



By Rob Curedale, IDSA

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MADE IN CHINA



Illustration: Min Jong Park

This morning, I turned over a retro 1950s-American-style chrome-steel stapler and read the label: “Made in China.” Is everything these days made in China?

J Mays (Ford), Tom Matano (formerly of Mazda) and Franco Bianci (Haworth) are just a few of the design managers who show that by focusing on cultural issues and establishing cross-cultural communication, design can make a difference. J Mays learned in Germany how to go beyond styling to create products that have a deeper personal significance and a higher perceived quality than is common in US manufactured vehicles. He used this knowledge to help create the unique VW Beetle, the Audi TT and the next-generation Mustang. In creating the Miata for the American public, Tom Matano brought a Buddhist sense of balance to the English sports car. Franco Bianci brought American business savvy to Castelli, an Italian furniture manufacturer, and has brought an Italian sensorial understanding to

Haworth, a Michigan-based furniture manufacturer.

The results of these efforts are products that are made more marketable by their cross-cultural roots. Their success is the direct result of designers and managers who bravely crossed cultural boundaries. To survive and prosper in today’s global network of goods and services, corporations increasingly depend on creative personalities with experience in and understanding of multiple cultures. Whereas corporate success once required translating American aesthetics for the European market and incorporating European styling cues into American products, success now requires the same attention be given to the fastest-growing consumer market: China.

The Soaring State of China's Economy

By any measure, China's manufacturing performance over the last several decades has been spectacular. Between 1993 and 2002, China increased its share of global industrial production from 2.4 to 4.7 percent. **China's economy has been growing at a rate of 9 percent annually since 1978, and its foreign trade growth has averaged 15 percent over this period.** In 2002, China attracted \$53.2 billion in foreign investment, which for the first time eclipsed the amount (\$52.7 billion) that came into the US.

Much of what is occurring in China parallels what happened in Japan a few decades ago. What makes China different, however, is the size of the population. China is five times as populous as the US. **The size of its labor market will allow China economies of scale in manufacturing that the US simply cannot match. As consumption in China grows, the price of Chinese manufactured goods will drop, widening the gap between the prices of products made in China and the US.**

Price differentiation is already happening for some products. Supported by domestic demand, microwave ovens made in China, for example, are being sold in the US for around \$29. This could become a serious problem for US auto manufacturers; the cost of making cars in China will likely drop well below what it costs in Japan. Cars are currently selling for \$5,000 in China. If Chinese manufacturers were able to offer automobiles in the US for this price (or half this price as volume increases) US manufacturers would be forced to rely on truly innovative design to lure buyers and overcome the dramatic price difference.

In 1990, China was the world's largest producer of cotton textiles and televisions. Today, it leads in the pro-

duction of refrigerators, digital cameras, motorcycles, PCs, DVD players, bicycles, cigarette lighters and cellular phones. **Experts predict that by 2005, one-third of the original equipment manufacturing activities in the world will take place in China.** US manufacturers can either ignore China at their own peril or start thinking more seriously about how they may adapt to the new global reality.

