

Absolute Valuation: Economic Profit/EVA

Objective: The objective of this assignment is to help reinforce the concept of Economic Profit otherwise known as Economic Value Added (EVA). More specifically, this exercise is designed to have you learn how to:

- Calculate NOPAT, Operating Capital, EVA, and MVA (Market Value Added)
- Partition the EVA and use this partition in analyzing the firm
- Perform discounted cash flow analysis using EVA

Prior to doing this assignment, please read the Economic Profit chapters (Chapters 8 – 12) in the Copeland, Kotler, and Murrin, *Valuation: Measuring and Managing The Value of Companies*.

Company: Sprint (Ticker: FON, <http://www.sprint.com/>) is trying to “sprint” to keep up with an always-changing telecom race by buying wireless carrier Nextel Communications. Sprint, the #1 non-Bell local phone company in the US, is a global integrated communications provider serving more than 26 million customers in over 100 countries. With more than \$27 billion in annual revenues in 2004, Sprint is widely recognized for developing, engineering and deploying state-of-the-art network technologies, including the United States' first nationwide all-digital, fiber-optic network and an award-winning Tier 1 Internet backbone. Sprint provides local communications services in 39 states and the District of Columbia and operates the largest 100-percent digital, nationwide PCS wireless network in the United States.



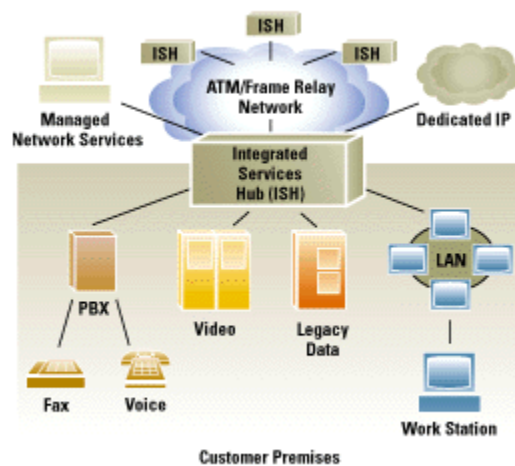
On December 20, 2004, announced updated 2004 financial guidance and provided a preliminary financial forecast for 2005¹. Sprint expects full-year consolidated 2005 revenues to grow at a low single-digit percentage rate, reflecting strong growth in wireless, steady performance in local and continuing top-line pressures in long distance. Sprint expects full-year Adjusted EBITDA² to be in a range of \$8.5 billion to \$8.7 billion with annual growth being driven by wireless. Sprint expects full-year overall capital spending to be \$4.0 billion to \$4.2 billion. Roughly two-thirds of the capital investment will be directed at wireless. This guidance does not consider any impacts of the announced merger with Nextel and proposed spin-off of the local business. The merger is currently expected to close in the second half of 2005.

¹http://www2.sprint.com/mr/news_dtl.do?id=5140

²Adjusted EBITDA is defined as operating income plus depreciation and special items. This non-GAAP measure should be used in addition to, but not as a substitute for, the analysis provided in the statement of cash flows.

Competitors: Alltel (AT), BellSouth (BLS), SBC Communications (SBC) and Verizon Communications (VZ).

Assignment: Download the Sprint spreadsheet from my website and do all your work on this spreadsheet. This is an *individual* assignment. Although you can discuss this case with your classmates, you are responsible for doing the case yourself. Students caught cheating will be given an F on this assignment. In doing this assignment, please use the assumptions given on the next page. The assignment/questions can be found after the assumptions.



Assumptions to Use in Calculations:

