

Abstract

Sandisk Corporation is the leading manufacturer of flash ROM products for both the OEM and consumer electronic markets. To gain a competitive edge, Sandisk has implemented strategies that leverage the resources and expertise of the firm. Sandisk endeavors to find new markets and uses for their products. Sandisk has acquired complimentary technologies and formed alliances with vendors who produce devices that utilize Sandisk technology. The company continues to increase memory densities of their products and improve manufacturing processes. At the same time, Sandisk has taken steps to lower the costs of doing business.

Sandisk Corporation (<http://www.sandisk.com/>, stock symbol SNDK) was formed in 1988. Since inauguration, Sandisk has become the world's largest manufacturer of flash ROM products. Flashable ROM, or electronically erasable programmable read only memory (EEPROM) has many current applications. The range of uses includes memory for digital cameras, cell phones and PDA's, hard disk replacements in PC's and personal portable storage. Sandisk has made some inroads with military applications. Flash ROM is solid state and thus can withstand high levels of vibration. The contents of the ROM are stable and will be retained even when power is interrupted. Thus flash ROM is well suited for tasks where rugged conditions will exist, like on aircraft, space ships and submarines.

Sandisk desires continued growth as part of their directional strategy. There is a large market for flashable ROM products, and Sandisk wants a bigger piece of it. Revenues for Sandisk fluctuate with the demand for the devices that utilize Sandisk products. The more digital cameras people buy, the more camera memory Sandisk sells. To counteract the fluctuating demand for their products as device subsystems, Sandisk has introduced portable storage devices that use flash ROM technology as an alternative to magnetic or optical media. Sandisk can then market their products directly to the consumer electronics segment. The main problem has been cost per megabyte and capacity. Flash ROM storage gadgets have lower capacity and higher cost per megabyte than competing choices like the Zip drive from Iomega or CD recording technology. The advantages of flash ROM include small size, much higher ruggedness and reliability. Again there are no moving parts and the ROM retains its data if the power is turned off. Sandisk has established an extensive international network of retail sources for Sandisk products and accessories. Sandisk has made their products readily available on all fronts as part

of their growth strategy. The Sandisk brand is well known and carries a good reputation in the market as far as quality and features.

Sandisk competes for business as an OEM and a retail vendor. The Sandisk portfolio strategy is pretty focused on computers, communications, electronics and imaging. In general, any application that requires storage of digital information can be enabled via a Sandisk product. The biggest source of revenue for Sandisk has been the consumer electronics area. Sandisk memory cards are the leading brand being used in digital cameras today. Users of MP3 players, cell phones and PDA's also choose Sandisk for their memory needs. Though Sandisk holds patents on their flash ROM technology (the person who developed EEPROM is president of the company), they have acquired the rights to a competing technology called NAND. The NAND chip has even higher capacity and lower power consumption than Sandisk ROM. By marketing NAND, Sandisk can take advantage of their extensive corporate knowledge base in the flash ROM arena to successfully integrate NAND into their product mix. With NAND, Sandisk can offer a more advanced technology at a lower price than would have occurred through internal R&D efforts. Sandisk has also some military contracts. Sandisk flash ROM is being used on aircraft and submarines.

The Sandisk parenting strategy has been mainly oriented toward their manufacturing section. Flash ROM is difficult and expensive to make. To improve costs, Sandisk has partnered with contract manufacturers located near their global market locations. Sandisk has implemented supply chain management (SCM) technologies to manage supply and demand at their various manufacturing sites. Sandisk continuously improves manufacturing processes to make them cheaper and more reliable. The fewer chips that fail quality control, the less waste of material with a concomitant saving in cost of goods sold. Sandisk recently formed an alliance with Sony.

The aim is to stimulate new product ideas that require a flash ROM component. By getting involved with a large consumer electronics vendor, Sandisk can have an early influence in creating new products that will be coupled with sales of their products. Of course, Sandisk must work with all vendors and even competitors to create compatibility standards on the physical size and connection methods for flashable ROM. Sandisk has opened an office in Japan. Several of Sandisk's markets are in Asia. Thus, having dedicated personnel in the Pacific Rim region allows Sandisk to respond better and faster to competitive forces as well as direct access to Asian markets.

Sandisk Corporation has a high tech product that is hampered by the rate of adoption the product by the market. Sandisk has been put on a revenue roller coaster that is tied to the performance of localized economies. Sandisk flash ROM is used in devices and appliances that have cheaper alternatives. Digital cameras, PDA's, cell phones and such are seen as optional luxury items by the majority of the population. Sandisk must seek new uses for their technology along with expanding their market share for existing product lines. The manufacture of flash ROM is expensive and many of the chips fail QC. Reducing manufacturing costs and improving reliability will allow Sandisk to shrink the price of their flash ROM products while still earning good profits. Sandisk has maintained their market leadership partially through patent protection. By acquiring NAND technology, Sandisk has reached out to an external source for product innovation. The introduction of NAND technology by Sandisk creates a new, advanced product without the investment of R&D time and expense.

References

Sandisk 2001 Annual report
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