



Venture Capital Game: Overview

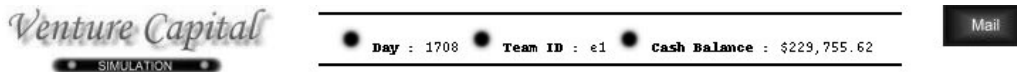
There are two types of teams in the Venture Capital Game: Entrepreneurs and Venture Capitalists. Entrepreneurs manage their own companies, competing with other entrepreneurs and/or computer-generated teams in a simulated market. One of the ways that entrepreneurs can raise capital is by selling equity to Venture Capitalists. In the game, the total size of the market evolves over time. In addition to this overview, a separate document will be distributed providing parameters and details of your specific game.

In the game, time is divided into days, weeks, months, quarters, and years. There are 91 days in a quarter and 364 days in a year.

The game is accessed from standard web browsers. Java, Javascript, and cookies must all be enabled in the browser.

Entrepreneurs: Generating Cash

Entrepreneurs access their companies from a screen like the one shown below. Entrepreneurs can generate money in three ways: collecting interest on cash, issuing stock, and selling product. Interest on cash is added daily, at a compounded annual rate of 5%.



Entrepreneur Data

Research and Marketing Data		Operations Finance Data			
Yesterday's Market Size:	\$2,087,402.47 per month	Cash on Hand:	\$229,755.62		
Yesterday's Market Share:	0.71%	Total Debt:	\$0.00		
Total R&D Expenditures:	\$0.00	Total PP&E Expenditures:	\$50,000.00		
Total Marketing Rankings		Capacity:	\$15,000.00 per month		
Total R&D Rankings		Full Capacity Burn Rate:	\$2,250.00 per month		
		<u>Operations Finance Reports</u>			
Monthly Expenditure Rates		Equity Data			
Monthly Marketing Rate:	\$0.00	Owner	Shares	Fraction	Rep Score
Monthly R&D Rate:	\$0.00	Founders:	900,000	89.99%	0
Monthly Debt Service:	\$0.00	Friends & Family:	100,000	9.99%	0
Monthly Burn Rate = 100% of Full Burn Rate:	\$2,250.00	Employees:	100	0%	0
Total Expenditure Rate	\$2,250.00	Total:	1,000,100	100%	
		offer shares to venture capitalists .			
		survey venture capitalist reputations .			



Equity data is shown in the southeast corner of the entrepreneur's control panel. When the game begins, some shares of stock are already issued to the company founders. No additional shares can be issued to the founders. Shares can be issued to friends & family or to employees by clicking on the corresponding link in the Equity corner of the control panel. The price per share of friends & family stock is pre-determined. You can click on the link to see the price. Your team does not receive cash for stock issued to employees. Instead, issuing stock to employees improves the Entrepreneur's competitiveness, as described later in this note.

To issue shares to venture capitalists, an *offer* consisting of the venture capitalist, number of shares, and price per share must be created. Offers are created by clicking on "offer shares to venture capitalists." The shares are not sold until the venture capitalist accepts the offer. Venture capitalists can also submit offers buy stock from entrepreneurs. A team can view, accept, decline, and cancel outstanding offers by clicking the "Offers" button on the bottom of the control panel.

Before an entrepreneur team can sell product, it must have activated production capacity. Production capacity is created by investing in property, plant, and equipment (PP&E), which is done by clicking on the "Total PP&E Expenditures" button in the northeast corner of the control panel. Capacity is measured by the maximum rate of revenue generation that it can support. The amount of capacity resulting from a dollar invested in PP&E will be given in the detailed assignment handout. Capacity also results in a *burn rate* of operational expenditures. The maximum burn rate at the current capacity is given in the northwest corner of the control panel. While you cannot sell PP&E, you can decrease the fraction of capacity that is activated, which reduces the burn rate accordingly. The ratio of incurred burn rate to maximum burn rate (i.e., the fraction of capacity activated) can be adjusted by clicking the burn rate percentage in the southwest corner of the control panel.

The amount of product that an entrepreneur sells each day is determined by its activated capacity, its cash on hand, and the demand for its product. If demand exceeds activated capacity, or if there is insufficient cash to pay for cost of goods sold to support demand, then excess demand is turned away. Demand is determined by the following five features of the Entrepreneur: (1) The previous simulated day's market share; (2) the previous day's marketing expenditures; (3) total accumulated R&D expenditures; (4) equity owned by employees; and (5) the reputation of venture capitalists that have invested in the entrepreneur team. The details of the formula for demand will be provided in the handout assignment.

Marketing and R&D expenditures can be changed by clicking on "Monthly Marketing Rate" or "Monthly R&D Rate" in the southwest corner of the control panel. Increasing either amount may incur a one-time fee reflecting the cost of hiring new employees or contractors.

