

Magnetics: Industry Overview by **Walt Benecki**

The Magnetics Industry in the 21st Century

Despite a dismal beginning, the outlook is outstanding for magnetic materials and components manufacturers in the 21st century

The year 2001 will long be remembered as a disappointing and dramatic start for the new century. Early in the year market demand declined sharply and backlogs disappeared overnight, especially in soft magnetics which had become heavily dependent on computer and telecommunication applications. The market crashed as most soft ferrite manufacturers were committing to substantial capacity additions to meet the unprecedented market demand. The terrorist attacks and their subsequent impact on the world economy delivered a second blow to our industry.

Most users of magnetic products suffered in 2001. Automotive was forced to zero percent financing, telecommunication companies suffered unprecedented losses, consumer electronics softened and computer manufacturers downsized. One underlying positive factor is that many OEMs continued to commit resources to new product development in spite of the difficult business conditions. Customers continue to require applications engineering assistance, uncompromising quality and service, immediate delivery, higher performance materials and low cost sources. Most suppliers to industry believe that quality and value continue to be are the customer's primary purchasing considerations. However, a recent magnetics industry survey indicated that today our customer's number one buying consideration is price. This intense focus on price will continue to accelerate the transfer of manufacturing and sourcing to Asia.

The Chinese magnetics industry, both soft magnetics and permanent magnets will continue its high growth rate as the well-managed Chinese companies accelerate their penetration of European, North American and Asian markets. The Chinese have a number of significant advantages: abundant raw materials, low labor costs, a potentially large domestic market and, most significantly, many of our major customers are moving to Asia, to the front door of the Chinese magnetics industry! The biggest challenge to the Chinese is their ability to reliably deliver quality product and achieve profitability. Chinese companies who depend on their bankers to fund unprofitable operations will be in for a major jolt when the Chinese banking

system is eventually forced to face up to its massive bad loan dilemma. China is likely to enjoy significant growth over the next 20-30 years, but by mid-century we may see Africa emerge as our world's next significant economic frontier.

Exciting technology advancements, particularly in automotive and telecommunications, will provide numerous opportunities for our industry to enjoy future growth and profitability. Battery technology breakthroughs are likely to accelerate growth in consumer electronics and wireless applications, increasing demand for miniaturization and higher performance materials. Smaller, higher efficiency motor demand will likely exhibit double-digit growth for the next few decades. Magnetic material requirements for military and related electronic applications will experience high growth for years to come as the war against terrorism continues. Magnetic levitation transportation systems and medical applications will also continue to fuel growth for our industry. Aircraft and aerospace markets will rebound and continue to grow as space travel and colonization become a reality. Microturbines may become as commonplace as riding lawnmowers and then be obsoleted by fuel cell and wind power technology advancements. On the downside, new information storage technology may eventually obsolete the voice coil motor, the backbone of Neodymium-Iron-Boron magnet demand for the past 15 years..

Industry management must deal with all these new marketplace realities. The concept of customer loyalty will continue to be challenged as customers search worldwide for lower cost sources. E-commerce will become the accepted vehicle for conducting business. Survivors will have learned that market share emphasis must be replaced by profitability emphasis. A multi-faceted strategy will be required: talented applications engineering capability, advanced materials development, timely investments in new capacity, strategic alliances and low cost manufacturing. Industry consolidation will continue as both the weak and strong seek out alliances that will assure future competitiveness. We will certainly have additional business cycles and periods of inflationary pressures, but those magnetic materials and components manufacturers who commit to a balanced and consistent business strategy will enjoy an exciting and profitable future.

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