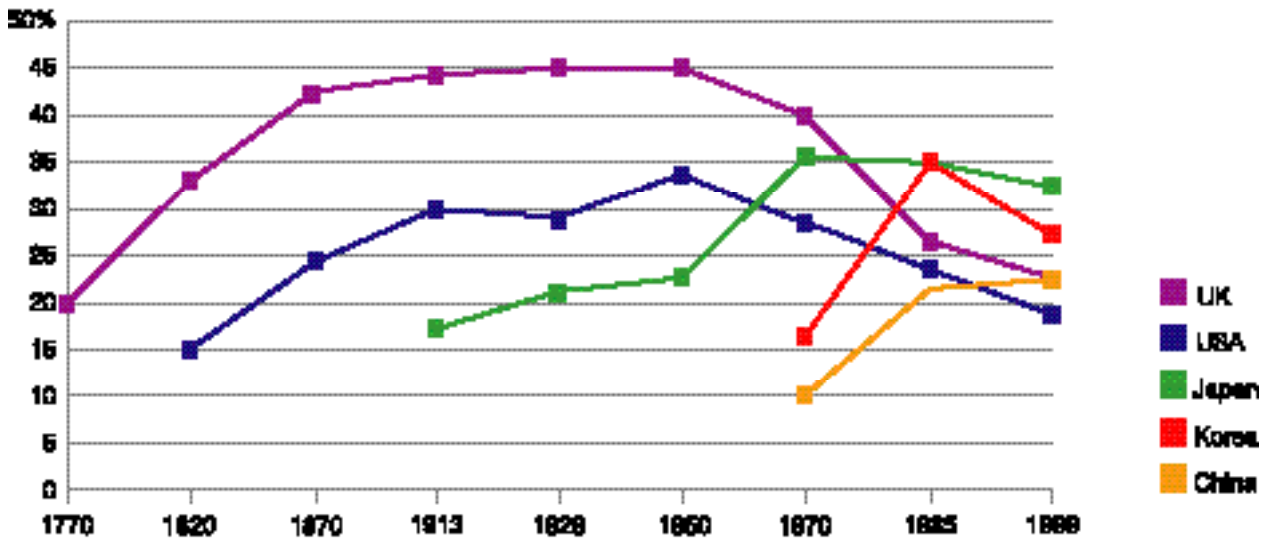
The complexity of China's consumer market makes competing in China difficult. Gerald Levin, former CEO of Time-Warner, suggests that when one takes into account geography, climate, religion, economic status and language (of which there are approximately 206 dialects), there are about 30 different "China markets." At a recent presentation at IIT in Chicago, Yin Jia Yao, general manager of the Industrial Design Center of Lenovo, similarly concluded that he identified at least ten distinct markets in China. What are these markets? What products do consumers in each want and need? It will take most US companies years of research to find out.

The Chinese Formula: Low Cost and a Large Market

The low cost of manufacturing and the largest emerging consumer market in the world are the two primary contributors to the expansion of the Chinese economy. China has a low-cost manufacturing structure in the short term and a large, local market potential in the long-term. **China will be important for the next 25 years as a center of low-cost products. After that, it will be important to global manufacturers as a center of consumption.** In terms of scale, there is no good historical model for what is happening in China, which will soon have 1.2 billion consumers.

The sheer size of China's population represents a

Industry share of total employment (percent)



Source: "China's Future in the Knowledge Economy" by Ptere Sheehan Director, Center for Strategic Economic Studies, Melbourne, Australia, March 2003.

huge market potential. Last year China passed the US as the largest cellular phone market in the world; still, only 13 percent of the total population subscribes to a mobile phone. The untapped market opportunity could translate to big profits for cellular phone companies. Four to six million new subscribers in China are connecting each month. Motorola is one of the beneficiaries of China's cellular phone explosion. The Chinese market is currently Motorola's most profitable global market. As a result of the company's success in China, Motorola is investing heavily in research and product development to make its products more competitive in the American and other global markets.

Like Motorola, many of the companies operating in China are multinational, but domestic companies and brands are growing rapidly. Chinese brands to watch include the Haier Group, which manufactures refrigerators, air conditioners, microwaves and washing machines; the Lenovo Group, which makes PCs and notebooks; Sichuan Changhong Electric, with color and rear-projection televisions, DVD and MP3 players, and air conditioners; Wanxiang Group, which focuses on

automotive components; and Galanz, which in 1997 became the first company to manufacture microwaves for the Chinese consumers, not only has dominated the microwave market in China, it also has captured a 40 percent market share in Europe.

History reveals that the way things are is not the way they always will be. Asia led the world in technology for most of the last 10,000 years—until the last 500 years. China shut itself off from outside influences in 1433; Japan in the early 1600s. This had the effect of slowing technological development and allowed these countries to be overtaken by the West. Isolationism and insular thinking are not good economic tools.

