



OBJECTIVE ANALYSIS

Semiconductor Market Research

OBJECTIVE ANALYSIS ALERT!

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SAMSUNG GOES PUBLIC WITH SANDISK OFFER

Samsung today disclosed their position with regards to SanDisk in an open letter to shareholders. After detailing Samsung's good-faith efforts to negotiate an acquisition the company tells that it has decided to go to the shareholders to offer a price roughly double SanDisk's current share price to acquire the company outright.

Stating that "The world has changed dramatically in the past 52 weeks" Samsung offers shareholders an opportunity to cut their losses rather than to wait for the stock to return to its 52-week high.

The Samsung letter further states that the company does not want to cut jobs, as they value SanDisk employees: "Our intention is to operate SanDisk as a separate subsidiary company inside of Samsung and to maintain the environment that has contributed to your success."

Within less than 2 hours SanDisk issued a statement that their board "unanimously rejects Samsung's offer." Like Samsung, SanDisk disclosed some of the history of their negotiations and explained that the negotiations did not reflect SanDisk's anticipated market value and that stockholder protection was not included in the Samsung offer. The SanDisk board states that the Samsung offer is not in the shareholders' best interests.

A View from SanDisk's Perspective

SanDisk has plenty of reason to expect their stock price to rebound to or even rise above their 52-week high. Although the stock market is highly disenchanted with the memory markets today, those who understand the nature of semiconductor cycles realize that once demand rises to absorb all of today's overcapacity, which indeed it will, prices will firm, profits will resume, and stock prices will soar. Nothing significant has changed. Unless SanDisk were to mismanage its business very badly, their stock price in a year's time could very well be higher than their current 52-week high of \$56. SanDisk is an excellently managed company, and they continually adjust their operations to assure that the company will survive this cycle as they have all prior cycles.

Furthermore, Samsung's offer is cash. This deal is very different from the deal Micron structured with TI in 1998, a deal that might be more attractive to SanDisk. In the Micron/TI deal Micron acquired TI's DRAM business at a fair price measured in depressed Micron stock. When TI sold that stock a couple of years later they almost tripled their price. Meanwhile Micron didn't have to deplete their cash position by acquiring TI during a down market, at a time when Micron's cash was scarce.

From this perspective is not too surprising that SanDisk is disinterested in a cash offer of double SanDisk's current share price.

Samsung's Motivation

This is a great time to acquire any US company. The dollar is trading very low against most foreign currencies, so US acquisition targets are a real bargain. If we assume that recent bank failures don't drive the dollar further down this might be the best time to buy. To make things even more attractive, the NAND and DRAM markets are in a state of significant overcapacity, and this has pushed the share prices of participants in this market to bargain-basement prices.

We see this as a very shrewd move by Samsung to take advantage of a confluence of favorable circumstances. Their timing is excellent: Samsung probably appreciates the fact that 2006 capital spending was so significant that demand will not catch up with the current overcapacity until the middle of 2009. This is a position that Objective Analysis has held for over a year now. Should this scenario drag on for several months, Samsung will be able to prove to shareholders that SanDisk's stock price cannot be expected to improve for the next few quarters. Samsung even states: "It will take the NAND flash market quite a bit of time to recover."

SanDisk's president Eli Harari even said that the Samsung offer: "is opportunistically timed at the trough of an industry-wide downturn."

Furthermore, SanDisk is in the midst of negotiations with Samsung to renew patent licenses under which Samsung is paying SanDisk hundreds of millions every year. Should Samsung succeed in this acquisition, Samsung will be in a position to receive a similar royalty stream, and to perhaps grow that stream to something significantly larger than SanDisk's current royalty revenue. Something we have not mentioned yet is that SanDisk not only owns a large share of the intellectual property covering 2-bit MLC, but they appear to be the only company to own 3-bit and 4-bit IP, and are likely to profit handsomely from this position over the next two years.

What about Toshiba?

Ever since SanDisk converted from NOR to NAND early this decade they have had a very close relationship with Toshiba. The two companies share manufacturing capacity in Japan that satisfies the majority of SanDisk's NAND consumption. Should Samsung acquire SanDisk it would be reasonable for Samsung to shift this supply away from the Toshiba/SanDisk JV fabs to Samsung's own capacity. What then happens to Toshiba?

We do not know if there are provisions for such a scenario in the SanDisk/Toshiba agreements. At worst, Samsung would pull out of the JV fabs and sell their share to the highest bidder, which would be disastrous during today's glut. Quite possibly Samsung

would renew the joint venture with Toshiba and become their new partner. We see this as a best-case scenario.

We will have to wait and watch to see what eventually transpires.

The Shareholders' Dilemma

This is a difficult position. Shareholders can either take a stated offer at what might seem a very good price, or they can have faith that SanDisk stock will again rise above Samsung's current price. This analyst has faith that SanDisk's share price will rise well above the \$26 offering, but not until the middle of next year.

In case there are any concerns, this analyst is not a shareholder in SanDisk, and I am currently kicking myself for having put off a purchase I meant to make last week.

Possible Regulatory Concerns

The new company should be a significant force in the NAND market – perhaps large enough to cause regulatory concerns. Samsung's open letter states: "we have repeatedly expressed our confidence that this transaction will receive all necessary governmental approvals." Objective Analysis finds the opposite to be likely and we will explain why.

First of all, just how big of a share of the NAND market would the combined entity have? In 2007 by the two companies combined supplied just shy of 50% of total NAND shipments (measured in either gigabytes or dollars.)

The US government uses a measure called the "HHI" the Herfindahl-Hirschman Index to determine whether a merger or acquisition is likely to cause a market to become uncompetitive. The HHI is a measure of market concentration.

The Department of Justice (DOJ) guidelines give the following definitions of market concentration based on the post-merger HHI:

- Below 1,000 – Unconcentrated
- 1,000-1,800 – Moderately Concentrated
- Above 1,800 – Highly Concentrated

The DOJ will note "significant competitive concerns" if a merger or acquisition results in an HHI score increase of more than 100 points in a moderately concentrated market or more than 50 points in a highly concentrated market. If the HHI increases more than 100 points in a highly concentrated market the DOJ reasons that the move is "likely to create or enhance market power or facilitate its exercise."

The HHI for the NAND market in 2007 averaged about 2,300 and would have been almost 3,300 with SanDisk and Samsung combined. This means that the DOJ sees the NAND market as highly concentrated both before and after the acquisition and will look very unfavorably upon the 1,000-point increase in the HHI that would result from the acquisition.

Such a merger should prove very difficult for the combined companies' competition and possibly to their customers whose negotiating power would become severely constrained.

Objective Analysis is very doubtful that the government would allow such an acquisition to proceed, even in today's dire market. On the other hand, the fact that Samsung has made the largest foreign investment in US history with their construction of their latest fab in Austin, TX, gives the company a bargaining chip during such discussions.

We will continue to watch this action, and will alert our clients should any important changes transpire.

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