

BUSINESS GROWTH, EXTERNAL FINANCING, AND IPOs: JERRY IS INTRODUCED TO THE “ONE FOR ME, NONE FOR YOU” SLOGAN

1. Jerry's Start

Jerry opened his first lemonade store and discovered the joys and frustrations of becoming an entrepreneur. The lemonade recipe, calling for cracked white pepper and salt, was adapted from an old family concoction his grandmother served during the hot summer months. It used less water than the usual lemonade. In fact, the main ingredients were freshly squeezed lemon juice and ice. Jerry's grandmother used little sugar in her recipe since she preferred the tart, tangy taste of fresh lemons.

After serving his initial customers, however, Jerry got his first lesson in customer satisfaction. The customers disliked his grandmother's recipe! They thought it was too tart.

2. Perfecting the Business

Jerry was perplexed by this reaction. He was forced, however, to recall his earlier lesson on *user-based quality* (see Chapter 1) and realized that ultimately the only thing that mattered was what the customer wanted. In order to do some market research, he enlisted five of his friends, who were among the first customers, to act as a customer panel to advise him of the types of products to offer.

Based on their feedback, Jerry revised his menu to include original lemonade, along with flavored lemonade, hot tea, and shaved ice versions of both tea and lemonade. All would be offered unsweetened, sweetened with sugar or artificial

sweetener. Jerry would also offer snacks of cookies, muffins, and the like, all purchased from a local bakery.

Jerry realized, however, that a key component of the business plan was to perfect the shaved ice versions of tea and lemonade. The shaved ice required a machine that uniformly processed a block of ice into a mass of tiny ice crystals that could be placed in a cup to accept the lemonade or tea flavor. Jerry first investigated the machine used to make snow cones, a popular crushed ice product that is offered in many flavors and served in a paper cone-shaped cup. The ice was too coarse and grainy for Jerry's taste. After rejecting the snow cone ice machines, Jerry discovered that few alternatives existed. He would have to develop his own machine. He enlisted an engineer friend of his to help him design and develop a suitable shaved ice machine.

Jerry paid the engineer an hourly wage and had him sign a legal agreement that Jerry would own the rights to any machine that was developed. Two months later, Jerry had a version of the machine that worked. The machine design was a variant of a rotary blade concept with precise positioning of the block of ice to be shaved. The shaved ice easily absorbed the tea and lemon flavors, resulting in very rich flavors of the final product. This attribute was critical to Jerry's strategy of offering excellent products at premium prices since no competitor could match it.

Jerry hired a local attorney to investigate the possible patents for his machine. After confirmation that no similar designs existed, he instructed the attorney to file for patents on the machine. The attorney also suggested to Jerry that he incorporate the business, especially in light of the patented machines. With a corporation Jerry would achieve limited personal liability, should the lemonade business fail.

When all this was done, Jerry invited the customer panel to taste the shaved ice tea and lemonade produced with the machine. They were impressed. Jerry sensed he had a hit!

3. The Business Grows

Jerry and Sallie decided that the best thing to do was to have a grand re-opening to introduce the new menu with the tea and lemon shaved-ice products they could now make with the new machine. The grand re-opening was announced in the newspapers and on the radio. Jerry spent over \$6000 to launch the new menu and inform potential customers of his location.

Fortunately, the advertising expenditures paid off. There was a traffic jam at the mall, and the cash register was busy all day. The shaved ice tea and lemon flavors were a hit and the original lemonade also sold well with the increased customer traffic. The receipts for the grand re-opening day totaled \$15,000.

Income statement

Sales revenue	\$1,800,000
Cost of goods sold	\$1,000,000
Gross profit margin	\$800,000
SG&A	\$300,000
Depreciation	\$150,000
Net operating profit	\$350,000
Interest expense	\$80,000
Profit before taxes	\$270,000
Taxes at 40%	\$108,000
Profit after taxes	\$162,000

Balance sheet

Assets		Liabilities and equity	
Cash	\$120,000	Accounts payable	\$380,000
Accounts receivable	\$60,000	Taxes payable	—
Inventory	\$450,000	Accrued liabilities	—
Current assets	\$630,000	Current liabilities	\$380,000
Gross fixed assets	\$1,700,000	Bank debt	\$800,000
Accumulated depreciation	\$150,000	Public debt	—
Net fixed assets	\$1,550,000	Shareholders' equity	\$1,000,000
Total assets	\$2,180,000	Total liabilities and equity	\$2,180,000

Fig. 3.1. First year financial statements.

The success of the grand re-opening was sustained in the following months, erasing the early losses of the business. The first year's financial statements are shown in Fig. 3.1. Jerry was pleased to see that first-year profits were \$162,000. As sole shareholders of the incorporated business, he and Sallie paid the entire profit to themselves as a dividend.

