Samples

**Projects in Teaching Introductory Accounting**

23 June 2023

Think back on your college business classes. What two or three learning activities do you still remember? In all likelihood, at least one of these activities is a project. What projects have you found to be successful? Let's talk about details: the assignment, the time frame, the learning objectives, the deliverables, and the grading.

Here are some descriptions and materials for some of our favorite projects we have used in teaching introductory accounting.

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**EDGAR Search**

You are going to look at the most recent annual financial statements for three companies: Microsoft, Google, and Apple.

1. Go to www.sec.gov.

2. Hover on “Filings” in the menu bar at the top of the page. Click on “Company Filings Search.”

3. In the “Company Name” box, type in “Microsoft”. Hit “Return” or click on “Search.”

4. The CIK (Central Index Key) that you are looking for is 0000789019 which corresponds to “MICROSOFT CORP.” Click on the red CIK number.

5. You will now see a list of filings that Microsoft has made with the SEC. We are looking for Microsoft’s most recent “10-K” filing. “10-K” is the mysterious name that the SEC gives to a company’s annual report. Click “10-K (annual reports) and 10-Q (quarterly reports)” on the right side of the page. Microsoft’s most recent 10-K filing was made on July 28, 2022. Click on the appropriate “Filing” button.

6. The 10-K filing contains lots of great stuff. But we want to focus on the financial statements. So, click on the red “msft-10k\_20220630.htm” – it is the first item listed.

7. Go down a couple of pages and use the “Index” links to help you navigate directly to the financial statements (Item 8).

8. Find out the following quantities for Microsoft for 2022 (the year ended June 30, 2022). WARNING: Be careful to look closely at the column headings to make sure that you get the numbers for the most recent year!!

a. Total revenue

b. Total cost of revenue

c. Net income

d. Total assets

e. Total liabilities

f. Total stockholders’ equity

9. Now we are going to repeat the same thing for Google. Go back to www.sec.gov.

10. Hover on “Filings” in the menu bar at the top of the page. Click on “Company Filings Search.”

11. Type “Alphabet” in the “Company Name” box. Yes, the name of the parent company of Google is “Alphabet.” Hit “Return” or click on “Search.”

12. There are several different variations of “Alphabet” that are listed. The one that you want is CIK number 0001652044.

13. You will now see a list of filings that Alphabet has made with the SEC. We are looking for Alphabet’s most recent “10-K” filing. “10-K” is the mysterious name that the SEC gives to a company’s annual report. Click “10-K (annual reports) and 10-Q (quarterly reports)” on the right side of the page. Alphabet’s most recent 10-K filing was made on February 3, 2023. Click on the appropriate “Filing” button.

14. Click on the red “goog-20221231.htm” – it is the first item listed.

15. Go down a couple of pages and use the “Index” links to help you navigate directly to the financial statements (Item 8).

16. Find out the same six quantities as you did for Microsoft. **WARNING**: Be careful to look closely at the column headings to make sure that you get the numbers for the most recent year available!!

17. Now we are off to get the numbers for Apple. Back to www.sec.gov.

18. Follow the instructions from before and enter the name “Apple” when you get to the place where you enter the company name.

19. You see a long list of companies with the word “Apple” in their name. You want “Apple Inc” which has a CIK number of 0000320193.

20. Apple’s most recent 10-K was filed on October 28, 2022.

21. Again, remember that you want to look at the 10-K material. – Within the 10-K report, go down a few pages: the Table of Contents link helps you get to the financial statements quickly.

22. Get the same six financial statement numbers listed in item 8 above. Note: Apple uses the name “net sales” to represent the same thing as total revenue and “cost of sales” to mean the same thing as “cost of revenue.” WARNING: Be careful to look closely at the column headings to make sure that you get the numbers for the most recent year!!

Next, you need to compute four financial ratios for each of the three companies. A financial ratio is merely a ratio between two financial statement numbers. The formulas for the four financial ratios are as follows. [In this context, you can view the words “revenue” and “sales” as being interchangeable.]

* Debt ratio: Total liabilities / Total assets
* Gross profit percentage: [Revenue - Cost of revenue or cost of sales] / Revenue
* Return on sales: Net income / Revenue
* Return on equity: Net income / Equity

So, if Microsoft has total assets of $100 and total liabilities of $40, Microsoft’s debt ratio is 40% = $40 / $100.

**WHAT DO YOU NEED TO SUBMIT?**

Your assignment is to submit the following two things.

1. A table with the six financial statement numbers and the four financial ratios for each of the three companies. For those who are keeping track, that is a total of 30 numbers (10 for each company).

2. A brief written explanation of what each of the four financial ratios tells you about the differences or similarities among Microsoft, Google, and Apple. I am not asking for anything elaborate; don’t write more than three lines of text for your interpretation of each ratio. Let’s say, for example, that you find that Microsoft’s debt ratio is 90%, Google’s is 45%, and Apple’s is 40%. This tells you that Microsoft has acquired a much higher fraction of its total financing through borrowing than have Google or Apple. Is this good or bad, safe or risky? You should give your brief interpretation. There is no right or wrong answer here; just give it a minute’s thought and write what you think.