Changes in the Manufacturing Equation

The changes taking place in China and other Asian countries are fueled by changes in the needs of manufacturers. In the past, manufacturing tended to be located geographically close to consumers. Today, manufacturers find the cheapest location to house their operations. Under price pressures, global corporations have decreasing loyalty to their countries of origin.

The role played by US companies is also changing. From 1960 to 1990, as the US witnessed a 23.5 percent increase in employment, it saw a 30 percent decrease in the manufacturing labor sector. Some geographical areas saw far greater losses in manufacturing jobs; from 1969 to 1999 in New York, for example, the manufacturing workforce decreased by 51 percent. Manufacturing labor unions also began to lose members. In 1979, over one-third of manufacturing employees belonged to a labor union; by 1999, this number had fallen to less than one in six.

Is this trend in manufacturing bad for the US economy? From an economic point of view, the answer is probably no. The number of manufacturing jobs is decreasing mainly because technological advances are reducing the need for line labor. Even though the US is losing manufacturing jobs as a proportion of its overall workforce, it is not losing its manufacturing base. As a percentage of gross domestic product, manufacturing output has fallen only slightly since the 1970s.

All companies these days, including US corporations, are shopping the world for the lowest possible manufacturing cost. The US and other Western countries once blamed Japan for the decline of manufacturing employment; today, Japan is blaming China for its decline. But this is a fallacy. Japanese manufacturing did not destroy the manufacturing fabric of the US industry, and China will not destroy Japan's industry. On the contrary, the growth of a global economy makes all players stronger. For example, a number of Asian car companies manufacture their products in the US and employ many local designers in the process.

From an Agrarian to an Industrial to an Information Economy

As they develop over time, countries progress from agrarian economies to industrial economies and then to information economies. Western countries, including the US, are making the transition from an economy based on industry to one based on knowledge and intellectual capital. In China, meanwhile, the predominantly agrarian economy is being replaced by industry.

In theory, at least, the exchange of information will do more to determine the wealth of a country than the exchange of manufactured goods. Consider CDs, for example. The data on the CD—intellectual capital—are of far greater monetary value than its value as a manufactured product.

From 1995 to 2000, China received around 40 percent of the foreign investment in Asia. It appears that China is gaining its increased market share mostly at the cost of other Asian countries rather than the US. Indonesia and the Philippines are perhaps the countries most affected by China's direct competition in the low-labor cost segment of the market. Excluding Hong Kong and Taiwan, the US is the second-largest investor in China, right behind Japan. But the products that China exports to the US are mainly labor-intensive manufactured items, such as toys and shoes, for which there is no longer any competition in the US.

The Growth of a New Market

To capitalize on the growth of China means appreciating the market potential. China is one of only a few rapidly growing automobile markets in the world. Dr. Zhang Jianfei, Ph.D., a professor at the University of California at Berkeley and the current president of the National

Institute of Transportation Planning, believes that 50 million cars could be sold to private individuals in China over the next ten years. The expressway network in China is currently 30,000 kilometers long and is expanding by 3,000 kilometers every year, making the automobile increasingly useful and desirable. There is already a six-month wait to buy the \$5,000 subcompact manufactured by a company in the Zhejiang Province.

Analysts estimate that by 2007 domestic Chinese consumer demand will surpass the European Union, becoming the world's second-largest market. US manufacturers need to try to understand the structural shift to a knowledge-based economy and the opportunities this presents. **As China increases its share of the global market for low-cost, labor-intensive items, its domestic demand for high-cost, high-quality, well-designed products will increase.** US companies that invest in research and design will be in a good position to supply these products, and design companies are especially well positioned to benefit. Gerald Levin's statement of 30 China markets becomes increasingly relevant in this context.