Jerry's success was drawing the attention of competitors who wanted to franchise the concept or buy the business. Competitors were particularly interested in Jerry's patented shaved ice machine, which offered a product advantage in absorbing flavors.

Jerry contacted Bob Butterfield to show him the financials and possible expansion plans for the business.

“Wow,” Bob exclaimed, “these financial statements are great. Your business is really humming, Jerry.”

“I know,” said Jerry, “but I think I should expand the business to capture the market before competitors move in with a similar concept.”

“But don’t you have a patent on the shaved ice machine?” Bob interjected.

“Yes, but the competition could potentially develop a similar machine, or substitute a different kind of ice. As you know, Bob, these guys are pretty sharp. Especially Mickey, who owns a majority of the national flavored drinks business. I’ve met him once, and don’t like him. He wanted to buy our patents, but I refused,” responded Jerry.

Jerry took Bob’s advice and opened two more locations locally. He recruited and trained the employees to staff the two new locations. Although the business was relatively easy to learn, Jerry had to instruct the new employees on the proper use of the shaved ice machine, the recipes used to create the unique tea and lemon flavors, the required dress and demeanor demanded for the job, and the crucial elements of customer service that were necessary for success.

At Bob’s insistence, he produced a training manual on how to operate the business. Periodically, Jerry would update the “Bible,” the term used to affectionately describe the training manual. In the end, Jerry completely codified the operating procedures that were necessary for success in operating his business.

Six months into the second year of operations, the interim results were as shown in Fig. 3.2. The two new locations were now as profitable as the initial site. Jerry now began to consider expanding to other cities. Once again, he sought Bob’s advice.

4. Expansion Plans

“Bob, if I want to expand, what should I worry about?” Jerry asked, as he pushed the interim financial results toward him.

Bob responded, “Financial capital is a constraint, although you just don’t see it at this stage. Remember our discussion of financial ratios? Let me add to that with a new concept — sustainable growth.

“The sustainable growth rate calculation is very important for a growing business like yours because it tells you how fast you can grow sales and assets *without issuing new equity to finance the growth*. The reason why you should be interested in this is that, as a privately-held company, you don’t have access to public equity markets. If expanding your business requires new equity — perhaps because you don’t want to take on more debt — it would have to probably come from your own money. However, you may not want to risk any more of your own wealth in the business.” Bob showed Jerry the following.

Income statement

Sales revenue	\$1,400,000
Cost of Goods Sold	\$800,000
Gross profit margin	\$600,000
SG&A	\$250,000
Depreciation	\$75,000
Net operating profit	\$270,000
Interest expense	\$47,000
Profit before taxes	\$228,000
Taxes at 40%	\$91,200
Profit after taxes or net income or earnings	\$136,800

Balance sheet

Assets		Liabilities and equity	
Cash	\$95,800	Accounts payable	\$496,000
Accounts receivable	\$75,000	Taxes payable	—
Inventory	\$527,000	Accrued liabilities	—
Current assets	\$697,800	Current liabilities	\$496,000
Gross fixed assets	\$2,100,000	Bank debt	\$940,000
Accumulated depreciation	\$225,000	Public debt	—
Net fixed assets	\$1,875,000	Shareholders' equity	\$1,136,800
Total assets	\$2,572,800	Total liabilities and equity	\$2,572,800

Fig. 3.2. Second year financial statements — First 6 months.

This sustainable growth rate, G^* , is given by:

$$G^* = E \times R \times A \times L$$

where

G^* = Sustainable growth rate in sales

E = Earnings retention rate (also equal to 1 minus the dividend payout ratio)

R = Return on sales (net income/sales revenue)

A = Asset turnover ratio (sales revenue/assets)

L = Leverage ratio (assets/beginning equity).

He also remarked that there is an alternative formulation of G^* :

$$G^* = E \times ROE$$

where

ROE = Return on equity

ROE = $R \times A \times L$.

The last formulation of ROE is known as the DuPont formula, which expresses return on equity as equal to the multiplication of return on sales, assets turnover, and leverage ratios. (We saw this in Chapter 2.)

“For your company, the calculation yields a sustainable growth rate of about 27%. Since I need annual rates for these ratios, I have assumed the 6 month’s sales will be one-half of the yearly results. As I recall, the business is not very seasonal on a half-year basis.” Bob then showed Jerry his calculations:

$$E = (1.0 - 0) = 1.00$$

$$R = 136,800/1,400,000 = 9.77\%$$

$$A = ((1,400,000) \times 2)/2,572,800 = 1.09$$

$$L = 2,572,800/1,000,000 = 2.57$$

$$G^* = 27.4\%$$

“Note that the ROE is 27.4% and I have assumed all of the earnings are retained in the business. In other words, no dividends are paid, which is usually the case for a fast-growing start-up company like yours. I don’t think it makes much sense for you to pay a dividend right now, given your growth opportunities. If you do pay a dividend, the sustainable growth rate will be lower. In fact, if all the earnings are paid as dividends the sustainable growth rate drops to zero. Sometime in the future we should talk about a dividend policy for the company. For now, the zero-dividend policy is fine.