**Computing Google’s Goodwill**

Using Google’s 2022 balance sheet, find the following numbers.

* Total cash, cash equivalents, and marketable securities
* Property and equipment, net
* Total assets
* Short-term debt
* Long-term debt
* Total liabilities
* Total stockholders’ equity

2. Find the current estimate of the fair value of the Google brand name. Use this Web site:

**https://www.interbrand.com/best-brands/**

3. Determine the current market value of Alphabet’s shares. This is commonly called the company’s “market capitalization.” An easy place to find this is at the following Web site:

**https://finance.yahoo.com/quote/GOOG?p=GOOG**

4. Estimate the current value of Alphabet/Google’s homegrown, self-developed GOODWILL.

Make the following assumptions and note the following facts.

* Assume that the recorded amounts for Alphabet’s reported assets is approximately equal to the fair value of those assets.
* Remember that the recorded amount of goodwill in Alphabet’s balance sheet is NOT Alphabet’s goodwill but is instead purchased goodwill acquired when Alphabet/Google purchased other companies.
* Remember that the fair value of the Google brand name is (1) not currently reported in the Alphabet/Google balance sheet and (2) is separate from Goodwill. – Again, any reported intangible assets arose from acquisitions of other companies.
* Assume that the recorded amounts for Alphabet’s reported liabilities are approximately equal to the fair values of those liabilities.

SOLUTION:



**Cost of Production at Your Favorite Restaurant**

Your assignment is to do the following two things.

1. Visit your favorite restaurant. While there, take notes about the production cost of your favorite meal.

2. Write a brief description of the restaurant and the meal (just a paragraph). Then show the details of your computation of the production cost of the meal. Finally, show a computation of the cost of your meal as a percentage of the price of the meal. – All of this should fit on one page.

Production Cost Computations

We know that the production cost of any item is the sum of the direct materials, direct labor, and overhead cost. – So, as you sit and enjoy your meal, take notes about the following.

* What did the food materials cost? Also, if you go to a place where your meal has disposable packaging, you need to add the cost of the packaging into the direct materials cost of the meal.
* What did the direct labor cost? This is the sum of the cost of your server and the cost of the cook or cooks who prepared the meal. This also includes the cost of the people who clean up after you. How much do they make per hour, and how much time did they spend on you? – Don’t ask them what they make; just make a reasonable estimate.
* What amount of restaurant overhead cost should be allocated to your meal? This, of course, is the hard part. A restaurant that doesn’t cover its overhead costs won’t be in business very long. So, estimate the monthly overhead cost, and then figure out some way to allocate an appropriate portion of that cost to your meal.

**Of course, you won’t know any of these numbers for sure. I just expect you to make a legitimate effort to ESTIMATE the costs.**

**Financial Statement Analysis**

On November 18, the class will be devoted to each student study group making a short presentation involving an analysis of a set of financial statements. This will be the social event of the season; black tie is optional.

Your group decides which set of financial statements you analyze. As a group decide on a publicly-traded company of interest. The easiest way to get financial statements is to access the SEC archives at <http://www.sec.gov/edgar/searchedgar/companysearch.html>.

The requirements of this group presentation assignment are

1. Submit a written executive summary of your analysis (**no more than two pages**).

2. Present your findings to the class in a presentation of **less than 7 minutes**.

In conducting your analysis, you should consider the following.

A. Come to a conclusion about the overall financial health of the company. In doing this, you should

Compute and interpret the ratios included in the DuPont framework

Compute and interpret other ratios as applicable

Interpret changes in ratios over time

Assess how ratio values compare with those of other companies in the same industry

Consider any limitations of your financial statement analysis

Conduct an analysis of significant financial statement note information

B. Identify the single most interesting fact to be found in each of the following:

The balance sheet

The income statement

The statement of cash flows

The notes to the financial statements

**Using Pro-Forma Financial Statements to Project Operating Cash Flow: Group Spreadsheet Assignment**

a. The financial statements on Page 3 of this document are simplified financial statements for Handyman Company for Year 1. These same numbers are in the Handyman Template spreadsheet you can find in Blackboard. **Use the Handyman Template spreadsheet as your starting point in constructing your spreadsheet.** Your assignment is to prepare projected financial statements for the FIVE years Year 2 through Year 6. Make the following assumptions.

1. Sales are expected to grow at 40% per year. For example, sales in Year 2 are expected to be $980 ($700 x 1.40). Sales in Year 3 are expected to be $1,372 ($980 x 1.40).

2. No cash dividends are to be paid.

3. **Round all amounts to the nearest dollar. Use the Excel @ROUND function.**

4. Cash is expected to increase at the same rate as sales.

5. The following anticipated ratio values should be used in forecasting the levels of receivables, inventory, gross PPE, accounts payable, cost of goods sold, and other operating expenses. For simplicity in your spreadsheet formulas, use **ending balances** in all ratio formulas that sometimes use the average balance in a balance sheet amount. For example, use ending Accounts Receivable instead of average Accounts Receivable in the average collection period formula.

