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Global Communications Solutions Case Study

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Global Communications Solutions, Inc., a closely held and family controlled communications company, was founded in 1925 by Major Sid White to provide Communications equipment to the shipping industry in the United States. The current thirty shareholders are Mr. White's direct descendants or trusts that hold shares for descendants. The executive management is also comprised mostly of members of the third generation in the White family—the third generation to run the enterprise. In the early days, Global Communications Solutions was not profitable, incurring net losses for several years and forcing additional capital contributions by the founders, but the Company managed to begin generating stable earnings after winning several contracts from the military during World War II, as a result of Major White's contacts within the Congress and the Department of Defense. Since then, the enterprise has matured, with revenues of over $75 million and net income before taxes of $8 million, and now provides a stable income stream, allowing for reinvestment into the Company and distributions to the shareholders. The current generation of executive management conducts an annual assessment of the Company's performance and places great emphasis upon the Return on Equity ratio. Recall that Return on Equity is calculated as follows:

Return on Equity = Net Income/Total Common Equity

Based on this formula, Global Communications Solutions' Return on Equity for the most recent fiscal year ended December 31 is calculated in the following table using the accounting book value as the measure of equity. Net income is after tax (Global Communications Solutions is organized as a C-corporation and is taxed as such), based on a 40% combined federal and state corporate tax rate, and adjusted to remove any discretionary expenses of the owners/executive management.

TABLE 1 **Return on Equity Calculation** **Book Values as of December 31**	
Total Common Equity	$12,000,000
Net Income After Tax	$ 4,800,000
Return on Equity	**40.0%**

Net income may be defined by accountants as the difference between revenues and expenses. When revenues exceed total expenses, the company generates a net income (profit) which is added to the firm's book value as retained earnings. When revenues are less than the firm's total expenses, the company experiences a deficit or a net loss, which detracts from the firm's book value as negative retained earnings. Net income, however, does not reflect the actual cash flow to the firm or to the equity holders, as the calculation of net income includes noncash expense such as depreciation and amortization, does not include cash outlays for capital expenditures or investments in working capital, and does not consider financing decisions such as debt repayment of principal or increased borrowing. The inclusion of noncash charges as expenses serves to understate the actual cash earnings of the enterprise, but provides a useful tax incentive for business owners to reinvest in depreciable assets. The exclusion of capital expenditures, investments in working capital, and principal repayments serves to overstate the true cash earnings accruing to the owners of the company.

The above deficiencies of net income as a measure of benefits that accrue to the shareholders of a firm often necessitate another measure that provides the owners of the enterprise with a useful metric for assessing financial performance and value creation. Shareholders, then, should look to a measure that incorporates the impact of capital expenditures, investments in working capital, and changes in financing to provide a more appropriate measure of cash flow. Net cash flow to equity, as calculated in the following table, serves this purpose.

TABLE 2 **Calculation of** **Net Cash Flow to Equity**
Net Income After Taxes
+ Depreciation & Amortization
+ Deferred Taxes
- Capital Expenditures
- Changes in Working Capital
+ Net Changes in Long-Term Debt
= Net Cash Flow to Equity

These factors and their impact upon the net income may result in a significantly different return on equity. The following table illustrates how the calculation of Return

on Equity, using net cash flow to equity, differs from the calculation using net income, assuming the same book value of equity.

TABLE 3 **Calculation of Net Cash Flow to Equity & Return on Equity**	
Net Income After Taxes	$ 4,800,000
+ Depreciation & Amortization	$ 300,000
+ Deferred Taxes	$ -
- Capital Expenditures	$ 500,000
- Changes in Working Capital	$ 100,000
+ Net Changes in Long-Term Debt	$ (300,000)
= Net Cash Flow to Equity	**$4,200,000**
Total Common Equity	$ 12,000,000
Return on Equity	**35.0%**

In dollar terms, there is a significant difference in the numerator of the Return on Equity ratio when using the net income after tax measure and the net cash flow to equity measure. As a result, Return on Equity drops from 40% (using net income after tax) to 35% (using net cash flow to equity). The latter is likely a more accurate measure of the actual return on equity to the shareholders. However, this calculation still uses the accounting book value of the firm's total common equity as the denominator in the equation. A yet more accurate calculation of Return on Equity utilizes the net cash flow to equity as the numerator and the estimated market value of equity as the denominator. In the case of publicly traded companies, the market value of the company's equity is readily available based on the market price of the shares traded on an open exchange. Determining the estimated market value of equity of a closely held or family controlled firm requires the skills of a qualified business appraiser or financial analyst, whose valuation process examines a number of factors relevant to the company.

As a simple example, suppose that the analyst decides to utilize an equity model under a single period capitalization method to determine the market value of Global Communications Solutions' equity. Having already determined the net cash flow to equity, the analyst must develop a discount rate and capitalization rate applicable to net cash flow to equity. This is accomplished through a build-up process that adds premia for equity risk, size, and specific company risk characteristics to the risk-free rate of Treasury securities[i]. The following table illustrates the calculation of the cost of equity capital for Global Communications Solutions. The capitalization rate is calculated by subtracting the estimated long-term sustainable growth rate of the firm's net cash flow to equity from the cost of equity capital. For Global Communications Solutions, the long-term sustainable growth rate of net cash flow to equity is estimated at 5%.