“Given that your plans call for an expansion that will add five locations to the current three, you expect to grow sales at approximately a 167% rate, assuming the new locations perform as the existing ones do.

“This planned growth in sales is well in excess of the self-sustainable growth rate. Something has to give. I’d suggest you prepare for an *initial public offering* (IPO) of shares and sell common stock to the public. That may be the best way for you to get enough capital to expand as rapidly as you want to in order to beat the competition.”

“Wait a second, Bob,” Jerry interrupted. “I was able to open two new locations without requiring additional capital.”

“That is true, Jerry. But you also greatly expanded your debt through increased use of lease financing. When you signed your name to the leases on the two new locations, it was as if you had signed your name to a series of debt payments at the bank. Your annual operating lease obligation is now \$60,000. Using the widely accepted standard of eight times annual lease payments to determine the equivalent debt and asset investment, I have recast your balance sheet in Fig. 3.3. Note that on an adjusted book value basis, your debt is half again as much as shown on the original balance sheet. Most financial analysts capitalize operating leases as I have done and include them as debt on the balance sheet you have been greatly increasing the leverage ratio to finance your initial growth. Given the expansion plans you have outlined, I see no alternative that is better than an issue of stock. This will distribute some of your ownership position to others through the IPO.”

“Won’t that dilute my ownership position?”

“Yes it will, Jerry. However, most entrepreneurs think it is better to own a smaller percentage of a big pie than 100% of a small pie. It is the inevitable consequence of needing financing to fuel the high growth that your strategy is producing. In fact, external financing will allow you to relax the constraint imposed on you by sustainable growth, which is very limiting. At the end of the day, you are interested in good growth, which is all growth at rates of return exceeding your cost of capital, not just growth you can finance internally. Judicious use of

Balance sheet

Assets		Liabilities and equity	
Cash	\$95,800	Accounts payable	\$496,000
Accounts receivable	\$75,000	Taxes payable	—
Inventory	\$527,000	Accrued liabilities	—
Current assets	\$697,800	Current liabilities	\$496,000
Leased assets	\$480,000	Capitalized lease liabilities	\$480,000
Gross fixed assets	\$2,100,000	Bank debt	\$940,000
Accumulated depreciation	\$225,000	Public debt	—
Net fixed assets	\$1,875,000	Shareholders’ equity	\$1,136,800
Total assets	\$3,052,800	Total liabilities and equity	\$3,052,800

Fig. 3.3. Recast balance sheet.

external financing to earn higher rates of return is part of a well-synchronized Value Sphere.”

Jerry reflected on what Bob had said and asked, “What do you mean by good growth? I thought growth was always good.”

Bob shook his head and responded, “No, Jerry. There are two types of growth — good growth and bad growth. Good growth occurs when the return on net assets exceeds the cost of capital. When this happens, every incremental dollar invested creates more value. Bad growth occurs when the return on net assets falls short of the cost of capital. In this case, every dollar invested destroys value.”

Jerry looked surprised, “You mean there are firms out there that actually destroy value knowingly?”

Bob nodded, “May seem surprising, but between 1965 and 1981, both the earnings and book value per share *more than doubled* for the Dow Jones Industrial Average while the ratio of market value to book value *declined more than 60%* and P/E ratios also fell. This could only happen if these firms engaged in bad growth. It is different for us. This IPO is going to help us engage in good growth.”

“Well, if that’s the way it is, how do I get started on this IPO thing, Bob?”

“I suggest you contact Butler and Jones. It’s a regional investment banking house in this area that I believe would serve you well,” said Bob.

5. The IPO Process

Jerry met with Alex Butler, a founding partner of Butler and Jones, to discuss a potential IPO for his business. What impressed Jerry the most were the questions Alex asked. It seemed as though he wanted to know everything about the business — its history, its strategy, the financials, future plans, background of senior management, the competition, and so on. Mr. Butler was particularly interested in the patent protection on the shaved ice machine. He explained to Jerry that this was all part of the “due diligence” process that his firm must undertake when assessing the prospects for new clients in need of financing.¹⁹

Alex Butler also explained to Jerry how the IPO process worked from start to finish. This is shown in Fig. 3.4.

