ISMG6820 ISMG4750 FNCE4750

Spring 2019, **Due 4/09/19, 6:30pm via Canvas (Word and Excel files)**

Investment Task

Individual work only, must turn in both files, must show all work

Goal: In this task, you will analyze a new product investment decision. The CFO of SumSang, a leading smart phone provider is trying to decide between two new product development projects for its new 2020 smartphone product line. The new smartphone product will be sold exclusively in the U.S. (i.e., the U.S. market, invest and selling in U.S. dollars). The company can only focus on one project and only has enough funds to legitimately go forward with one of the two choices.

Project 1 involves a new iteration of an existing product line. The Goloxy Note 10 will have a 4 lens camera system using the latest optical and digital zoom software and technology, 5G latest wireless broadband capability, 6.5 inch screen, latest Android operating system, etc. This is a new phone, but an iteration of its current smartphone line. See attached concept pictures.

Project 2 is more radical idea. Known as the 777, the new phone-tab concept would offer future proof 7G+ broadband (a mix of traditional and satellite wireless broadband capability), 5 lens camera system with the 5^{th} lens offering direct screw-on attachment of optical lenses with hand controlled zoom like an SLR camera, and a new foldable concept screen. When folded, the phone-tab looks like a phone and provides the user with a traditional single phone screen that is 7 inches in size. However, the radical phone-tab actually has two 7 inch screens that when the phone-tab is unfolded, the new concept product becomes a tablet that will offer one giant screen to the user created by the combination of the 2 side-by-side 7 inch screens. This will require entirely new software to support windowing similar to used in laptops. See attached concept pictures.

The VP of Operations and Engineering has asked the CEO for funding approval for one of these projects. While marketing favors one of the projects, the Engineering VP just needs a decision to be made. After a lunch meeting with the CEO, the CFO comes directly to your cubicle and informs you that you are to help analyze the project alternatives and provide a recommendation for what project should be adopted and funded. The CFO needs this information so he can discuss the project recommendation with the CEO as they travel to Aspen for a business event tomorrow morning. You have a flight to catch at DIA (to Vegas) in 4 hours, so if you want to keep your job and keep your friends, you need to finish this task quickly.

Your business model for analyzing this problem must be completed using Excel. The model must be built such that it can serve as a template for future investment decisions and for scenario analysis (ex. change in price, sales, etc.). A 2 page (max) written recommendation for which project should be supported and arguments as to why it is the best decision must be completed.

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Project 1 involves upgrading the existing smartphone product line. The new microprocessor chip, camera technology and wireless chipset will cost $10,00,000, $2,000,000, and $5,000,000 respectively to develop, test, and ready for manufacture. Software upgrade costs will be $10,000,000. Continuous maintenance and improvement of the software will cost 50,000 hours of engineering time per year. Consulting services from Qualcomm will be required at a cost of $2,250,000 for the first year, and 2 additional years reduced 50% in the 2nd year and 50% of that in year 3. Retooling of manufacturing for new phone assembly will cost $2,000,000. Annual incremental maintenance costs in manufacturing will be $100,000. Finally, training on manufacturing and maintenance procedures will cost $1,250,000 and will require an average of 20 hours for 300 hourly workers. The average labor rate for manufacturing personnel is $35 per hour + $25 per hour in benefits (together known as the fully loaded hourly rate).

Project 1 product sales are estimated based on historic sales patterns of earlier iterative product launches. Unit sales of the new $1,000 phone is estimated to be 60,000 in year 1, 24,000 in year 2, and 4,800 in year 3. Price is expected to decline 10% in year one due to sales promotions, 30% of the original price in year 2, and then an additional 20% (for a total 60% of the original launch price) in year 3. On average, the introduction of the new phone will result in lost sales for existing phones. This will equate to lost sales of 24,000 units, 18,000, and 12,000 units in years 1-3 at an average price of $600, $500, $400 in years 1-3.

Project 2 involves major reengineering and innovation of technology, software, and usability for the new concept product. The phone-tab is like a combination of a smartphone and a tablet, with the new platform offering new opportunities for the creation of new services that are not yet been considered or even conceived. The new microprocessor chip, camera technology (including mini attachable lens) and wireless chipset will cost $15,00,000, $5,000,000, and $10,000,000 respectively to develop, test, and ready for manufacture. The new product shell (housing case) and foldable screen technology will cost $20,000,000 to develop and ready for market (text, manufacture, etc.). Software upgrade costs will be upwards of $25,000,000. Continuous maintenance and improvement of the software will cost 250,000 hours of engineering time per year. Consulting services from Qualcomm will be required at a cost of $10,000,000 for the first year, and 2 additional years reduced 20% in the 2nd year cost 20% of that in year 3. Retooling of manufacturing for new phone assembly will cost $8,000,000. Annual incremental maintenance costs in manufacturing will be $1,000,000. Finally, training on manufacturing and maintenance personnel $5,000,000 and will require an average of 100 hours for 300 hourly workers. The average labor rate for manufacturing personnel is $65 per hour fully loaded (i.e., with benefits).

The Project 2 product sales are estimated based on historic sales patterns of earlier smartphone and tablet launches, when new generations are launched. Due to the uniqueness of the phone-tab, sales estimates have been tempered. Unit sales of the new $2,500 phone-tab is estimated to be 6,000 in year 1, 12,000 in year 2, and 8,400 in year 3. Price discounts to introduce product 2 and to build the market are expected to reach 20% in year 1, with 30% off the launch price in year 2 and 40% off the launch price in year 3. Attachable lenses in one unit package (1 zoom and 1 wide angle lens in 1 package) are expected to be sold with a phone-tab purchase in 75% of all phone-tab unit sales, at a unit price of $50 after $10 dollar discount. It is expected that a new

version of the phone-tab will be introduced at the start of the 3rd year. In general, the introduction of a new phone product will result in lost sales for existing phone lines. As such, it is expected that the launch of the phone-tab will equate to lost sales for existing phone lines of 24,000 units, 18,000, and 12,000 units in years 1-3 respectively at an average unit price of $600, $500, $400 in years 1-3 respectively.

The CFO would like you to use a 5 year period for the financial models. He also wants you to include any additional factors that you think are necessary for the evaluation of the two projects and the ultimate decision you make. In short, the CFO wants you to recommend one of the proposed projects and explain why? Are there any scenarios where your 2nd place choice could be the right one to make (versus 1st choice)? What are the risks and challenges, and their implications? Hint: use NPV as a starting point.

Create a model in Excel and show all of your work. Write a two page summary with any supporting graphs, figure etc. attached to the back (not embedded in the text). Submit both Excel and Word files to Canvas by 4/9/19, 6:30pm.

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Project 1 Concept – Front View

Project 1 Concept – Back View

Project 2 Concept – View of Idea 1

Project 2 Concept – View of Idea 2