Sprint Nextel 2007
Fair Value and Impairment

Both Sprint and Nextel started business on the competitive fringes of the telecommunications industry. Until 1984, the phone business was dominated by the AT&T monopoly that stretched back to the time of Alexander Graham Bell. When founded in 1987, Nextel was originally called "Fleetcall" because it utilized wireless frequencies that had historically been used by taxi dispatchers. Sprint was formed from the combination of several companies including a local telephone company, founded in 1899, that had competed against AT&T in its monopoly days as well as a company that made wireless transmissions using the track right-of-way communication system of the Southern Pacific Railroad. Sprint and Nextel were formally united on August 12, 2005.

From a technology standpoint, the Sprint-Nextel merger presented a serious challenge. There are three common digital wireless technologies used around the world: GSM, CDMA, and iDEN. These different technologies vary based on, among other things, how they deal with the technical challenge of transmitting several calls at once. GSM (which was developed in Europe; the "GSM" stands for Groupe Spécial Mobile) is by far the most common mobile phone technology used worldwide. In the United States, GSM is used by AT&T and T-Mobile. CDMA (which stands for code division multiple access) is used in the United States by Verizon and, historically, by Sprint. iDEN (integrated digital enhanced network) was developed by Motorola and has been used for years by Nextel. These three technologies are mutually incompatible, so a cellular phone built to use CDMA doesn't work with a network designed around iDEN. Thus, when Sprint and Nextel merged, a huge issue was how to get the CDMA and iDEN systems of the two companies to work together. As of early 2008, Sprint Nextel was still using both technologies which the company described in its 2007 10-K filing as a continuing risk, as follows: "Our wireless networks provide services utilizing CDMA and iDEN technologies. Wireless subscribers served by these two technologies represent a smaller portion of global wireless subscribers than the subscribers served by wireless networks that utilize GSM technology. As a result, our costs with respect to both CDMA and iDEN network equipment and handsets may continue to be higher than the comparable costs incurred by our competitors who use GSM technology, which places us at a competitive disadvantage."

The Sprint-Nextel merger also presented organizational behavior challenges. Sprint's management approach was described as "bureaucratic" in contrast to the "aggressive, entrepreneurial" approach of Nextel.[1] Many joint meetings "ended with Nextel employees storming out, leaving the Sprint side baffled. Sprint people thought Nextel made reckless decisions and spent money impulsively. Nextel people felt stifled by Sprint's process-oriented pace."

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[1] Kim Hart, "No Cultural Merger at Sprint Nextel," *Washington Post*, November 24, 2007, page D01.

During 2007, it became apparent that the honeymoon was over at Sprint Nextel. Signs of distress included the following.

- Operating income in each quarter in 2007 was down compared to the same quarter in 2006. For the first three quarters, the total decrease was 63%.
- Average revenue per user (ARPU) declined during each quarter in 2007 compared to the same quarter in 2006. Sprint Nextel explained the decline as follows: “The decline in our average monthly voice revenue is primarily due to the loss of subscribers with higher priced service plans, while new subscribers and the subscribers acquired from the PCS Affiliates have lower priced service plans.”
- The market value of the company, which had held steady at about $55 billion during the first three quarters of 2007, began on a long slide in the fourth quarter, dropping to $44 billion by the end of November and $37 billion by the end of the year.

This financial distress triggered a careful impairment analysis. This analysis included consideration of the recoverability of the cost of long-lived assets, both tangible and intangible, as well as an assessment of potential impairment of goodwill. The data underlying those analyses is detailed below.

Note: These data are adapted from the 2007 10-K filing of Sprint Nextel; they represent an approximation of the actual data used in the internal impairment analysis conducted by Sprint Nextel.

Impairment Analysis of Property, Plant, and Equipment

As described above, the impairment concerns center on the Wireless segment. Data on the property, plant, and equipment for the Wireless segment as of December 31, 2007 are as follows. (All numbers are in millions.)

Land	$	277
Network equipment		30,764
Buildings and improvements		4,054
Non-network software, office equipment		2,844
Less: Accumulated depreciation		(18,545)
		19,394
Construction in progress		3,488
Property, plant, and equipment, net		22,882

For purposes of an impairment test, Sprint Nextel groups property, plant, and equipment at the lowest organizational level for which the cash flows of the group “are largely independent of the cash flows of other groups of assets and liabilities.” Sprint Nextel has determined that the segment level is the appropriate level at which to conduct this analysis.

Sprint Nextel is involved in an active market for the leasing of "cell and switch sites, real estate, information technology and network equipment and office space." Data from this active leasing market can be used to generate cash flow estimates for the property, plant, and equipment of the Wireless segment. Estimated annual lease payments for the property, plant, and equipment currently being used by in the Wireless segment are as follows.

