

Appendix 6.3.1 Company Valuation Example

This appendix uses data from the fictitious company in 6.1 Operating Plan & Financial Model. A summary of important company financial characteristics is shown in Table 6.3.1-1.

Table 6.3.1-1 – Company financial highlights (\$ in millions).

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Financing Required	\$3.00	\$12.00		\$27.00			
Revenue			\$0.05	\$0.91	\$7.63	\$22.09	\$43.18
Earnings Before Taxes	(\$1.71)	(\$3.54)	(\$6.44)	(\$9.47)	(\$8.21)	(\$3.84)	\$3.19

Steps for Valuing the Company

1. Determine an appropriate exit value – Assuming that the likely exit strategy is acquisition by a larger company, a common way to value a company is by revenue and earnings multiples. Revenue multiples for high-growth medical device companies in the recent marketplace have been between 4x and 9x of sales. The SDC Platinum database by Thomson Financial is the authoritative source on merger and acquisition transactions and these multiples can be calculated from it. Using these revenue multiples yields an exit value between \$172 million and \$388 million (calculated by multiplying year 7 revenue by the exit multiple of 4 to 9). The remainder of this example assumes an exit value of \$259 million.

2. Understand necessary returns for investors and market norms – Early-stage investors' expected returns will depend on the risk they associate with the project. These expectations will also vary based on market conditions and other factors in the external environment. Traditionally, if the project is considered higher-risk than even most medical device start-ups, investors may look for a 70 percent annual rate of return. For a seven-year investment, this would be a 41x return (calculated by taking 1.7, the annual return, and raising it to the 7th power, the number of years, to get $1.7^7=41$). Later rounds of funding will dilute the ownership of earlier-stage investors, so investors will attempt to calculate the dilution from future financings when determining what percent of the company they should own. Investors will also gauge similar transactions to find realistic pre-money valuations for the company. All of these factors can be taken into account to develop a potential capital table, as shown in Figure 6.3.1-2.

Table 6.3.1-2 – A summary of potential returns (\$ in millions).

	Year	Investment	Pre-Money Valuation	Post-Money Valuation	% of Shares Acquired by Investors Each Round	Target IRR for Investors	Target Return Multiple	Years to Exit
Series A	1	\$3.00	\$3.31	\$6.31	48%	70%	41x	7
Series B	2	\$12.00	\$10.75	\$22.75	53%	50%	11x	6
Series C	4	\$27.00	\$40.44	\$67.44	40%	40%	4x	4
Acquisition	7			\$259				

Investors in series A may realize that later investors may not value the pre-money worth of the company as high as \$10.75 million and \$40.44 million in series B and series C, respectively. For example, if series B investors use a 60 percent discount, the series B pre-money valuation will be \$3.44, representing a significant loss of value. Alternative valuation models can be developed to stress test the effect of such assumptions.

Table 6.3.1-3 shows how the ownership shares of the various investors, as well as the founders and management team, changes over time.

Table 6.3.1-3 – Ownership projections over time (\$ in millions).

	Pre-Money	Post-Money	Investor One Investment	Investor One Ownership	Investor Two Investment	Investor Two Ownership	Investor Three Investment	Investor Three Ownership	Founder & Mgmt Ownership
Start-Up									100%
Series A	\$3.00	\$6.31	\$3.00	48%					52%
Series B	\$10.75	\$22.75		22%	\$12.00	53%			25%
Series C	\$40.44	\$67.44		13%		32%	\$27	40%	15%
Acquisition	\$259	\$259		13%		32%		40%	15%
Value after Acquisition			\$34.87		\$81.96		\$103.72		
Multiple on Investment			11.6		6.8		3.84		ā

Note: This is a fairly realistic example for a successful venture in terms of returns for investors and the percentage of ownership retained by the founders and management team. With a typical stock option pool size ranging between 5-10 percent of the company's equity, in this example the founders will have retained 5-10 percent of the company at the end.