

RED PAPER
ARE WE ABANDONING OUR COMPUTER INDUSTRY TO JAPAN?

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I call this a "red" paper because red is the color I most associate with danger. I believe that the United States is in danger of abandoning another vital industry to Japan. This is its computer industry, both computer hardware and computer software. Abandon. Surrender. Thrown away, not taken away. Not stolen. Not elbowed aside by artificial means, simply surrendered.

I see the same pattern of abandonment and surrender now beginning in computers that has occurred before in such industries as motorcycles, automobiles, consumer electronics, office equipment and semiconductors. The first products American companies let go to competition are the low-end, inexpensive products. The first markets they let go are foreign markets. But surrendering the inexpensive products and foreign markets usually are their first steps down the relentless path toward losing the more lucrative products and their own home market.

The danger to our computer industry is particularly life threatening, because computers are critically vital to U.S. industry in general. We are not talking about "Toys-R-Us"; we are talking about a critical, strategic industry.

The danger comes from the way American computer manufacturers and software houses are running their businesses and treating their customers, not from any "targeting" of their industry or other conspiracy by the Japanese. This danger can be avoided only if American computer companies perceive the need to correct the way they are running their businesses and treating their customers. And, act on that life saving perception. Now, while there still is time. Blaming or bashing the Japanese will not help. Clyde Prestowitz, Jr., put it clearly in twelve words: "The U.S. doesn't have a Japan problem. It has a U.S. problem."

I am an American citizen, and a permanent resident of Japan. I have lived in Japan for twenty-one years, since 1969. I co-founded and am the president of K.K. Ashisuto, a Japanese company that publishes computer software products and distributes them in Japan. We have 625 employees. Our revenues last year were nine billion yen, 95% from software products we imported from the United States. Our products range from the least expensive for the smallest personal computers to the most expensive for the largest corporate computers. From products selling for less than \$100 to products selling for most of a million dollars.

I see this danger because it affects my business, increasingly, every day. I am worried about it. As a businessman, I want to see a strong and competitive American economy. As an American citizen, I want to see a strong and competitive American economy. As a resident of Japan, I want to see a strong and competitive American economy. So does the world.

This "red" paper is intended as a warning. It is organized as follows:

1. It begins with some comments on "Japan bashing", because I believe there is too much of this. I also see too much "America bashing". To what useful end are either except to win elections and sell books and newspapers? They prevent us from seeing the real problems we need to talk about and solve, and they are poisoning our vital relationship with our most important ally. Terms like tilted and level "playing fields" presume opposing teams. The U.S. and Japan compete but are we not really on the same team?
2. It discusses why I believe, from my own twenty years of business experience here, that Japan's market is an open market.
3. It describes monumental changes taking place in Japan that are forcing Japanese business executives and policy leaders to look more critically at the computer industry and demand more from it.
4. It discusses how the American-dominated computer industry has failed to satisfy crucial needs of its customers in particular and society in general.
5. It describes a Japanese computer industry that is emerging to satisfy crucial needs not being satisfied by the American-dominated computer industry.
6. It warns of the threat that this newly-emerging Japanese computer industry poses to the established, entrenched American-dominated computer industry.
7. Finally, it recommends actions that American computer manufacturers and software suppliers must take if they want to maintain their leading position in the world's markets.

JAPAN BASHING

The cover story of the April 2nd issue of Newsweek said that Japan thinks of America as a "Nation of Crybabies". In many ways, so do I.

I think most American complaints about trade with Japan are wrong. Most complaints are from those who have failed here because they have not tried hard enough or smart enough. For example, Donald Kendall, the creator of today's Pepsico, complains that Japan's market is closed. Meanwhile Coca Cola sells 60% of all carbonated soft drinks sold in Japan. If Coca Cola does so well, why does Mr. Kendall blame Japan for Pepsi's lack of success there?

Other complaints are from persons like Lee Iacocca of Chrysler whose real aim appears to be to reduce competition within the United States from Japanese companies. If Iacocca really wants to sell Chryslers in Japan, why does he not produce right-hand-drive vehicles? Japanese auto makers produce the cars they want to sell in Japan with right-hand steering wheels and the cars they want to sell in the United States with left-hand wheels. European auto makers, which sell 90% of the automobiles imported into Japan, make similar efforts. But Chrysler does not. And those successful European auto makers have built nationwide distribution and service networks in Japan, while Chrysler has not. That is part of the

reason why Volkswagen-Audi, BMW and Mercedes Benz each sold more twice as many automobiles in Japan last year as our entire "Big Three" automakers combined. They each also sold more than thirty times as many cars in Japan as Chrysler last year. Even though Chrysler increased exports to Japan by 119.6% last year, twelve other companies each exported more than four times as many cars to Japan. Chrysler's playing field must be tilted by its own mirrors.