Item	Assumption
NA	Assume that NA is equal to zero. See the preceding comment for the case of Depreciation and Amortization.
Growth rate in sales	<p>According to http://finance.yahoo.com/q/ae?s=FON Analyst sales growth estimates for Sprint is expected to be 2.7% for 2006. As such, we assume that Sprint grows their sales at 2.7% per year for the next 5 years (from 2005 through 2009). This is consistent with Sprint's announcement on December 20, 2004, that it "expects full-year consolidated 2005 revenues to grow at a low single-digit percentage rate". In the stable growth period (year 11), sales are assumed to grow at a constant rate of 3.5% per year which is the average per year sales growth for its closest competitors (see "Sales Grwth (FON)" worksheet). Between year 6 through year 10, sales will increase in equal increments such that they equal 3.5% in year 11. For example, in year 6, sales growth will equal the following:</p> $g(\text{Sales})_{\text{Year}6} = .0270 + (.035 - .027)/6 = .0283$ $g(\text{Sales})_{\text{Year}7} = .0283 + (.035 - .027)/6 = .0297$ <p>where 6 = number of periods remaining after year 5.</p>
Sales/Beginning Capital (BC) via Operating Approach	Based on historical performance, assume that FON continues to have a sales-to-beginning capital ratio of .7 for the next 5 years (up to and including year 2009) and then it will have a Sales/BC = .65 in the stable growth period.
Cost of Goods Sold (COGS)	Cost of Goods Sold <i>includes</i> Depreciation and Amortization IF there is an "NA" for Depreciation and Amortization in the income statement. If this is the case, subtract out Depreciation and Amortization from COGS.
COGS (exclu. Depreciation & Amortization)/ Sales	<p>Based on historical performance, assume that FON continues to have a COGS/Sales ratio of .46 for the first 5 years and a COGS/Sales ratio of .37 in the stable growth period (year 11). Between year 6 through year 10, COGS/Sales will decrease in equal increments such that they equal .37 in year 11. Rationale: We assume that Sprints COGS/Sale ratio will revert to the mean (or average) of its peer group in the long run. This is known as mean reversion. The logic process for calculating equal increments is similar to that for Growth rate in sales.</p> $\text{COGS}/\text{Sales}_6 = .46 \text{ and } \text{COGS}/\text{Sales}_{11} = .37$ $\text{COGS}/\text{Sales}_6 = \text{COGS}/\text{Sales}_5 + (\text{COGSs}/\text{Sales}_{11} - \text{COGS}/\text{Sales}_5)/6$ $= .46 + (.37 - .46)/6 = .445$ $\text{COGS}/\text{Sales}_7 = \text{COGS}/\text{Sales}_6 + (\text{COGSs}/\text{Sales}_{11} - \text{COGS}/\text{Sales}_5)/6$ $= .445 + (.37 - .46)/6 = .43$

Item	Assumption
(SGA + R&D Expenses)/ Sales	Based on historical performance, assume that FON's SGA (including R&D)/Sales = .24 for the next 5 years. At the end of year 11, SGA (including R&D)/Sales = .26 which is approximately the ratio for Sprint's peer group (see "5. Margin Analysis" worksheet). Between year 6 through year 10, SGA (including R&D)/Sales is assumed to decrease in equal increments such that they equal .66 in year 11. Note: As in the case of COGs/Sales, we assume that Sprint's (SGA + R&D)/Sales ratio is mean reverting.
Depreciation & Amortization	Use the Depreciation & Amortization number given in the income statement. If there is a NA, use the Depreciation and Amortization number given in the Statement of Cash Flows.
Depreciation & Amortization /Sales	Assume that this ratio is .17 based on historical performance for the first 5 years of the forecast period ³ and is .19 in the stable growth period (year 11). Between year 6 through year 10, this ratio is assumed to decrease in equal increments such that it is equal to .19 in year 11.
Accounting Adjustments/ Sales	Based on historical performance, assume that (Goodwill Amortization + Implied Interest on Operating Leases + Change in LIFO Reserves)/ Sales = .015 over the entire forecast period.
Cash Operating Taxes/ Adjusted Operating Profit	Since this adjusted tax rate varies so much for FON, we will assume that the tax rate is approximately .125 and that it remains constant over the period from 2005 through 2015. This is the tax rate for the Telecom Services Industry as a whole. See "Industry EVA" worksheet for Telecom Services.
Beta	Assume that the beta for the first 5 years of the forecast period is the imputed levered beta for FON that you calculated in the "4. EVA Calc (Sprint)" worksheet. The beta is assumed to mean revert (in a linear fashion) to the beta of the market ($\beta_{\text{Market}} = 1$) in the stable growth period. For example, $\beta_{\text{Year 6}} = \beta_{\text{Year 5}} + (1 - \beta_{\text{Year 5}})/6$
EVA multiple	The EVA multiple for Sprint is assumed to equal the $1/(\text{ROIC} - \text{WACC})$ for Sprint's peer group (ROIC-WACC = Spread is located in cell B142 in the "3. EVA Calc (Peers)" worksheet. In calculating the terminal value, be sure to apply the multiple to anticipated EVA (EVA_{T+1})

³Technically speaking, we should use the ratio of depreciation to Capital Expenditures (CapEx) and the ratio of CapEx to Sales in calculating Depreciation.