Sold product generates revenues. Cash generated from revenues becomes receivables, and after 40 simulated days, the receivables become cash.

Entrepreneurs: Expenditures

Cash expenditures take place at the end of each simulated day. PP&E expenditures, burn rate, marketing expenditures, and R&D expenditures were described in the previous section of this note. Entrepreneurs also spend cash on inventory. The inventory holding period is exactly the length of the inventory payables holding period. As a result, cash payments for inventory occur when the revenues from that inventory are generated. If there is insufficient cash to pay for the inventory, then inventory is simply returned without charge and excess demand that cannot be met as a result is turned away.

Taxes are paid at the end of each 91-day quarter. If the entrepreneur team has a tax credit instead of payable taxes, the tax credit is carried over to the next quarter rather than being converted to cash. If there is insufficient cash to pay taxes, then the Entrepreneur automatically borrows money at an interest rate of 30% per year. If there is insufficient cash to pay the interest on the debt in subsequent days, then additional debt is incurred. At the end of each simulated day, any cash available is used to retire debt until no debt remains. The total debt is shown in the northeast part of the control panel.

If there is insufficient cash to meet other expenditure rates that were set by the entrepreneur, then the expenditure rates are reduced to the available cash that day. The entrepreneur must increase the rates back to their original levels later if desired. If there is insufficient cash to support several categories of expenditures, then cash is allocated according the following priorities: (top) debt retirement, (2nd) taxes, (3rd) R&D, (4th) marketing, (last) burn rate.

Entrepreneurs: Data and information

Entrepreneurs can access financial statements by clicking on the “Balance”, “Earnings”, or “Cash Flow” buttons below the control panel. When the financial statement appears, there will be buttons to select the level of aggregation (e.g., daily or quarterly) at the top of the page and to select the number of periods to display, at the bottom of the page.

Entrepreneurs can click on the “History” button to see executed transactions (e.g., offering stock, changing expenditure levels, or investing in PP&E) and whether the transactions were successfully executed or not. You should check the history to verify that transactions were successfully executed. The “Pending” button shows transactions that the Entrepreneur has scheduled for the future. Entrepreneurs can also cancel such transactions from the “Pending” screen. The “Offers” button shows the offers of stock for cash either to or from venture capitalists. The offers can be viewed, canceled, declined, or accepted from that page.

Entrepreneurs can view all the entries in the industry journal by clicking on the “Journal” button and can issue a release to the journal by clicking on the “Release” button. More details on the industry journal are provided near the end of this note.

A mailbox appears in the upper right-hand corner of the Entrepreneur’s screen. Mail can be sent to other Entrepreneurs or Venture Capitalists by clicking on the mailbox. Mail can also be read by clicking on the mailbox. A red mailbox means there is unread mail.

Plots of the historical market size and market shares can be viewed by clicking on the corresponding links in the northwest corner of the control panel. Entrepreneurs can see how their previous simulated day's marketing expenditures ranked among the other entrepreneurs by clicking on the "Total Marketing Rankings" link, and can see how their cumulative R&D expenditures ranked by clicking on the "Total R&D Rankings" link.

Quarterly operations finance reports are available by clicking on the corresponding button in the northeast corner of the control panel. The reports provide notification of various "problematic" events such as demand being turned away due to capacity limits or expenditure rates being reduced due to cash shortages.

Finally, the reputations of venture capitalists can be viewed by clicking on the corresponding link in the southeast part of the control panel.

Venture Capitalists

The Venture Capitalist (VC) screen is shown below. The VC cannot generate cash; it can only invest cash in entrepreneurs. The VC's cash does not earn interest.

Venture Capitalist Data

Investment Status							
Name	Investment	Shares	Ownership	Market Share	Cash	Earnings over last 91 days	Reputation Effect
<u>e1</u>	\$100,000.00	10,000	1.09%	0.01%	\$107,972.10	\$1,000.79	\$0.10
<u>e2</u>	\$50,000.00	10,000	1.09%	0%	\$54,142.23	\$394.30	\$0.00

offer to purchase shares from [entrepreneurs](#)

Reputation		Market Report	
Score:	100%	market size: \$1,596,093.02 per month	
Total amount invested:	\$0.00	Plot: Market size share	
Contribution from equity:	\$0.10		

[survey reputations](#)
[invest in reputation](#)

[BALANCE](#) [EARNINGS](#) [CASH FLOW](#) [JOURNAL](#) [RELEASE](#)
[HISTORY](#) [PENDING](#) [OFFERS](#) [UPDATE](#) [QUIT](#)

The top of the control panel lists all the entrepreneurs in which the VC owns equity. The VC can generate an offer to buy shares from an Entrepreneur by clicking on the corresponding link below the list of entrepreneurs. The Entrepreneur must then accept or decline the offer. Entrepreneurs can also submit offers of equity for cash to the VCs.