• Average collection period 14.08 days

[Accounts Receivable/ (Sales/365)]

• Number of Days' Sales in Inventory 107.6 days

[Inventory/ (Cost of Goods Sold/365)]

• Fixed Asset Turnover 3.518 times

[Sales / Gross PPE]

• Gross Profit Percentage 25.86%

(Sales - Cost of Goods Sold) / Sales

• Other Operating Expenses / Sales 22.14%

• Average Payable Period 48.34 days

[Accounts Payable / (Purchases / 365)]

Note: Purchases = Cost of Goods Sold + Ending Inventory – Beginning Inventory

6. Depreciation Expense. Assume a 30-year useful life with no salvage value. Gross PPE acquired during the year is only depreciated for half the year. For example, depreciation expense in Year 2 should be $8 [($199/30) + 1/2($80/30)].

7. Interest Expense. Assume an interest rate on short-term debt of **6.0%** and on long-term debt of **8.0%**. Only a half year's interest is charged on loans taken out during the year. For example, if short-term loans payable at the end of Year 2 is $15, total short-term interest expense for Year 2 would be $0.75 [($10 x .06) + ($5 x .03)].

8. Income Tax Expense. Assume the same tax rate that was in effect in Year 1.

9. Assume that loan covenants dictate that Handyman Company must maintain a **current ratio** (current assets/current liabilities) of 2.0 or greater, and a **debt ratio** (total liabilities/total assets) of less than 80%. **Further assume that these covenant restrictions are met exactly**.

10. Two things to watch out for: (1) In some situations, your forecasts may suggest that the Short-term Loans Payable balance should be negative. This is impossible, so make sure to structure your spreadsheet so that this can’t happen. (2) In some situations, your forecasts may suggest that the Paid-in Capital balance should be negative. This **IS** possible if you think of Paid-in Capital as the sum of Paid-in Capital (a positive amount) and Treasury Stock (a negative amount).

b. Handyman Company is wondering what its financial statements would look like if the ratio values were changed as follows:

• Average collection period 9.06 days

• Number of Days' Sales in Inventory 66.23 days

• Fixed Asset Turnover 3.989 times

• Gross Profit Percentage 27.55%

• Other Operating Expenses / Sales 19.86%

• Average Payable Period 50.37 days

**Make your spreadsheet flexible enough to enable to you to evaluate the impact of these ratio changes.**

**Examples of How the Spreadsheet Works**:

Your spreadsheet displays forecasted financial statement values. Each of the financial ratio definitions is a combination of the ratio and various financial statement quantities. You can algebraically rearrange the financial ratio formulas to yield an equation for a specific financial statement value. See the examples below.

Accounts Receivable

Average collection period (ACP) = Accounts Receivable (AR)/(Sales/365)

ACP = AR/(Sales/365)

AR = (ACP \* Sales)/365

Inventory

Number of days’ sales in inventory(DII) = Inventory/(Cost of Goods Sold/365)

DII = Inventory/(CofGS/365)

Inventory = (DII \* CofGS)/365

Screen shot of completed spreadsheet:

A screenshot of a computer

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**Small Business Valuation**

Each group will perform a valuation of a small business from the standpoint of an outsider buying that business. The group functions as a financial advisor recommending a purchase price to a business acquisition investment fund. In this exercise, I am the managing partner of that investment fund.

The groups choose the actual small business they value. The valuation process must be PASSIVE: business owners and business employees cannot be questioned in order to get financial data.

This project includes two deliverables:

* A written report of no more than 3 pages
* A 7-minute presentation

**Step 1**: Choose your valuation target.

You can choose a local Utah County business or a small business you know from back home. Remember that the valuation process must be PASSIVE: business owners and business employees cannot be questioned in order to get financial data.

Past valuation targets have included the following:

* Rockwell Ice Cream
* Five Sushi Brothers
* Nelson Family Mortuary
* Shirley's Bakery
* Joe Vera's
* Penguin Brothers
* GetOut Games
* Hruska’s Kolache Factory
* Sodalicious

You are free to choose any small business you wish. Just make sure that the company’s business operations are VISIBLE so that you can estimate its revenues and expenses.

**Step 3**: Generate your valuation recommendation.

You must do the overall business valuation using both price multiples (a MARKET approach) and discounted cash flow (DCF) analysis (an INCOME approach).

You should give a short but specific explanation for **all** assumptions that you make in generating your data. For the multiples approach, explain exactly why you chose the **comparable companies** that you chose. For the DCF analysis, I expect to see a detailed explanation of how the **discount rate** was computed.

You should **reconcile** the difference between your multiples-based and DCF valuations. Big differences might indicate something wrong with either or both of your sets of estimates.

Sample Business Valuation

Crumbl Cookies was founded in 2017 by CEO Jason McGowan and COO Sawyer Hemsley while the two were students at USU. Since its humble beginnings, Crumbl has opened up more than 400 stores nationwide and plans to open up to 300 more in the next few years. Using current market rates and trends, we calculate the estimated value of Crumbl Cookies as a whole at approximately 11.04 billion dollars with the Provo location purchasable at approximately 16.41 million dollars.

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