	Estimated Annual Lease Payment
Land	$ 30
Network equipment	2,840
Buildings and improvements	299
Non-network software, office equipment	437
Construction in progress*	1,073

*This estimated annual lease payment is for a completed asset. Construction in progress is 60% complete.

According to *SFAS No. 144*, par. 18, "the remaining life of an asset group shall be based on the remaining useful life of the primary asset of the group." The primary asset is the depreciable asset "that is the most significant component asset from which the asset group derives its cash-flow-generating capacity." For the property, plant, and equipment of the Wireless segment, this asset is the network equipment which has, on average, a remaining useful life of eight years.

Impairment Analysis of Goodwill

Before any impairment charges, the net book value of the Wireless segment as of December 31, 2007 is $52,808, computed as follows.

Current assets	$ 7,414
Property, plant, and equipment, net	22,882
Intangible assets:	
Goodwill	30,664
FCC Licenses	21,123
Customer relationships, net	4,203
Other definite-lived intangibles	1,835
Other assets	733
Total Wireless assets	88,854
Current liabilities	7,793
Long-term debt	17,521
Deferred tax liabilities	7,438
Other liabilities	3,294
Total Wireless liabilities	36,046
Net book value of Wireless segment	52,808

The total market value of Sprint Nextel at the end of each quarter during 2007 was as follows.

	Market Capitalization (in billions)
January 1, 2007	$ 54.2
March 31, 2007	53.8
June 30, 2007	58.8
September 30, 2007	54.1
December 31, 2007	37.4

All of Sprint Nextel's reported goodwill relates to the Wireless segment. The process used by Sprint Nextel to estimate the fair value of the Wireless segment is described as follows: "We [reduce] our stock price by the estimated value per share of our Wireline reporting unit and then [add] a control premium, as permitted by FASB guidance, to determine an estimate of the equity value of the wireless reporting unit."

One way to estimate the fair value of the Wireline segment is using a market-based approach based on price-to-sales and price-to-EBITDA ratios for publicly-traded companies with similar operations. Data for this analysis are included below.

	Market Capitalization	Operating Revenues	EBITDA*
Qwest	$8.29	$13.73	$4.61
Level 3	4.96	4.31	0.76
Embarq	6.79	6.35	2.67
Windstream	6.00	3.26	1.67
Centurytel	3.80	2.70	1.37
Sprint Nextel Wireline segment	???	6.46	1.07

All numbers are for 2007 and are in billions.

*EBITDA = Earnings before interest, taxes, depreciation, and amortization

The "control premium" mentioned by Sprint Nextel is the additional value, above the value based on reported sales or cash flows, that accrues to an entity that controls a business operation. In this case, the control premium is that additional value from owning, or controlling, the Wireless segment and thus being able to make strategic decisions with respect to the use of the resources of the segment. Estimates in the academic literature place the magnitude of this premium at 5 to 10%.

Sprint Nextel also estimates the fair value of the Wireless segment through an income approach which involves the computation of the present value of an estimate of the cash flows to be generated by the segment. Data used in that analysis are as follows.

For computing weighted-average cost of capital

Risk-free rate (12/31/2007)	4.0%
Equity premium	7.0%
Industry-average Beta	1.55
Interest rate on debt	7.0%

Five-year growth forecast

Annual growth in OIBDA*	13.0%
Annual growth in capital expenditures	10.0%

*OIBDA = Operating income before depreciation and amortization, this is equivalent to after-tax segment earnings

Terminal growth rate (after 5 years)	6.0%
Income tax rate for all years	38.0%

Reported amounts for 2007

Segment earnings	$9,914
Capital expenditures	5,067

Note: Total liabilities for Sprint Nextel as of December 31, 2007 were $42.1 billion.

Estimation of Fair Value of Non-Goodwill Intangible Assets

As part of its Wireless segment goodwill impairment analysis, Sprint Nextel estimated the fair value of its intangible assets which are also associated with the Wireless segment. Data for Sprint Nextel's FCC licenses and customer relationships are given below. Note: For this analysis, assume that book value approximates fair value for the "other definite-lived intangibles" and "other assets" reported for the Wireless segment.

FCC Licenses

Sprint Nextel owns a number of FCC licenses. These licenses are essential to Sprint Nextel. The company wrote the following in its 2007 annual report: "We hold several kinds of FCC licenses to deploy our wireless services: 1.9 GHz personal communications services, or PCS, licenses utilized in our CDMA network, 800 MHz and 900 MHz licenses utilized in our iDEN network and 2.5 GHz licenses that we use for first generation wireless Internet access services. We also hold 2.5 GHz, 1.9 GHz and other FCC licenses that we currently do not utilize in our networks or operations. As long as we act within the requirements and constraints of the regulatory authorities, the renewal and extension of our licenses is reasonably certain at minimal cost. FCC licenses authorize wireless carriers to use radio frequency spectrum. That spectrum is a renewable, reusable resource that does not deplete or exhaust over time. We are not aware of any technology being developed that would render spectrum obsolete. Currently, there are no changes in the competitive or legislative environments that would put in question the future need for spectrum licenses."