The US leads the world in product innovation. The American political and social systems may support innovation more than in most other countries. Yet, many corporations fail to grasp the importance of innovation. US companies that have a corporate strategy of being fast followers will lose ground to Chinese companies that are better able to compete in the low-cost labor market.

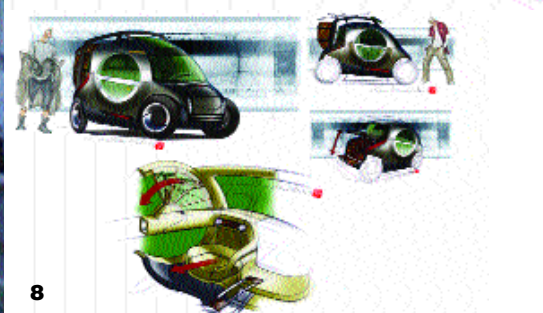
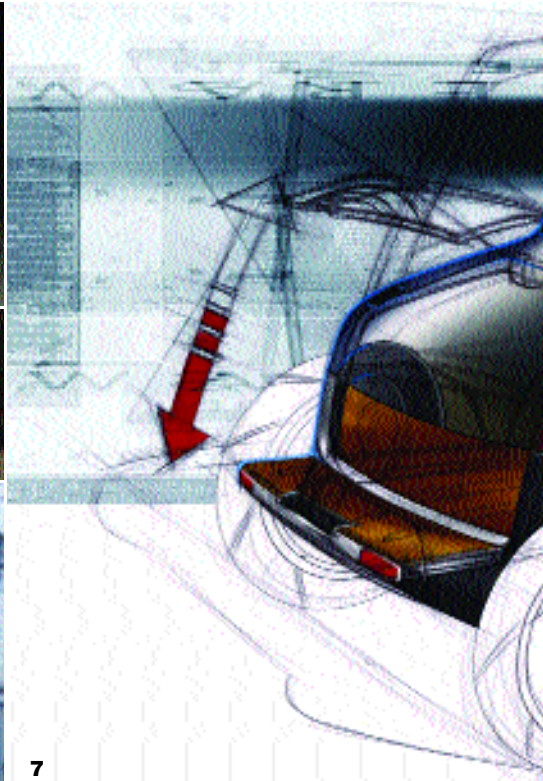
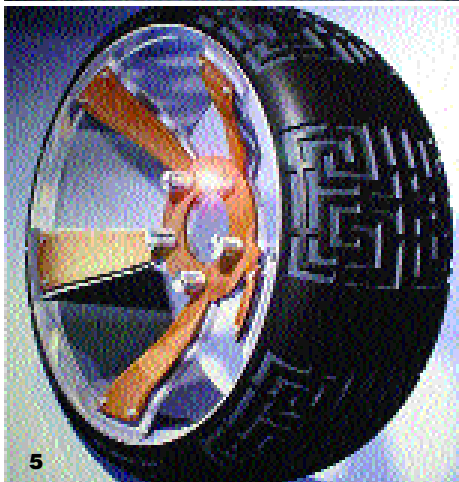
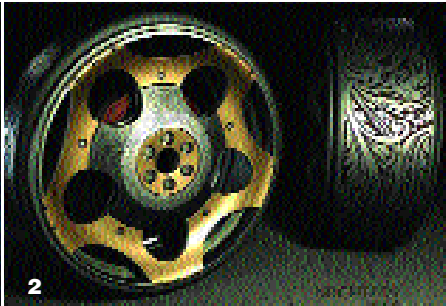
The Role of External Design Centers

