

High Technology for Mass Markets

High technology (“high-tech”) for mass markets represents enormous opportunities for existing and emerging companies and economies world-wide. Some of the characteristics of these markets with the related opportunities and the challenges are summarized in the following sections:

- Market and Technology Drivers
- Speed is Everything
- Global World
- Solutions vs. Technology
- Driving for Profitable Growth

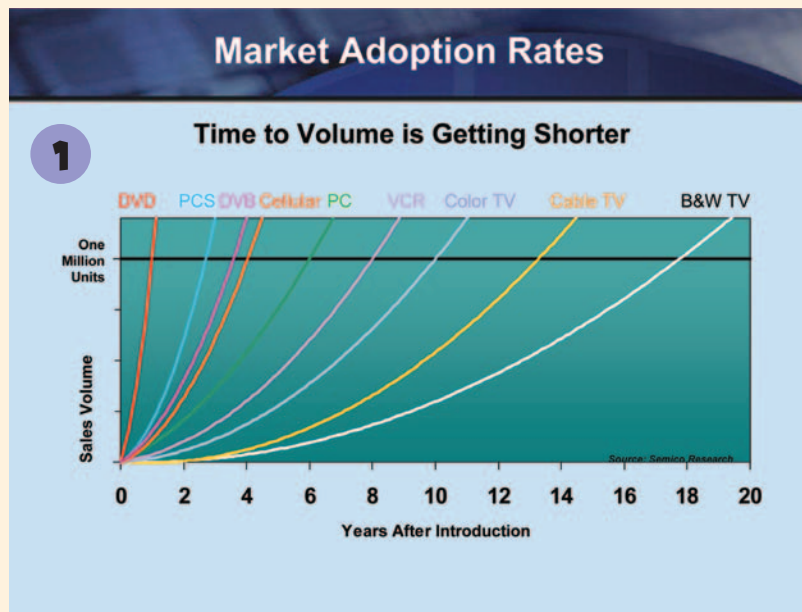
Markets and Technology Drivers: Over the last several decades, the market drivers for performance demand has moved from the military applications in the 1950s and 1960s to communication,

high performance at low cost, rapid development of innovations, shorter product life cycle, shorter time to market, global market demands, high R&D costs, consumer demand for easy-to-use high quality products, and of course, the “bottom line”- the absolute need to generate a sustainable profitable growth.



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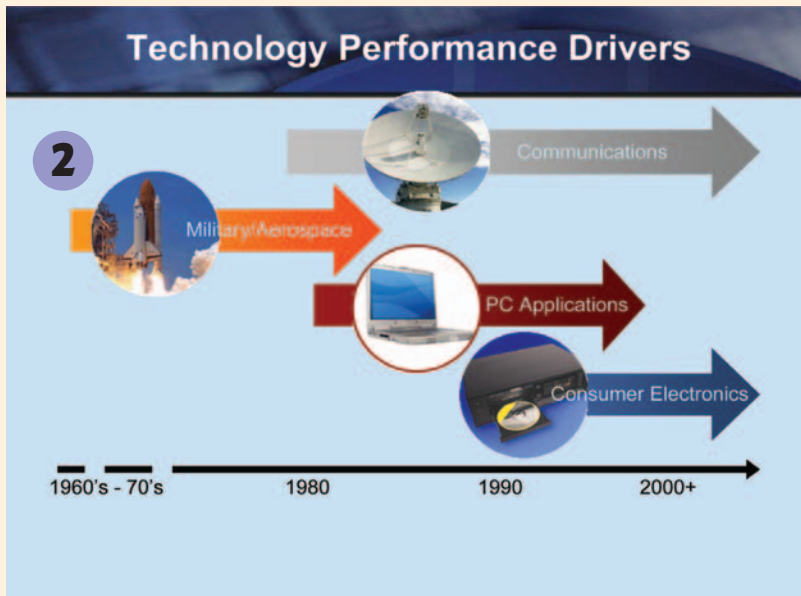
Speed is Everything: Our technology world is changing fast. High technology is penetrating the consumer lifestyle at a record pace. Where it took over 10 years for the first one million color TV sets to penetrate consumer homes during the late 1950s, in the late 1990s it took only six months for one million DVD players to enter homes. This is a 10 times faster penetration rate (see diagram No 2). Similarly, the rate of change in demand for computation speed in consumer products is increasing dramatically. Demand for performance in our living rooms has increased more than twenty fold in less than a decade. A similar dramatic change has occurred in the computation power of portable devices such as audio players, digital cameras, portable DVD players and mobile phones to mention just a few. These rapid changes in market development and performance demand have created new challenges in the high technology world. Speed is everything: Pace of innovations, market growth rate, time to market, product development cycle and decision making.