One way to estimate the fair value of Sprint Nextel's FCC licenses is the "relief from royalty" approach. This method uses market royalty rates charged for the use of licenses similar to those owned by Sprint Nextel. Using this approach, the fair value of the licenses is the present value of the after-tax royalties that Sprint Nextel is avoiding by owning the licenses.

Of course, a key variable in this analysis is the royalty rate. A search in a proprietary royalty rate database revealed rates ranging from 2% to 8% with an average of 4.2%. The royalty is based on revenue, before the subtraction of any expenses.

Another key variable in the analysis is the average revenue per user, or ARPU. Sprint Nextel reports in its 2007 10-K filing that its ARPU for the fourth quarter of 2007 was $58 per month, down from $63 per month in the fourth quarter of 2005. Because of brisk competition among wireless service providers, Sprint Nextel expects ARPU to continue to decrease.

A summary of the data used in the relief-from-royalty valuation analysis is as follows.

Royalty rate	4.2%
Beginning monthly ARPU	$58
ARPU annual growth rate	-1.0%
Number of customers, 12/31/2007	40,751
Income tax rate	38%
<u>For the next five years:</u>	
Annual growth rate in number of customers	13.0%
Terminal growth rate (after five years)	6.0%

<u>Customer Relationships</u>

As of December 31, 2007, Sprint Nextel had almost 41 million wireless customers. These customers represent an existing base of users that will continue to generate cash flows in the future. Assuming no new customers and normal attrition among these existing customers, the discounted present value of these after-tax cash flows, after removing a reasonable return on other assets employed, represents an estimate of the fair value of the customer relationships as of December 31, 2007.

A key variable in the value of the existing customer relationships is Sprint Nextel’s normal monthly “churn rate” which is the percentage of customers who leave the company in a normal month. In its 2007 10-K filing, Sprint Nextel disclosed that its churn rate in the fourth quarter of 2007 was 2.3%. This rate has been fairly stable for the past three years, ranging from a high of 2.5% in the first quarter of 2005 to a low of 2.0% in the second quarter of 2007.

Another important factor in valuing Sprint Nextel’s wireless customer relationships is the contribution margin associated with wireless revenue. Defining variable cost as the “cost of services and products” reported in Sprint Nextel’s income statement, the overall company contribution margin percentage was 56.4% in 2005, 59.1% in 2006, and 57.2% in 2007. For the valuation analysis, a weighted average of the 2006 and 2007 percentage is used, with the 2007 percentage being given double weight. This weighted average contribution margin percentage is 57.8%.

To isolate the value associated with the customer relationships, it is necessary to subtract an estimate of the income generated by identifiable other assets. These assets include both the reported assets (less goodwill) of the Wireless segment of $58,190 ($88,854 - $30,664) plus the fair value in excess of book value of any of the recorded assets. The rate of the return is the company's weighted average cost of capital.

A summary of the data used in the customer relationship valuation analysis is as follows.

Monthly churn rate	2.3%
Beginning monthly ARPU	$58
ARPU annual growth rate	-1.0%
Variable cost as a percent of revenue	42.2%
Income tax rate	38%

Note: In this customer relationship valuation analysis, the economic life of the relationship is assumed to extend as far into the future as the excess cash flows are positive. With a monthly churn rate of 2.3%, this will probably be three or four years.

Questions

1. Before any impairment writedown, the net recorded amount of Sprint Nextel's Wireless segment property, plant, and equipment as of December 31, 2007 is $22,882. Is the Wireless segment's property, plant, and equipment impaired? If so, what is the amount of any necessary impairment writedown?
2. Before any impairment writedown, the net recorded amount of Sprint Nextel's goodwill as of December 31, 2007 is $30,664. Is Sprint Nextel's goodwill impaired? If so, what is the amount of any necessary impairment writedown?
3. With respect to the Wireless segment's long-lived assets (tangible and intangible) described in the data given above, what *SFAS No. 157* fair value disclosures are necessary for the year ended December 31, 2007?
4. Refer to Question 1. How will your answer change if the discount rate you use is **increased** by 0.5% (50 basis points.)? **Decreased** by 0.5%? Comment.
5. Refer to Question 2. How will your answer change if the discount rate you use is **increased** by 0.5% (50 basis points.)? **Decreased** by 0.5%? Comment.
6. In conducting the goodwill impairment analysis, you used several different valuation techniques.
   - Wireless segment valuation using price-to-sales and price-to-EBITDA data for the Wireline segment
   - Wireless segment valuation using discounted cash flow analysis
   - FCC license valuation using a "relief from royalty" approach
   - Customer relationship valuation using discounted cash flow analysis

Which one of these valuation techniques seems most **reliable** to you? Explain.