Item	Assumption
Risk free Rate	Assume that the rate on a 10-year Treasury bond remains constant at 4.27% (to calculate the Value of Sprint using EVA)
Risk Premium	Assume that it is .05. As an aside, Bennet Stewart in his book "Quest for Value" uses 6%.
After-tax Cost of Debt	For the valuation based on EVA, assume that the after-tax cost of debt remains constant based on the rate you calculated for 12/31/2004 in the worksheet labeled 3. EVA Calc (Sprint) .
Weights for Debt and Equity	Assume that the market value weights for debt and equity that you calculated in the worksheet labeled 3. EVA Calc (Sprint) remain constant for the first 5 years of the forecast period at their 12/31/2004 level. In the stable growth period (year 11), the market value weights for debt and equity are assumed to equal those calculated in cell B131 for debt and cell B133 for equity of the "3. EVA Calc (Peers)" worksheet. Note: The weights in the stable growth period are based on Sprint's closest competitors (peer group). Assume mean reversion exists.
Present Value of Operating Leases	Use the before-tax cost of debt associated with the firm's bond rating for a particular year as the discount rate. Reason: operating lease payments represent before-tax cash flows to debtholders. Several examples are given in the worksheet labeled Operating Leases.
Absolute Value	Use the =abs() function in Excel in calculating the absolute value
Intangibles	The line item labeled INTANGIBLES in the balance sheet includes Goodwill and is on a NET basis. To obtain the breakout, which I have provided to you. I had to painstakingly go through the various 10Ks for each company over several years to obtain these and other supplementary data numbers.
Goodwill	In July 2001, the FASB issued SFAS No. 142, Goodwill and Intangible Assets. SFAS No. 142 provides guidance on how to account for goodwill and intangible assets after the acquisition is complete. The most substantive change represented by this statement is that goodwill is no longer amortized; instead, it is tested for impairment at least annually or more frequently if events or changes in circumstances indicate that the asset might be impaired. The statement applies to existing goodwill and intangible assets, effective for fiscal years beginning after December 15, 2001.
Other Assumptions	Assume that the tax rate was 32% for Sprint in 2002 in completing the "4. EVA Calc (Sprint)" worksheet. In completing the "3. EVA Calc (Peers)" worksheet, if the tax rate is negative for a given year, take the average of the tax rates for the other two years and use this as the tax rate

Assignment:

1. Present Value and Imputed Interest of Operating Leases (10 points): Using the worksheet labeled “1. Imputed Int (OpLeases)”, calculate the present value and imputed interest for each year for Sprint and also Sprint’s competitors a.k.a. peer group using the approximate pre-tax cost of debt for each company. The pre-tax cost of debt changes each year not only due to changes in the interest rate but also due to changes (if any) in the bond rating. Since bond yields in the “Bond Yields” worksheet are not stated in terms of + or - e.g. only AA exists, not AA+ or AA- we use the bond yield that is the closest to our firm’s bond rating. In calculating the number of years remaining on the operating lease, we will assume that this is equal to the Thereafter number divided by the dollar amount associated with the last operating lease. For example, suppose that you have the operating lease amount for years 2001 through 2005 (23500, 15700, 7000, 3600, and 2900) and then the Thereafter amount is \$5100. Then the number of years remaining on the operating lease after year 2005 is $\$5100/\$2900 = 2$ years. Thus, the leases go through year 2007. Use the $=\text{ROUND}(\text{xxx}/\text{zzz},0)$ function to round to the nearest integer where xxx is the cell containing the Thereafter amount and zzz is the cell containing the operating lease amount.

2. Total Enterprise Value (TEV) and Levered Beta (8 points): Calculate the appropriate total enterprise values and the weighted average cost of debt based on year 2002’s 10K for the various telecommunication firms using the “2. Firm Values & Rates” worksheet. In addition to this, calculate the average levered beta and average debt to equity ratio for each year. This is an intermediate step which we will use as an input in the “3. EVA Calc (Peers)” and “4. EVA Calc (Sprint)” worksheets.