A critically important part of an IPO is determining the share price for the stock offering. If the price is too high, the issue might fail. Or even if it succeeds, there might be a significant post-issue price decline that exposes the firm and the

¹⁹In Chapter 19, we will revisit the due diligence process in connection with a merger valuation.

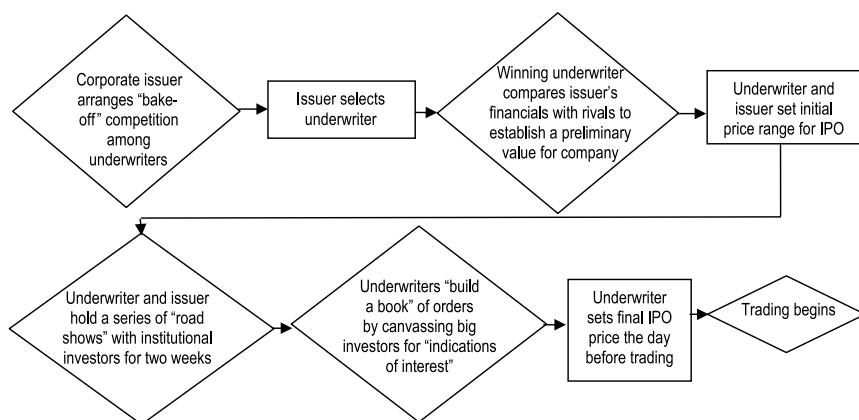


Fig. 3.4. Anatomy of an IPO.

Source: Wall street Journal, April 16, 1999.

investment banker to the risk of being sued by unhappy investors. If it is too low, the company will sell the shares for less than they are worth and thus suffer more dilution than necessary.

Although there are many ways to value a firm in an IPO, the investment bankers always check the reasonableness of their share pricing by using data from comparable companies. On average, however, it appears that IPOs are underpriced, so that investors who can buy the IPO at the initial price can earn abnormally high returns if they sell off their shares by the end of the day on which they buy the IPO.²⁰

Jerry was struck by an article appearing in the July 7, 1998 *Wall Street Journal*. The headline read, "Broadcast.com Soars 3½ Times From IPO Price." Of particular interest was the following paragraph:

Shares of Broadcast.com Inc., an unprofitable provider of audio and video programming over the Internet, on Friday posted the largest first-day gain of any sizable initial public offering this decade. Shares of the Dallas company, the latest high-tech wonder to dazzle investors and raise questions about the sky-high valuations of many Internet start-ups, rocketed from their offering price of \$18 to close NASDAQ Stock Market trading at

²⁰For desirable IPOs, demand for the new shares may exceed supply at the offering price. In this case, only the best customers of the investment bank will receive an allocation of the new shares. After the Internet boom, when this practice was rampant, the large gains earned by the boomed bank customers was viewed as unfair. Now the SEC requires a chance for all investors to participate in IPOs.

\$62.75, a gain of 294% from the offering price. The stock actually opened for trading at \$68.”²¹

This IPO, managed by Morgan, Dean and Smith, had a huge demand for shares from institutional as well as individual investors. Jerry noted that the IPO underpricing phenomenon was not limited to issues from smaller, less known, investment bankers such as Butler and Jones. To Jerry, the evidence seemed to indicate that the valuation models employed by the investment bankers to set the price were seriously flawed. He needed to find out more.²²

How does the pricing for the IPO stack up against the comparable data for similar firms that are publicly traded? Through the use of multiples of net income, EBIT, cash flow, etc., the banker can gauge the share price of the IPO relative to comparable, publicly-traded firms. For this reason, Butler and Jones prepared a pro-forma forecasted year-end income statement for Jerry’s lemonade in Fig. 3.5.

$$\begin{aligned}\text{Equity cash flow} &= \text{Earnings} + \text{Depreciation} - \text{Reinvestment} \\ &= \$273 + \$151,740 - \$1251 \\ &= \$424,074.\end{aligned}$$

The comparable analysis performed by Butler and Jones, based on the numbers in Fig. 3.5, is shown in Fig. 3.6. It indicates a total share value of over \$8.9 million

Sales revenue	\$2,800,000
Cost of goods sold and SG&A	<u>\$2,100,000</u>
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	\$700,000
Depreciation	<u>\$151,748</u>
(EBIT) Earnings before interest and taxes or net operating profit interest	<u>\$548,252</u> <u>\$92,290</u>
Profit before taxes	\$455,962
Taxes at 40%	<u>\$182,385</u>
Earnings (net income)	<u>\$273,577</u>

Fig. 3.5. Forecasted year 2 income statement.

²¹The record for the largest first-day percentage price increase belongs, however, to a little company in New York, called Globe.com, that went public in November 1998. It opened with an IPO price of \$9 a share. The price of the very first trade was \$90 a share, a whopping 900% increase!