Other complaints are from politicians who seem to see bashing of Japan as a good ploy to win elections. They seldom mention that Japan consistently buys more U.S. products than any other foreign nation save Canada. When they complain about agricultural trade, they usually do not mention that Japan buys nearly 70% of all the beef exported by the United States. Or that Japan is, by far, the biggest foreign market for American citrus fruit.

And then there are the well-meaning bureaucrats and scholars who seem to believe, sincerely, that most American citizens are idiots not capable making their own decisions. These elitists want the government to decide what its citizens should buy from whom.

Not all American complaints about trade with Japan are wrong. Some are accurate. Japan has its share of business persons who blame their own failures on others, or who try to use their government to prevent competition from abroad. Japan also has its share of politicians who are far more interested in winning elections than in truly serving their constituents. And it has its own elitist government officials who sincerely do not trust Japanese citizens to make their own decisions. These Japanese elitists, for example, once did not trust their baseball players to choose safe baseball bats. Nor trust Japanese snow to accept foreign skies. And even today they do not trust housewives to choose between foreign and domestic rice.

I believe much of the ugly talk about trade problems between the Japan and United States is irrelevant, because it will not help American companies sell their products in Japan or compete with Japanese companies outside Japan. And most of this "Japan bashing" is dangerous, because it deflects attention away from the real issues and problems that must be addressed and solved to sell successfully in Japan and to compete successfully with Japanese companies outside Japan.

JAPAN'S MARKET IS OPEN. WIDE OPEN

Again, I am an American. I have lived in Japan since 1969. I co-founded K.K. Ashisuto, a Japanese corporation, in 1972 to publish and distribute software products in Japan. We do not write software. Rather, we publish and distribute software that others have written. We have done well.

We are, by far, the largest distributor of independent software products in Japan. By "independent" I mean independent of the hardware makers; products that run on various brands and sizes and models of computers. By "software products" I mean ready-made software that has been packaged for sale and use

"as is" off the shelf. Like books and records. We sell about one-half of the independent software products sold for use on large computers in Japan. That is about 15% of all software products used on large computers in Japan. We have done so consistently for many years. Nearly all of Japan's major corporations use one or more of our products. So do numerous universities, government agencies and other large organizations.

We began selling software products for personal computers only a few months ago, in September 1989. Our five products already are the 1st, 3rd, 7th, 9th and 10th leading sellers in Japan. Each is the unit sales leader in its category. The latest survey by The Computer magazine shows that we already have captured 24.1% of the market for PC software products. That is, nearly one out of every four units of personal computer software products sold in Japan is one we publish and distribute. Less than a year after entering this market! There was no genius, magic or mirror involved. We published, priced and offered products to fit this market. We did not thrust a take-it-or-leave-it product or exorbitant prices on the market, and we have not tried to extract excessive royalties from our dealers.

Altogether, we sold over nine billion yen of software products in 1989. We imported 95% of those products from the United States. We currently have 625 employees. I have found Japan to be a wonderful place to live and a great place to sell American products.

Japan is a difficult place to do business only if you do not want to bother learning its language. Or if you do not want to bother learning and adapting to its social and business customs. Or if you do not genuinely like the persons you deal with. Your customers, employees and suppliers. Or if you are unwilling to adapt your products to the market. Or provide the level of quality or service Japanese expect and demand and get. Or if you overcharge for your products. Or if you expect results before you have established your credibility.

But so is any market in any country difficult under those self-created circumstances.

We are selling American products successfully in Japan because I have mastered the Japanese language; we sell to our customers in the way they are accustomed; those customers are genuine friends; we adapt the products we import to the needs of the Japanese market; we provide the quality and service expected in Japan; and we price our products fairly.

Our success began to come only after we invested nearly ten years establishing personal credibility and well over five years establishing the company's credibility. But the success has been well worth the investment. And the harvest continues.

I think most others who have been successful in Japan have done the same things we have done. Both foreign and Japanese. Those who have failed in Japan have not done these things. There are Japanese losers as well foreign losers. We hear more from the losers because they cry and scream so loud. Or get their politicians to cry and scream for them. The winners usually are quiet because they have nothing to

gain by telling their competitors about the great opportunities in Japan or teaching their competitors how to realize those opportunities. Does Macy tell Gimbel? Why should Coke tell Pepsi? What has BMW to gain by instructing Chrysler?