Vcs can view, cancel, accept, and decline offers by clicking the "Offers" button below the control panel. The VC can schedule offers to be issued at future dates. Offers scheduled for future dates (i.e., not made yet) can be viewed by clicking on the "Pending" button below the control panel. The history button shows the various transactions that the VC has performed (e.g., issuing an offer or investing in reputation).

Each venture capitalist has a reputation score. The reputation scores of all the VCs add to 100%. An entrepreneur's market share is partly determined by the reputation of the VCs that have invested in the entrepreneur. In particular, only the reputation of the VC with the highest reputation among the VCs that have invested in the entrepreneur affects that entrepreneur's market share. A VC's reputation can be built in two ways. First, the VC can invest directly in its reputation by clicking on the "invest in reputation" button in the southwest part of the control panel. Second, a VC can invest in an entrepreneur. Each entrepreneur contributes an amount of "dollars" to the VC's reputation, equal to the entrepreneur's revenues over the last simulated year, multiplied by the fraction of that entrepreneur's equity that the VC currently owns. The final VC reputation score is equal to the VC's raw score divided by the sum of all the VCs' raw scores. The VC can view all the VC's scores by clicking on the "survey reputations" link.

The VC can view and download historical market sizes and market shares by clicking on the corresponding links in the southeast part of the control panel.

The VC can read or issue Press Releases by clicking on the "Journal" and "Release" buttons, respectively, below the control panel. The VC can read mail or send mail to other VCs or Entrepreneurs by clicking on the mailbox in the upper right-hand corner of the VC's screen. A red mailbox signifies unread mail.

Venture Capitalist's Access to Entrepreneurs

The list of entrepreneurs in which the VC owns equity is shown in the top of the VC's control panel. The VC can access the Entrepreneur's control panel by clicking on the Entrepreneur's name in the list. At this point, the VC will be able to view all the information that the Entrepreneur can, including financial statements, transaction history, mail, and operations finance reports. However, without the Entrepreneur's password, the VC will not be able to send mail, issue press releases, or change expenditure levels from the Entrepreneur's control panel.

The Industry Journal and Team Standings

Any team can issue press releases to the industry journal. In addition, whenever an entrepreneur issues equity to anyone, the transaction is reported in the industry journal. Finally, at the end of the simulation, the final team standings are reported in the journal.

The simulation ends with all the entrepreneurs going through an IPO. Entrepreneurs are ranked according to the value of the founders' equity in the entrepreneur's company. The value of the founders' equity is equal to the market capitalization of their company times the fraction of equity they own in the company. The market capitalization of the company is equal to its cash on hand, plus a multiple of the company's last quarter's earnings. The value of that multiple is given in the detailed assignment handout.

VCs are ranked according to their portfolio value. The portfolio value is equal to the cash on hand plus the value of the equity held in each entrepreneur. The equity value is equal to the fraction of equity in the entrepreneur multiplied by the entrepreneur's market capitalization. **The winning teams are the top-ranked entrepreneur team and VC team using the rankings described above.**

Registering your team

Before the first assignment begins, you will need to create and register your team. Come up with a team name consisting only of lower-case letters (no punctuation) and a team password. Your instructor will give you the address for the registration web page.

On the registration page, you will first have to enter the code given in class. Once you have entered the code, you will be asked for the team name and the password that you came up with. Finally, you will be asked for the names of each of the team members and whether you are registering as a VC or an Entrepreneur. After you submit this information from the web page, your team will be registered. Later, if you decide to change your team name, password, or members before the assignment begins, you can simply return to the registration page, enter the same team name and password you entered the first time, and then make your changes. To completely remove your team, delete all of the team members' names and save the resulting team. You will not be able to make any changes to your team after the simulation begins.

Using the simulator

When the assignment begins, you can access your factory from the entry web page using the team name and password that you previously registered. Your instructor will give you the address for the entry web page. The entry web page is shown below.

The web-based simulator runs continuously. That is, if you view the site at 10 am on April 16 and then view it again at 11 am on the same day, you will see that some simulated time has elapsed. Two years of simulated time corresponds to one week of real time. You have no control over the simulator's clock. **You may need to wait for a few simulated days to see the effects of your decisions, so constant monitoring is not necessary.**



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Venture Capital

SIMULATION

Team ID :

Password :

OK

Clear

When you login, your team's status is automatically updated. Whenever you make a change (like selling stock), your team is also updated. Financials are updated at the end of each simulated day. To update the factory status otherwise, you must click on the *update* button on the bottom of the web page. In light of the slow speed of the simulator, there will usually be no need for frequent updating.

More information on the assignments will be distributed shortly before each assignment begins. This information will specify the number of days that each simulation will run. While the assignments are running, you can access the page as frequently as you wish. At the end of the assignments, the page is frozen (i.e. you cannot alter anything on it). You can then access your team's final status for that assignment.