²²The Addendum describes the scientific evidence on IPOs and the theories that explain why IPOs are underpriced. In fact, subsequent IPOs of some Internet stocks have eclipsed Broadcast.com’s first-day gain.

	Price/ Earnings	Price/ Sales	Price/ EBIT	Price/ EBITDA	Price/ Cash flow
Boise Flavored Drinks, Inc.	22.5	2.3	13.1	11.4	14.9
Bender Toys Corp.	30.3	1.8	17.6	15.3	20.0
Smith and Price, Inc.	21.7	1.9	12.6	10.9	14.3
John and Sam Pizza	18.9	1.5	11.0	9.5	12.5
Davidson Manufacturing	34.2	2.1	19.8	17.3	22.6
Instant Data Corp.	19.9	2.4	11.5	10.0	13.1
Average	24.6	2.0	14.3	12.4	16.2
Implied value of Jerry's equity (millions)	\$6.73	\$5.60	\$7.84	\$8.68	\$6.87
Average of valuations	\$7.140				
25% Premium for growth final value (millions)	\$1.785				
Value per share (1 million shares)	\$8.930				

Fig. 3.6. Comparable analysis by Butler and Jones.

would be appropriate for Jerry's company. Note that Butler and James performed all of their comparable ratio analysis an equity price basis. Alternatively they could have conducted their analyses of the sales, EBIT, and EBITDA ratios on a firm valuation basis. This procedure recognizes that these ratios are calculated on date *before* the subtraction of interest. Thus, the entire enterprise, financed by both debt and equity, is being evaluated. Under such enterprise valuation, value of the debt must be subtracted from the result to arrive at the value of the equity. Most investment banks would employ this enterprise valuation technique to account for different leverage ratios of the comparable firm sample. However, regardless of the methodology used, comparable analysis generally indicates a range of valuations at best.

Fortunately the comparable analysis confirmed the results of the investment banker's more sophisticated discounted cash flow valuation model which suggested an equity valuation of between \$8 million and \$9.5 million. Financial projections of the expansion plans, which called for the outright purchase of the property supporting five locations, indicated a need of \$5 million. Butler and Jones decided that an IPO price of \$7.75 per share and an issue of 666,667 shares were appropriate. Butler and Jones would underwrite the stock issue with a *firm commitment* contract under which they would buy 666,667 shares from Jerry at \$7.50 each, and issue

them at \$7.75 each. These 666,667 shares would raise the \$5 million that Jerry needed.

The service provided by Butler and Jones came at a price. The investment banker asked for a 6% fee (\$300,000) and intended to market the shares at \$7.75 each after buying them from Jerry at \$7.50. If all went according to plan, Butler and Jones stood to make \$466,667 in total (the \$300,000 fee plus the \$166,667 on the firm commitment underwriting) or nearly 10% of the \$5 million raised by Jerry.

The banker does, however, bear some risk that the issue will fail to attract the anticipated market at the issue price. But under the firm-commitment contract, Butler and Jones must pay Jerry \$5 million for the issue regardless of the state of the market at the time of issuance. Alternatively, Jerry could have a *best efforts* contract with the bank, but in that case he would not be guaranteed to raise the full \$5 million needed to implement his plans.

Federal law, the Securities and Exchange Commission, state law, and various other statutes all had to be satisfied before the IPO could take place. The entire process took two months and a lot of Jerry's time. Moreover, Jerry and Sallie now owned only one-third of the company since they retained 333,333 shares of the original million shares. The rest were owned by the various investors who bought the IPO.

6. The IPO

The IPO was a success. Jerry was impressed with the way Butler and Jones handled the issue. The stock was listed over-the-counter (OTC), also known as the NASDAQ (National Association of Securities Dealers Automatic Quotation) market, and the price per share immediately rose to \$13 per share on the first trade. In fact, Jerry wondered if the IPO price could have been set higher so that the company could have raised the \$5 million without as many shares being issued and with less dilution of his ownership position.

On the IPO date, Jerry asked Alex Butler, "Alex, why didn't we set the share price higher?" "Because," Alex responded, "if we had been too aggressive in our initial pricing of the stock issue, the market response may have been less enthusiastic. You don't want that to happen. There is a sort of cascading effect in IPOs. Because the issuer is relatively unknown, investors wait to see what other, ostensibly more informed, investors do before deciding whether to buy shares. By pricing the IPO low, we can ensure that we can attract the initial set of investors to buy, so that we can get the right cascade going. As a new name to the market, you want to develop a good reputation to help with future financings as you continue to grow

the business. Moreover, Jerry, as you know, we are supporting the price by doing post-IPO price stabilization. This involves our standing ready to buy back shares from investors if the price begins to fall back to the IPO price. We are committed to continue to support the price for about two weeks.”

