supported by plausible assumptions.

ROOMMATE FINDER (Market symbol: RMFR) Financial projections show that the project will need $150,000 in setup costs and another $250,000 in operating costs. The major costs are for the software development, marketing/advertising and salaries. They plan to raise this money from the funding members and from the bank loan. The

team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 5 years. Their projections are supported by plausible assumptions.

SMART PET (Market symbol: SMPT) Financial projections show that the project will need $1,000,000 in setup costs and another $1,000,000 in operating costs. The major costs are for the hardware product (wearable) and software development, medical research/science and data acquisition, and for marketing/advertising and salaries. They plan to raise this money from the funding members and from the bank loan. The team's revenue model looks realistic in terms of revenue streams, as they will be entering a large and growing market. They plan to break even after one year. However, their projections are not supported by plausible assumptions, particularly having in mind the presence of strong competition.

SPARK (Market symbol: SPRK) Financial projections show that the project will need $200,000 in setup costs and another $300,000 in operating costs. The major costs are for the software development, marketing/advertising and data collection. salaries. The team adopted advertising revenue model, so the major variable would be the number of users. The team plans to break even after 2 years. Their projections are supported by plausible assumptions.

References