TABLE 4 **Global Communications Solutions**

Cost of Equity Capital Calculation	
Risk Free Rate	4.8%
Equity Risk Premium	7.2%
Size Premium	9.2%
Specific Company Risk Premium	5.0%
Cost of Equity Capital	**26.2%**
Less Long-term Sustainable Growth	5.0%
Capitalization Rate	**21.2%**

As a result, the following table provides the estimated fair market value of the company's equity, obtained by dividing the net cash flow to equity by the capitalization rate. As the data used to develop the cost of equity capital rate and capitalization rate were derived from publicly traded companies' data that possess a much higher degree of marketability than a closely held and family controlled firm, a lack of marketability discount is necessary to provide a fair market value of equity indication. Based on a factor analysis and consideration of numerous studies, a reasonable lack of marketability for this example may be 25%.

TABLE 5 **Global Communications Solutions** **Equity Value Calculation**	
Net Cash Flow to Equity	$ 4,200,000
Capitalization Rate	21.2%
Estimated Value of Equity	$ 19,811,321
Less Marketability Discount of 25%	$ (4,952,830)
Estimated Fair Market Value of Equity (rounded)	**$ 14,858,000**

Based on this, Global Communications Solutions' modified return on equity may be calculated based on the following formula:

Modified Return on Equity = Net Cash Flow to Equity/Fair Market Value of Equity

Global Communications Solutions' modified return on equity is calculated in the following table.

TABLE 6 **Global Communications Solutions** **Modified Return on Equity Calculation**	
Net Cash Flow to Equity	$ 4,200,000
Fair Market Value of Equity	$14,858,000
Modified Return on Equity	28.3%

Based on the fair market value equity estimate for Global Communications Solutions' equity, the modified return on equity of the enterprise falls from 35% to roughly 28%. The owners and executive management may be surprised to find that their performance is quite different from the performance indications when using accounting net income and book value of equity to calculate return on equity.

However, the modified return on equity calculation does not provide an indication of the value or wealth created by the executive management of Global Communications Solutions. To assess the value or wealth creation capabilities of the executive management, an annual valuation of the firm conducted by an independent appraiser or analyst would be necessary to determine the fair market value indication of the firm's equity. Changes in the fair market value of the equity each year would provide an indication of the value or wealth creation or destruction by the executive management[ii]. The following table provides calculations for the estimated fair market value of Global Communications Solutions' equity for a ten year period. The calculations assume a 5% annual growth in net cash flow to equity.

TABLE 7
Global Communications Solutions
Value Creation Calculation

Year	Net Cash Flow to Equity	Capitalization Rate	Equity Value	Marketability Discount (25%)	Fair Market Value of Equity	Wealth Created
1	$4,200,000	21.2%	$19,811,000	($4,953,000)	$14,858,000	
2	$4,410,000	21.2%	$20,802,000	($5,201,000)	$15,601,000	$743,000
3	$4,631,000	21.2%	$21,844,000	($5,461,000)	$16,383,000	$782,000
4	$4,862,000	21.2%	$22,934,000	($5,734,000)	$17,200,000	$817,000
5	$5,105,000	21.2%	$24,080,000	($6,020,000)	$18,060,000	$860,000
6	$5,360,000	21.2%	$25,283,000	($6,321,000)	$18,962,000	$902,000
7	$5,628,000	21.2%	$26,547,000	($6,637,000)	$19,910,000	$948,000
8	$5,910,000	21.2%	$27,877,000	($6,969,000)	$20,908,000	$998,000
9	$6,205,000	21.2%	$29,269,000	($7,317,000)	$21,952,000	$1,044,000
10	$6,516,000	21.2%	$30,736,000	($7,684,000)	$23,052,000	$1,100,000

This analysis of wealth creation is an integral part of the overall investment decision making process. Should a transgenerational enterprise enter a period of continued wealth destruction due to competitive changes in the industry that is unlikely to be reversed, the owners and management of the firm would likely begin considering options for exiting that investment and investing the proceeds in an investment that offers a higher rate of return for a comparable level of risk. Or, should a transgenerational enterprise experience rates of return that are unacceptable for the level of risk (the investment does not fall on the efficient frontier), the owners may consider shifting their investment to another asset class that provides a higher level of return for the same level of risk associated with the closely held or family controlled enterprise.

[i] Ibbotson Associates provides data on the equity risk premium and size premium, which are derived from publicly traded company data. The estimation of the Specific Company Risk Premium is based on factors specific to the company and may be based on the analyst's informed judgment or a quantitative analysis such as that developed by Highland Global.

[ii] The value added or destroyed (wealth created or destroyed) by management would be calculated by the following equation:

Wealth Created = Fair Market Value of Equity $_{year\ x+1}$ – Fair Market Value of Equity $_{year\ x}$