The arguments made some sense to Jerry. But it made him wonder if there was a potential conflict of interest between the company and the investment banker. The company wanted as high a price as possible, whereas the investment banker wanted a price at which it could sell the issue without having to work too hard. At least he had the comfort of having a successful issue. His business had come a long way and now he had a company that was listed on the NASDAQ. He decided to share the news with his friend, Bob Butterfield.

“Bob,” Jerry exclaimed, “I now have a company whose stock trades on the NASDAQ with the symbol ‘TART.’ The company and I have arrived.”

“That’s great,” Bob responded, “your ownership position is now liquid. The daily stock price also gives you an automatic scorecard on how well you are doing. In fact, the market will judge you every single day. There is, of course, a downside. You now have to manage the business under some scrutiny. The new shareholders may second-guess your decisions, and knowledge of this possibility may change your decisions. You should probably ask Butler and Jones to identify who bought large blocks of the IPO, since you may want to consult with them before making major decisions. They will be most interested in how you are managing your Value Sphere. In a very real sense, these new block shareholders will become your partners in the business.”

“OK,” said Jerry, “but you know, even though Butler and Jones did a great job, I’m not sure we couldn’t have priced the IPO higher. We closed on the first day at \$15 per share. By pricing the IPO to net us \$7.50, we left \$5 million on the table.”

“You’re right,” replied Bob, “it is a bit of a problem. And you know, the ordinary investor out there didn’t have much of a chance to get a piece of your IPO to profit from the underpricing. I’m sure Butler and Jones gave it to their best customers. Some of my colleagues call it the ‘One for me, none for you’ phenomenon. But take heart, all the investments banks do this.”²³

Jerry sighed. The heck with it. He still had a great company. He was justifiably proud of the achievements of the company and its current position. Bob had reminded him, however, that the task would not get any easier. He must now invest

²³The Google IPO attacked this problem by employing a Dutch auction method, whereby the IPO was more widely available to potential investors. This method is described in the addendum to this chapter. Note, however, that even in this case there is evidence of underpricing.

the \$5 million wisely and be able to communicate the company's strategies to the new investors who had just purchased the stock.

Main Lessons

- High growth is often not sustainable without additional equity financing. This additional equity financing could either come from the initial owners of the business, or if they wish to go public, then from an initial public offering (IPO) of stock. Going public, however, means loss of some ownership and control for the entrepreneur. Despite this, external financing is often an essential part of a company's Value Sphere.
- IPOs are typically underpriced.
- Once the firm is public, decision making within the firm may be irrevocably altered, and the beliefs of investors about how the firm should be run could significantly affect how it is actually run.

End-of-Chapter Exercises

1. Calculate the sustainable growth rate for your company. How does the rate compare to the planned rate of growth? What managerial actions are needed to align the sustainable growth with the planned growth?
2. When did your firm and others in your industry first go public? What was the share price reaction to the IPOs? What do these price reactions teach you about market expectations and growth strategies?
3. If you do not view external equity financing as a constraint on your growth, what is the most appropriate way to think about your sustainable growth rate?

Practice Problems

1. Calculate the ROE and G^* for the ABC company:
 - Return on sales = 5%
 - Asset turnover = 1.5 times
 - Leverage ratio = 2
 - Dividend payout ratio = 0.4.
2. If the ABC company plans to grow at a 20% rate in the future, what would you recommend as a plan of action to the Chief Financial Officer?
3. Why is Jerry uncomfortable to sell shares to the public? Are such concerns rational?
4. Often retailers that operate in shopping malls report low leverage ratios. Why would they do this? What changes would you make?

5. What problems do you see in using comparable analysis to value companies? What are the benefits?
6. What are the different theories for why IPO's are underpriced? Critically assess the strengths and weaknesses of each theory.
7. Do you believe Dutch auctions can eliminate all IPO underpricing? Why or why not?

Addendum

1. IPOs are Underpriced

The IPO market has generated many research studies, particularly those aimed at explaining why IPOs are persistently underpriced on average, yielding an average return of 16% on the first day of issue.²⁴ Clearly the firms issuing the securities would like to capture some of this gain through higher initial prices. Of course, the danger is that too high a price may discourage investors and the company will not raise the funds needed for investments or restructuring. These two conflicting forces play a role in the IPO models that have been developed.

This addendum will explore three of these models: the information heterogeneity model of why new issues are underpriced, the cascades model explaining how potential investors in an IPO can learn from the purchasing decisions of earlier investors, and the litigation risk/reputation model of underpricing.