3. Calculating EVA and MVA (15 points): Using the information on financial statements, operating leases, and risk factors as well as bond yields provided and your answer to question 1, calculate the

- a. Net Operating Profit (NOPAT)
- b. Cash Operating Taxes
- c. Capital via the Financing Approach
- d. Capital via the Operating Approach
- e. Market Value of Capital
- f. After-tax WACC based on market value weights
- g. Return on Capital
- h. Economic Profit (Economic Value Added (EVA))
- i. Market Value Added (MVA)

using the EVA Templates, **3. EVA Calc (Peers)** and **4. EVA Calc (Sprint)**. The area to be completed is highlighted in **yellow**. Note: There is a line item in each firm’s income statement called Income Before Depreciation and Amortization (INC BEF DEP & AMORT). This may or may not be equivalent to EBITDA. The reason is that the Depreciation and Amortization is sometimes included in the Cost of Goods Sold. Please see the assumptions above.

4. Footnotes in the 10Ks (2 points): To make sure that you understand where the LIFO Reserves, Accumulated Goodwill Amortization, Deferred Income Taxes, and Implied Interest on Operating Leases are found in the 10K, print out the appropriate pages from Sprint's 10K and **highlight the relevant numbers in yellow**. One source of 10K reports is <http://edgarscan.pwcglobal.com/servlets/edgarscan>. Other sources of 10K reports are listed in http://www.nyu.edu/library/bobst/vbl/candf_info.html.

5. Margin Analysis and Partitioning the EVA (10 points): Complete the **highlighted** sections of the worksheet labeled "5. Margin Analysis". Next, using your completed percent of sales worksheet, complete the **highlighted** sections of the next worksheet labeled "6. EVA Partition". Discuss how effective Sprint's management is at controlling their operating expenses relative to their main competitors. Is Sprint's management doing a better or worse job over time? Besides this, discuss how well Sprint manages their assets (balance sheet) relative to their peer group e.g. \$1 of assets (various asset components) generates how many dollars in sales? To what extent do differences in accounting affect profit at the firm level (EBIT) for Sprint relative to their peers?

6. Obtaining Justified Firm Value and Shareholder Value Using EVA (50 points): Calculate the justified value of the firm and the justified value of the equity for Sprint by completing the **highlighted** sections of the worksheet labeled "7. Sprint Value (%Sales)". Your cash flows should be in **millions** of dollars (Note: the financial statements are in thousands of dollars). The necessary assumptions regarding growth, risk, etc., are given in the **Assumption** section above.

a. Based on June 24, 2005 as your date of valuation and the price on that date, should you buy, sell, or hold Sprint? Please note that our valuation does not consider any impacts of the announced merger with Nextel and proposed spin-off of the local business since the sales growth guidance that Sprint announced did not consider the Nextel merger and our margin analysis reflects the recent past (pre-merger). Also, the merger is currently expected to close in the second half of 2005.

b. What proportion of the justified value of the firm is based on future growth potential (and understated book value)? What portion of Sprint's value is due to its existing asset base inclusive of excess cash and the value of non-operating assets? (Hint: the sum of the present value of the EVAs is equal to MVA. Think of how MVA is related to the value of the firm).

c. Using the Data Table command in Excel, complete the sensitivity table of prices at various levels of expected growth in sales and for various levels of the EVA multiple.

7. Buying the Assumptions that Create the Price (5 points): Make a copy of your completed "7. Sprint Value (%Sales)" worksheet by right-clicking on the worksheet and selecting the **Move or Copy ...** option. Next, scroll down and highlight the worksheet that you wish to copy and then click on the box located in the lower left hand corner entitled **Create a copy**. Using the Solver algorithm located in the **Tools** submenu, **Set**

Target cell: \$69 (this is the justified price that you calculate) **Equal to** the analysts target price of 27 **By Changing Cells:** \$2. What is the near term growth rate in sales that is embedded in analysts' target price for Sprint?

Please turn in a hard copy of the spreadsheet. Once again, this is an **INDIVIDUAL** assignment.