



# Principles of Finance

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## Assignment 6

### Instructions

- Assignments should be done in groups of 3 students.
- You should remain with the same group through the entire course.
- Submit on Moodle only one copy of solutions per group.
- For each assignment you can get a maximum of 100 points.
- All assignments turned in late will not be graded (zero points).

### Due date

The due date is indicated on Moodle.

This assignment is based on the Harvard Business School Brief Case Nr 4263 "Valuation of AirThread Connection".

In order to answer the questions below, you will first need to read the case. All the data you need to solve the case are provided in the Exhibits (See the Excel spreadsheet). For this assignment you should hand in two files. First, a separate file (pdf) where you record all your results (tables, graphs, etc) and comments. Second, you should also hand in an Excel spreadsheet with all your calculations. The Excel file is only needed in case we do not understand something you did. The instructions are very precise on what you should do, what results to report, and what questions to answer.

As of December 2007, Robert Zimmerman, a senior VP at American Cable Communication is considering the acquisition of AirThread Connections a cellular provider. Your assignment is to answer the following questions in order to help Mr Zimmerman make a decision.

1. Compute the unlevered Free Cash Flows of AirThread without synergies for the period of 2008 - 2012.

*Hint 1 To compute the working capital use the following formula*

$$\begin{aligned} \text{Working Capital} = & \text{Accounts Receivable} + \text{Inventory} + \text{Prepaid Expenses} \\ & - \text{Accounts payable} - \text{Accrued liability} - \text{Deferred revenue.} \end{aligned}$$

*Hint 2 The formula for ending balance of working capital is*

$$\text{Ending Balance} = \frac{\text{Ratio} \times \text{Base}}{360}.$$

*For exemple the Account Receivable ending balance is computed as:*

$$\text{Ending AR Balance} = 41.67 \times (\text{Total Revenue}) / 360.$$

*Hint 3 The following table links each item of working capital to its corresponding base.*

<i>Item</i>	<i>Base</i>
<i>Accounts Receivables</i>	<i>Total Revenue</i>
<i>Days sales Equipment Revenue</i>	<i>Equipment Revenue</i>
<i>Prepaid Expenses</i>	<i>Total Cash Operating Expenses</i>
<i>Accounts payable</i>	<i>Total Cash Operating Expenses</i>
<i>Accrued Liabilities</i>	<i>Total Cash Operating Expenses</i>
<i>Deferred service</i>	<i>Service revenue</i>

2. Compute the tax shield AirThread will benefit from given the debt repayment schedule indicated in Exhibit 6.
3. Compute the appropriate discount rate for the Free Cash Flows of AirThread for the period 2008 – 2012.

*Hint Use data on comparable firms in Exhibit 7 and assume debt beta is zero.*

4. Compute the terminal value of AirThread in 2012.

*Hint 1 When computing the terminal value in 2012, remember that the leverage ratio is kept constant at industry average.*

*Hint 2 When computing the terminal value in 2012, compute the growth rate of cash flows using the formula in the course.*

*Hint 3 When projecting the balance sheet of AirThread for the period 2008-2012 use:*

$$\begin{aligned} \text{Ending Cash} = & \text{Beginning Cash} + \text{Unlevered Free Cash Flow} \\ & - \text{After tax interest expense} - \text{Principal payments on debt.} \end{aligned}$$

*Hint 4 You can assume that*

- |                          |                                       |
|--------------------------|---------------------------------------|
| – Marketable Securities, | – Investments in Affiliated Entities, |
| – Deferred Taxes,        | – Long Term Note Receivable,          |
| – Other Current Assets,  | – Goodwill,                           |
| – Licences,              | – Other Current Assets,               |
| – Costumer Lists,        |                                       |

*remain constant on the asset side of the balance sheet and that the items*

- |                              |                                |
|------------------------------|--------------------------------|
| – Taxes Payable,             | – Asset Retirement Obligation, |
| – Other Current Liabilities, | – Other Deferred Liabilities,  |
| – Deferred Tax Liability,    | – Minority Interest            |

*remain constant on the liability side of the balance sheet.*

*Hint 5 If you do not know how to proceed with the determination of the growth rate of cash flows use  $g=2.9\%$ .*

5. Compute the total firm value as of 2008.

*Hint 1 To compute the value of non-operating assets, use Exhibit 4, item Equity in Earnings of Affiliates and the historic P/E multiple for the industry.*

*Hint 2 Think about the discount rate(s) you should use to bring back the terminal value from 2012 to 2008?*

6. Compute the total firm value as of 2008 including synergies.

*Hint 1 Reductions in backhaul costs will reduce cash operating expense.*

*Hint 2 Do not forget that SG&A and CAPEX are expressed as a percentage in terms of total revenue in Exhibit 1.*

7. Based on all your computation, what is your recommendation to Mr Robert Zimmerman.