Our experience is, by no means, unique. Robert C. Christopher's book entitled, "Second To None", provides an excellent compendium of many American business successes in Japan about which we hear too little.

CATAclysmic CHANGES

But Japan now is undergoing cataclysmic changes, and these are having profound impacts on our market and our business. I think these changes will have far-reaching effects on the world's computer industry, on trade relations between the United States and Japan and on the overall economic well-being of both countries.

The reason for these changes is that Japan's economy is at a critical juncture.

Japan's economic growth and prosperity has been built on mass production. Japan has replaced the United States as the world's leading manufacturer of large volumes of high-quality products. Forty years ago the United States had the world's best manufacturing facilities and technology. It produced the world's highest quality products. Japan's manufacturing facilities had been devastated by the war, its technology was antiquated and its quality was so poor that "made in Japan" was synonymous with cheap, shoddy, inferior-quality merchandise. But the United States' wages were the world's highest, while Japan's were among the world's lowest. And the United States was more than happy to export its manufacturing equipment and technology to low-wage countries like Japan.

The last forty years has shown what happens when a high-wage, high-quality country tries to compete with a low-wage, low-quality country in mass production when both have the same manufacturing facilities and technology. It loses. The low-wage country wins. Low wages enable it to capture the low end of markets where low prices beat high quality. Earnings in the low end of markets provide the funds to improve quality and move up and capture the portions of markets that demand higher quality and command higher prices. Just look at what has happened to Japan's motorcycle, automobile, home electronics, office equipment and semiconductor industries. And what has happened to ours.

This is how Japan overtook the United States in industrial and economic leadership. But Japan is as vulnerable today as the United States was forty years ago. For the same reasons. Although Japan now has the world's highest quality, and most advanced manufacturing facilities and technology, its wages are among the world's highest. And it is exporting its manufacturing facilities and technology to such low-wage economies as Korea, Taiwan, Hong Kong, Singapore and Thailand. And even-lower-wage

economies like China and India.

Japan's prosperity cannot continue if its economy continues to depend on mass production.

But the United States' approach of abandoning manufacturing altogether will not work any better for Japan than it did for the United States. Japan's leaders do not want to repeat our failed approach of moving manufacturing off-shore to low-wage countries. Or our equally-failed "post-industrial" approach of trying to live off converting money from one form to another, selling one another advice, taking in one another's laundry or suing one another. Such a service economy merely moves wealth from one pocket to another; it does not produce new wealth. It does not enrich its inhabitants.

Japan must convert itself from an economy producing large quantities of a small variety of products to one that produces much smaller quantities of a much wider variety of products. This is an information-intensive economy. An economy that must capture and analyze information on which consumers want what products, when, where, why and how. It uses this information to decide what to produce, for whom, when to produce it, where to deliver it and how to sell it. It is an economy that needs a lot of timely information to fine-tune manufacturing and inventories so that small quantities of a wide variety of products can be manufactured as inexpensively as large quantities of a small variety of products have been manufactured in the past. An economy that demands that manufacturers, suppliers and distributors share and communicate information effectively and efficiently.

This kind of information-intensive economy can compete successfully with low-wage manufacturers because it can provide products that better fit its customers' needs and desires at prices that are only slightly higher than mass-produced goods.

NEED TO MODERNIZE OFFICES

To convert successfully to such an economy, Japan must and will modernize its offices. It must and will increase the productivity and effectiveness of its office workers. Substantially. Quickly. It probably lags far beyond every industrialized nation in this. Japan must and will learn to run its offices as effectively and economically as it now runs its factories, warehouses and transportation systems. Today, 36 million of the 61 million persons employed in Japan work at desks. That is 60% of the workforce. But the productivity of office work is very low.

Japan's factories, warehouses and transportation system are the most modern in the world. Its factories are powered by nuclear energy and the work increasingly is done by robots. Its warehouses are highly automated. Its goods are transported by super tankers, jet airplanes and 250 kilometer per hour "bullet trains".

But its office workers use the same paper, pencils, erasers, scissors and paste that were popular in Charles Dickens' times. Japan's offices look and operate much the same as when its factories were powered by fast-running streams and its goods were delivered by slow-walking horses. For example, per-capita use of personal computers in Japan's offices is only one-half that in Western Europe and one-fourth that in the United States.

Why?

DOES THE COMPUTER INDUSTRY SERVE SOCIETY?

Some leaders think the reason is that the computer industry is not serving the needs of society adequately. It is not providing computers that are powerful enough to satisfy the needs of Japan's offices, small enough to fit into those crowded offices, easy enough to apply to the needs of Japan's offices and office workers or priced low enough to use as widely as needed.