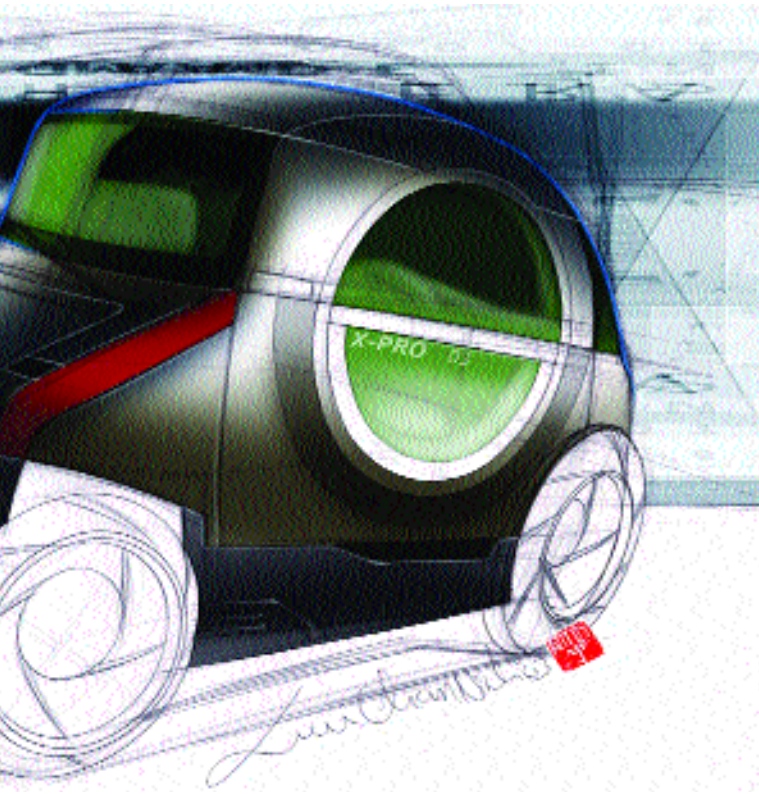
Hong Kong and Taiwan would both like to become design centers for the Chinese. Japanese electronics manufacturers Toshiba, Sony, Matsushita, Canon, Hitachi, Pioneer, Fujitsu and NEC have all reportedly

announced plans to expand manufacturing operations in mainland China. US technology companies also are becoming increasingly reliant on Chinese manufacturing, fueling the demand for more design centers in China.

In a 2001 survey of Chinese manufacturers, the Hong Kong Trade Development Council found that over 80 percent of the surveyed users of design services in China expressed a strong preference for service providers located in the city where they did business. Only one-fifth of the manufacturers that used external design service providers had tried foreign companies; and over two-thirds of these foreign providers were located in Hong Kong. **According to respondents, the most remarkable advantage of Hong Kong designers over their Western counterparts is an ability to integrate Chinese culture into a Western style. Compared with Western product designers, Hong Kong product designers are regarded as having a better understanding of the mainland market in terms of consumer preference and lifestyle.** In formulating business strategies, US product design consultants also need to take into consideration that companies in China are more cost conscious than US manufacturers.

In a recent teleconference with Designworks BMW in Los Angeles, design strategist Sarah Rosenbach and staff designers Scott McManigal and Klaus Tritschener agreed that design's need to be at the pulse of the market necessitates locating designers close to consumers. Chinese manufacturers will need designers in the US to design for American consumers. US manufacturers will need designers in China to design for the Chinese market. In both countries, design is becoming more important to the choices consumers are making. Successful manufacturers will need to rely on design to increase





Student designs for the 2003 & 2004 Michelin Design Challenges for emerging markets incorporating PAX Wheel and Tire Systems including designs by: Arthur Brown, College for Creative Studies **(1)** for the Chinese market; Erik Holmen, College for Creative Studies **(2, 3)** for the French market; Jeff Hammoud, College for Creative Studies **(4)** for the Chinese market; Jeremy Rolfs, College for Creative Studies **(5)** for the Chinese market; and Luu Chan Minh, student from China, **(7, 8)** for the Chinese market. n College for Creative Studies transportation design student Sung-Yeah Song enjoys studying in Detroit. **(6)**

their market share. They will need to overcome vast cultural and language differences.