2. Why New Issues are Underpriced: Information Heterogeneity

Kevin Rock has proposed an interesting explanation for the underpricing of IPOs.²⁵ The key to his explanation is that there is a group of investors with limited wealth who are "informed" about the future prospects of the firm raising capital through the IPO; i.e., their information is better than that of other (uninformed) investors, the firm issuing the securities, and its underwriter.

Rock offers two justifications for why informed investors have better information than the issuing firm and its investment banker:

1. All relevant information about the issuing company is disclosed in the prospectus.

²⁴For evidence of the IPO underpricing phenomenon, see Jay R. Ritter, "Initial Public Offerings," *Contemporary Finance Digest*, Spring 1998, pp. 5–30.

²⁵Kevin Rock, "Why New Issues are Underpriced," *Journal of Financial Economics*, 15(1986), pp. 187–212.

2. All the individuals in the market, including competitors and other bankers, collectively know more than the issuer and his investment banker.

Informed investors bid for the issue when the offering price is below the true value, creating the possibility of oversubscription. Likewise, if the true value is below the offering price, the informed investors withdraw and there is the prospect of an excess supply of the new shares. Given the potential for excess demand or excess supply, there is no guarantee that an order for the new shares will be filled. Rather, each investor will be allocated shares in an oversubscribed issue in a random fashion.

With the “all or nothing” participation of the informed investors, an uninformed investor views the probability of receiving an allocation of an overpriced issue as being greater than the probability of receiving an allocation of an underpriced issue. Thus, if issues are correctly priced *on average*, the uninformed investors always buy too much when shares are overpriced and too little when they are underpriced, thereby losing money on average. To compensate for this bias, the issuer must price the shares at a discount to attract the uninformed investors to the offering. And the discount must be just enough to compensate uninformed investors for their informational disadvantage relative to the informed investors. The informed investors still earn more profit than the uninformed. But in effect, the “relative losses” of the uninformed investors are absorbed by the issuing firm, so they at least break even.

3. Cascades and the IPO Market

Ivo Welch has proposed a cascades explanation for the underpricing of IPOs.²⁶ His explanation also implies that IPOs will fail or succeed rapidly. Furthermore, Welch demonstrates that it is possible for underpriced offerings to fail and overpriced ones to succeed.

The basic idea is that subscription to an IPO takes place in stages. This means later investors can learn from the earlier investors. Initial sales success implies that the early investors had a favorable view of the new shares, giving impetus to later investors to invest. With sufficiently strong initial demand, the information conveyed by the initial subscribers may be so strong that later investors may prefer to disregard their *own* information and subscribe to the issue. This is what Welch calls the “cascade effect,” and it can guarantee success if initial investors can be enticed to buy.

By the same token, if initial investors abstain, later investors may stay away as well, even if their own information is favorable. The issue then fails. Thus, there

²⁶Ivo Welch, “Sequential Sales, Learning and Cascades,” *Journal of Finance*, June 1992, pp. 695–732.

are both negative and positive cascades. Underpricing an IPO is a way to influence early investors to subscribe and increase the probability of success (positive cascade). In the case of the Broadcast.com IPO discussed earlier in this chapter, there was a huge positive cascade.

4. Litigation Risk, Reputation, and Underpricing

Patricia Hughes and Anjan Thakor theoretically showed that there are plausible circumstances in which it is optimal for the investment banker *and* the issuer to underprice because of litigation risk and/or reputational concerns.²⁷

The basic idea is that investors can sue the underwriting investment bank and the issuer for misrepresentation if the after-market price falls below the IPO price *and* the post-issue operating financial performance of the firm is below expectations. Such litigation is costly, not only for the obvious legal reasons, but also because it can damage the investment bank's reputation as well as that of the issuer. Underpricing is designed to reduce the probability of an after-market price decline and hence diminish litigation and reputational risks. After all, it is difficult for investors to sue if they make money on a deal. What is interesting is that the extent of these risks — and thus the extent of underpricing — depends on the reputation of the price setter prior to the issue. The better this reputation, the lower these risks. Since investment bankers can be expected to have better reputations than issuers for pricing issues “correctly,” an important prediction of the model is that there will be *more* underpricing if the issuer sells stock directly without using an investment banker than if a banker is used. Thus, Jerry probably underpriced less using Alex Butler than he would have if he had tried directly selling to the public on his own.

5. The IPO as a Branding Event

In the 1990s, IPO underpricing appeared to have been used to gain media publicity for young companies that saw such publicity generating benefits for their future product or service sales.²⁸ The Internet IPOs seem to be a good example. Unlike the previous hot IPO sectors like Biotech, where start-up companies tried to raise all the capital they needed, many Internet companies seem to view

²⁷Patricia Huges and Anjan V. Thakor, “Litigation Risk, Intermediation and the Underpricing of Initial Public Offerings,” *Review of Financial Studies* 5-4, 1992, pp. 709–742.

