

April 8, 2003

Dear Michael Dell:

It has been brought to my attention that you are facing the dilemma with two different battery technologies, nickel metal hydride(NiHi) and lithium ion(LiOn). In making your decision, I am aware that you have four options: (1) go with the proven technology, NiHi, (2) go with LiOn which promises high upside potential but runs risk of failure, (3a) dual path – defer the decision by pursuing parallel paths and design two laptops, (3b) over-design – defer the decision by designing one laptop that could take either battery. Since expected net margins of each option are fairly close to one another, the decision is not only based on financial analysis. Strategic analysis is strongly needed. In the analysis, I paid close attention to the increase in customer mobility, which is one of the major trends impacting the technology market. This has caused a growing demand for lighter, smaller laptops with a longer battery life. According to market research on customer directions and buying behavior, battery life ranks only behind price and microprocessor choice; but weight and size are not rated as high as battery life in the eyes of laptop users.

After considerable investigation, I recommend using the dual-path. It involves designing a laptop that takes NiHi and a laptop that takes LiOn and then waiting 9 months for Sony's "conclusive data" on the battery charging issues. The expected net margin of the dual-path is the highest. But my recommendation was not solely based on the financial implications.

There are two possible outcomes of Sony's "conclusive data": they could either resolve the battery issues or not. If Sony resolves them, according to my

recommendation, you will launch the laptop with the LiOn battery. As I have stated before, battery life is an important criterion for your experienced consumers. For example, business executives want a laptop with a “longer recharge life”. You will now be ahead of your competition and offer greater product differentiation. But at the same time you will offer a “bulkier” product that could be less attractive to customers focused on aesthetics. The opportunity cost of using the LiOn battery is excluding other features in the additional space and "pulling developers away from other projects". If Sony fails to resolve the battery charging issues, you will launch the laptop that takes NiHi. This battery is smaller in size compared to the LiOn battery. The engineers have the opportunity to include other features in that additional space, such as “communication control or memory management accessories”. This laptop will be small, light, and will lack LiOn’s extended battery life. In this case, there you will be subject to restricted product differentiation in the competitive market.

The dual-path would result in additional development costs of \$2.5 million because the development of two different products requires twice as much “engineering activities and tooling”. Regardless of the increase in development costs, the expected net margin remains the highest. This option may also result in “demoralization of engineers” because half of their hard work will be thrown away. But Holliday feels that his development team has “nothing more to lose – not in terms of revenues nor even worker morale”.

In order to reduce the high intensity of competition in the PC industry, you recognize the need for product differentiation and you wish to do it through battery life. You should take some risks with this new product platform because there is a high

probability that Sony resolves the LiOn battery issues. It seems unreasonable to choose the first option, even though you are sure that the product will be perfectly launched with no delays. You will be faced with the possibility that your competition gets hold of the LiOn before you and increase their product differentiation.

The second option is the riskiest of all because it lacks a back-up plan and has the most disadvantages. If Sony does not deliver the LiOn battery, the estimated rework is “70% of original schedule and 30% of the \$10 million development costs”. The resulting late market entry could cut projected sales by half. You would be walking on thin ice because any “technical fiasco” could ruin Dell’s reputation.

The third option’s disadvantages exceed its advantages. Whether or not Sony delivers the battery, you would still be launching a “bulkier product”, the “battery charging circuitry & software would have to remain compatible w/ either system”, and the variable cost to over-design might as large as 2% of margins on each unit. Looking at the financial aspect, this option’s expected net margin is greater than in the first two options but lower than in the dual-path option.

I hope that by now you understand my reasons for supporting the dual-path option and rejecting the three other options. The dual-path option will facilitate the implementation of your goals.

Sincerely,  
Student Name  
Franklin and Marshall College

cc: Jeffrey Pinegar

Work Cited

Kotler, Philip. Marketing Management Eleventh Edition. New Jersey: Prentice Hall, 2003.

Krishnan, Vish V. and Ashok Nimgade. Product Development at Dell Computer Corporation. Boston: Harvard Business School Publishing, 1998.

Pinegar, Jeffrey.

Rivkin, Jan W. and Micheal E. Porter. Matching Dell. Boston: Harvard Business School Publishing, 1999.