In the short-term, China may have little need for product designers. Chinese manufacturers are currently focused on making commodity products for the lowest possible cost. This environment affords little opportunity for designers, particularly not the relatively expensive designers from the West. As China's local consumer market develops, however, it may be a different story. As the economy matures in China, the current focus on replication and duplication will become an increasingly ineffective model for selling products.

Some US companies are already actively involved in researching the Chinese market and culture. Given the Chinese preference for local suppliers, Taiwan or Hong Kong may represent good places for a US design company or manufacturer to stage an entry into the Chinese market. "With the rapid expansion of the number of clients, design and manufacturing projects, and products intended to be sold in the Asian marketplace, we feel that now is an opportune time to expand our presence in the Pacific Rim," says Kelly Kodama of Zoe design in San Francisco. "Taiwan is the perfect nexus for the design, engineering, and manufacturing of high-technology products, as well as serving as a launch pad to entering the growing China market."

Zoe recently formed a strategic partnership with Xcellent, a Taiwan-based manufacturing company. According to Ader Chen, creative director of Xcellent, "A strategic partnership with Zoe allows Xcellent to gain a more global design focus, as well as to expand our services to include Zoe's innovative global research and trend analysis capabilities. Zoe's design innovation will also perfectly complement our expertise in designing and manufacturing our own line of products."

Design Education East and West

China is preparing to educate its own cadre of industrial designers. According to Chinese government sources, China has 386 design schools, graduating an estimated 8,000 product designers a year. This has grown from only about 20 universities in the early 1980s. Only some 40 of these schools are over ten years old; most have just started in the last few years. Taiwan has more than 20 colleges and universities with industrial design departments, graduating roughly 2,000 students annually.

Demand for design education in the area is likewise flourishing. In 2001, the Beijing Institute of Technology accepted just one of 11 applicants. Xu Xihua, a professor at Zhejiang University, says of the school's goal, "By having students study people's behavior and teaching the design aspects of culture, I think our students can acquire creativity, the ability to negotiate in society and ability to solve problems."

US design schools, like US manufacturers, are increasingly taking a global perspective. As US manufacturers begin to sell their products in China, American design schools are starting to attract students from China, as well as Singapore, Korea, Japan and Taiwan. Asian students tend to have a good work ethic and to produce some of the most creative work at US design schools.

As a result of differences in culture and education, Eastern and Western graduates do not have the same strengths and skills. Research by Michael Harris Bond, a psychology professor at the Chinese University of Hong Kong, found that Chinese children are better at seeing the big picture whereas US children are better at focusing on the details. Linguists believe that the cultur-

al difference may be related to differences in the way we process information. In Chinese writing, words are represented as pictures; Chinese children learn to recognize thousands of pictorial characters rather than a series of letters. Thus, Chinese thinking tends toward a more holistic processing of information.

Practitioners worry that some US design schools are living in the past, teaching skills that are no longer needed by industry. Jacques R. Giard, a professor and the director of Arizona State's University's School of Design, feels that some US design programs mistakenly continue to focus on physical objects. **Too many US programs have students focus on making models rather than simulating a proposed reality, elevate rendering and other manual skills at the expense of critical thinking, focus on the artifact rather than the experience, concentrate on self expression rather than the bigger picture and (incorrectly) recognize art and architecture as their prime source of ideology.** Yin Jia Yao feels that a key driver of Chinese design is the design for balance.

Asian manufacturers supplying a growing local market may develop products with a different style than their Western counterparts. The work of Satyendra Pakhalé (featured in a recent issue of *ID*) shows one direction where Asian products may be headed. Pakhalé developed a blend of indigenous and global style that differs greatly from the Bauhaus-influenced design of the existing generation of Asian manufacturers like Sony. It will be much harder for US designers who lack a cultural understanding of China to design these types of products. It may be the Chinese consumer's turn to be amused at the US designer's lack of understanding.