PC’s and especially consumer electronics in the 1990s and beyond (see diagram no.1). Who would have believed that the combined computation power in our living room products like DVD players and recorders, HDTV and digital audio systems would surpass the computation capacity of some of the most advanced missiles and other high-end electronic products in the world? It is happening now! This dramatic increase in the demand for high technology, at low costs, driven by high-volume consumer electronic products, is changing the entire landscape of high-tech companies and economies.

It creates enormous opportunities with billions of product units shipping per year, but the challenges are huge such as:

Global World: Hi-tech companies focusing on the consumer electronics markets must be truly global to achieve sustained growth in revenues and profits. In today’s environment, being Global is a condition dictated by markets, customers and suppliers and it must be embedded in products, corporate culture, organization, infrastructure and the entire corporate business model. Almost every consumer electronics product, from cell-phone to HDTV requires a different feature set and a localized customer support infrastructure for different countries. Supporting customers in Japan where their products are defined, and in China where products are manufactured, distributed and sold to the rest of the world, powered by technology developed jointly in Israel, China and the US, requires an extremely dynamic organization with employees in multiple global locations who can communicate around the clock and work harmoniously to deliver high quality



a system that is easy to upgrade to customer requirements that enable differentiation for each customer. It's a huge challenge; multi-discipline companies with VLSI capabilities and strong system, software and application expertise with a strong infrastructure are the only survivors in this fast-paced environment and, ultimately the only winners in these fast growing consumer electronics mass markets.

Driving for Profitable Growth: Sustainable growing profits are the ultimate goal of every business. To achieve this goal in the high-tech consumer electronics market, companies must move fast, deliver solutions versus technologies, and continue investing in technology, intellectual property (IP) and product differentiation while providing outstanding local and global customer support. Designing for cost, differentiation on a total system-solution level, and assurance of a

new products on time again and again. This is a complex challenge that not many companies in the world can handle well. It takes many years to understand and overcome the many challenges to long-term success in these global markets. Those organizations who manage to successfully develop the culture, technology, infrastructure and expertise to serve their customers well in this environment become the long-term winners.

long-term product roadmap are some of the essential ingredients for success. The balance between near-term and long-term investment and profits dictates a dynamic tradeoff optimization of

Solutions vs. Technology: High technology for mass markets clearly demands a fundamental change in the nature of the products and services delivered to the consumer electronics manufacturers. "Technology" in reality does not mean value to the manufacturers. They need solutions; production-ready with short time to market, competitive edge over their competitors, ability to introduce new products with minimum investment and in a short product life cycle environment. This creates a great challenge to the consumer electronics components manufacturer, especially the System on Chip (SOC) makers. SOC should really mean Solutions on a Chip. To deliver it "Chip Companies" must become system companies that deliver system solutions using their chips. They must provide a complete, working system reference product with all the necessary hardware components and software needed to run it (see diagram no 3). In order to sell the chips, everything must work first in



organizations, technologies, market focus and even partnerships. There are several good examples of global companies operating in Israel that achieved a world-wide leadership position in their markets and managed to sustain profitable growth for the benefit of their many millions of global customers, shareholders, employees and the Israeli and global economy at large.