²⁸In fact, many Internet IPOs quickly follow up a successful IPO with another round of financing.

the amount of money raised as no more important than being the center of a media buzz.

For example, in the summer of 1998, Broadcast.com told its bankers it would rather stick with an offering price of \$18 a share, even though it was apparent it could get a higher price. The *Wall Street Journal*, January 19, 1999, reported,

We could have had \$35 a share,” says Chief Executive Todd Wagner. But Broadcast.com ‘viewed the IPO as a branding event’. A soaring first-day stock “was a way to launch our name.”

It worked for Globe.com as well. Its spectacular opening won a mention in publications as far afield from Wall Street as *Sports Illustrated* and helped the company attract dozens of advertisers. “We’re not one of the random Internet companies any more,” exults Mr. Paternot.

Adds the chairman, Mr. Egan: “If I left a few million dollars on the table, so what? The IPO is about getting investment money, but in the case of the Internet, it’s also a case of getting a public persona. We wanted to make sure we had a home run, not a double.”

6. Flipping, Spinning, and Recent IPO Developments

IPO underpricing has been viewed by many people as a way for investment banks underwriting IPOs to curry favor with preferred clients or potential clients. It is difficult for retail investors to buy shares in an IPO. Only those customers who have special relationships with either the underwriter or the retail brokerage houses that receive allotments of shares in the IPO are able to purchase the IPO. By underpricing the IPO, the underwriter is able to “reward” these customers who can turn around and sell their shares at handsome profits. The act of buying shares in an IPO and selling them immediately in the after-market (typically on the first day of trading) is called “flipping,” whereas the practice of giving IPO shares to favored or potential clients in hopes of winning future business is called “spinning.” The SEC has frowned on this practice, particularly if it is seen as a tie-in sales for future bank services, and has forced banks to allocate some IPO shares to all investors.

Recently, on-line trading has begun to be used as a mechanism to achieve two objectives: (i) permit more retail investors to purchase shares in IPOs and (ii) reduce IPO underpricing.

For example, Wilt Capital Corp. is a firm that specializes in online IPOs. It allocates limited shares of other firms’ deals to its own customers on a first-come, first-served basis at the price set by the underwriter. This addresses the goal of broadening retail investors’ participation. But it does little to alleviate underpricing.

Hambrecht & Quist LLC goes a step further. It has started a new company that has started selling IPOs over the Internet. The company uses a “Dutch auction” process both to set the offering price and to distribute stock to individual investors.

The plan, called Open IPO, works as follows. Prior to the IPO, potential investors submit bids for the number of shares they would like to buy and at what price.²⁹ After a few weeks of accepting bids, the IPO offering price is set at the highest price at which all the shares can be sold. Those bidding above the offering price get all of the shares they requested at the offering price. Those bidding at the offering price get a fraction of their orders filled. And those bidding below the offering price get nothing. This is the procedure the major investment banks used in the Google IPO.

The plan has some restrictions. No more than 10% of the shares to a single bidder. And Hambrecht has the right to limit the purchases of anyone who wants to buy more than 1% of the shares.

Before opening the bidding, Hambrecht sets an expected price range for the stock. This is intended to give investors an idea of what the stock might be worth. Hambrecht has promoted this scheme by ridiculing the current system of IPO distribution as the underwriter telling the lay retail investor, “One for me, none for you.”

7. IPOs, Capital Market Development, and the Average Age of Firms Going Public

IPOs are facilitated by growing investor participation in the public capital market since this provides greater liquidity and potentially higher prices.³⁰ Given the significantly higher levels of investor participation in recent years, it is not surprising that IPOs have become more popular. Moreover, as a result of this greater popularity, the average age of firms going public has declined from 40 years in 1960 to about 5 years in 2000.³¹

²⁹They can submit bids as long as they have a brokerage account through W.R. Hambrecht or one of the five small brokerages that have agreed to participate in the process. See Lisa Bransten and Nick Wingfield, “Hambrecht Goes Online for IPOs,” *Wall Street Journal*, February 8, 1999.

³⁰It has been shown that greater investor participation leads to potentially higher stock prices. See Arnoud Boot, Radhakrishnan Gopalan and Anjan Thakor, “The Entrepreneur’s Choice Between Private and Public Ownership,” *Journal of Finance* 61-2, April 2006, pp. 803-8836.

³¹See Jason Fink, Kristin Fink, Gustavo Grullon and James Weston, “IPO Vintage and the Rise of Idiosyncratic Risk”, working paper, Rice University, November, 2004.