Cultural Differences in Doing Business

There are myriad cultural differences between China and the US that can affect design. For starters, there are language differences. Not just differences in the language that is spoken but in how language is used contextually. In China, there are more than 30 single characters describing different kinds of red: red of wine, red of silk, red of wood, red of meat. A green hat can mean that your wife is cheating on you, so be careful with your wardrobe when you are playing golf, it could mean the difference between succeeding and failing in your first Chinese business deal.

Business negotiations in China are quite different than in the US. Chinese businesspersons like to work through a network of personal connections and intermediaries. The Chinese like discussions to be harmonious and do not respect displays of temper. From childhood, Chinese children are trained to avoid aggression and control their emotions. To the Chinese, telling a white lie is acceptable if it is done to avoid aggression or arguments. Business discussions typically take much longer than in the Western world and are more formal. There is also the notion of keeping face, which means that Chinese negotiators will seek concessions even if they are satisfied with the terms that have been proposed.

Companies can learn much about Chinese culture, but they will always be at a disadvantage to those who have lived it. Savvy companies choose someone to represent them in China who has lived there or is of Chinese descent rather than trying to train an American to navigate the Chinese cultural landscape.

Opportunity Knocks

Despite these many obstacles, I believe that China should be viewed as a great opportunity rather than a threat. US manufacturers and businesses have made profits in working with the Chinese; there is no reason that US designers with a global outlook and cultural sensitivity cannot follow in their footsteps.

As the world's power centers shift from national governments to global corporations, product designers are finding themselves creating the kinetic energy of desire that powers the engines of corporations to sell their products. Maslow's hierarchy of human needs is being replaced by the need of corporations to sell products in order to survive. The Bauhaus-inspired disdain for non-European traditional culture is a disadvantage in China.

But only those who do their homework will prosper over the decades to come. Success depends on a sound understanding of China's consumer markets. Companies will need to have in place a well-conceived strategic plan for global development, as well as five-year plans that will allow them to adapt their vision to the market reality.

If American companies are unable to capitalize on the opportunity that China represents, the insularity that led to China's demise in the adoption of new technology and closure to outside influence may have a twenty-first-century parallel in the US. ●

How to Avert the Asian Shift

To combat Asian competitors offering products at a cheaper price, many US manufacturers are reducing their production costs and profit margin ever further. Some manufacturers find that just to keep their head above water they have to outsource their parts abroad. As prices sink lower and lower, only a few can compete on price alone.

The two ways manufacturers can prevent fighting the futile price battle are:

n **Innovation.** Careful use of original ideas and features enables companies to create their own market outside the battlefield and set the price according to what consumers are willing to pay, rather than to what competitors dictate.

n **Brandwide product design.** A product that reflects the brand as a whole gives consumers a subconscious understanding of the brand identity through their long-term interaction with the physical product. Thus, the brand language needs to be recognizable in the products themselves, not just the graphics. If the brand language is extended throughout a product line, the user's relationship with one product leads to familiarity with other products within the brand and, thus, to brand loyalty.

The problems that manufacturers have been facing over the last five years will soon be coming to the industrial design profession. It is imperative that we shift focus and bring industrial design to a higher level. The

two solutions discussed here are our best ammunition. There is a stronger tradition of innovation in Western culture; innovation should be used to our advantage.

Designing with a brand-wide perspective is another essential weapon we need to deploy, whether designing single or multiple products. Because branding is not well used by most Asian manufacturers, it offers an opportunity to US and other competitors. Many Asian manufacturers tend to focus on single products and apply branding only on a superficial level, customizing a generic common platform by changing only color and graphics. For an OEM, this is a good business model, but one size does not fit all: To create long-term brand awareness and loyalty the application of design has to go further than skin deep. The key to creating a brand is to understand the visual and tactile perception of the market involved. Being located within the target market gives us a natural advantage that we should actively capitalize on and, in doing so, elevate the services of our profession.

—Paul Hatch, IDSA, President, TEAMS Design