These leaders remember that a major reason why Japan was able to accomplish its "economic miracle" of the past forty years is that its automobile, shipbuilding, heavy manufacturing and other industries were able to obtain high-quality materials and energy at low prices. Why? Because the suppliers of raw materials and energy viewed themselves as having a mission to serve society. To provide the foundations for Japan's economic rebirth. They sacrificed high profits to provide the best possible energy and materials at the lowest possible prices to Japan's manufacturers.

These leaders are beginning to realize that Japan needs a similar contribution from the computer industry to modernize its offices and make the transition into an "information-intensive" society. But, to their dismay, they see an oligopolistic computer industry dominated by a small number of computer manufacturers whose avowed goals are to maximize their own market shares, revenues, profits, return on investment, stock prices and today's spendable wealth. These computer manufacturers explicitly base their executives' compensation on their success in attaining these goals.

These computer manufacturers treat customers as tools to be used to achieve these goals. How? They invest massive resources in developing and promoting "proprietary" products that are intended to "lock in" their customers and "lock out" their competitors. They consider it normal business practice to restrict their customers' freedom of choice and sell their customers as much as they will buy at the highest prices they will tolerate.

These proprietary computer systems have been so expensive to build that only a few computer manufacturers could afford to build them. Most potential competitors are "locked out". And users find it prohibitively expensive to convert from one proprietary system to another. They are "locked in". So this computer industry has few participants, and users have few choices. This results in a lack of competition

that otherwise would stimulate suppliers to provide the innovative products that Japan's offices need at prices they can afford.

This industry could be tolerated in Japan when Japan was able to compete successfully in mass production. But it can no longer be tolerated in Japan now that Japan must convert itself into an "information-intensive economy" producing a wider variety of products in smaller quantities. Japan needs manufacturers who will produce the tools needed to modernize, drastically and quickly, its offices and increase the productivity of its desk workers. At affordable prices.

JAPAN'S ELECTRONICS INDUSTRY TO THE RESCUE

Fortunately, for it, Japan has the world's best and largest consumer electronics industry. Hitachi, NEC, Toshiba, Oki, Sharp, Casio, Canon, Ricoh, Sony, Matsushita, Sanyo, Seiko, Nintendo and others provide the world's most innovative and highest-quality televisions, stereos, calculators, clocks, cameras, videos, games, facsimiles and other electronic tools and toys. And they sell them at the lowest prices -- optimum prices, an economist would say.

Japan's electronics industry is the world's best and largest because it is the most competitive. It is competitive because it is based on standards rather than on proprietary products. Standards make it easy for new competitors to enter the industry and make it easy for customers to switch from one competitor's product to another. The competition stimulates new ideas for products and new ways to manufacture them more efficiently. The competition makes the competitors stronger. Any company that can survive the fierce competition of Japan's electronics market has the Darwinian strength, will, drive and corporate character to compete successfully in any other market.

Japan's consumer electronics companies first equipped Japan's homes, automobiles, wrists and pockets with innovative, high-quality electronic tools to lighten their workload and make their leisure time more enjoyable. Then they proceeded to equip the world's peoples with similar tools and toys.

Now they are turning their attention to Japan's desks and offices. And they are doing so with standards pioneered in the United States.

They began by producing personal computers that use Microsoft's MS-DOS software, which has become the world's standard for personal computers. Japanese electronics manufacturers have shrunk the size of personal computers to that of a notebook fitting easily on the small desks in Japan's crowded offices. And can be stored easily in a drawer when not being used. They have reduced the weight of these computers to about five pounds (2.5 kilograms) so office workers can carry them around easily, whether ten feet, ten miles or 10,000 miles. These are not scaled-down computers. They have the capacity and do the work of acre-size 1960s computers and strong-man "PCs" of the 1980s.

Competition has driven the price of these personal computers down to under \$1000. As a result, companies now can afford to buy them for all office workers. Schools can afford to buy them for their students. And individuals can buy their own. For example, 575 of our company's 625 employees have a book-size computer.

Japanese electronics companies now dominate their domestic market for personal computers. And they have become the leading suppliers of laptop computers throughout the world.

Japanese electronics manufacturers also have begun supplying "workstations" for office workers who need more power than personal computers provide, and "servers" for groups of office workers who need to share both data and expensive equipment. Here again their products are based on a standard pioneered in the United States. AT&T's Unix, which rapidly is becoming the standard software throughout the world for workstations and servers.

These personal computers, workstations and servers are beginning to revolutionize Japan's desks and offices. They are beginning to provide the office productivity that Japan needs to make the transition to an "information-intensive economy" producing smaller quantities of a wider variety of products as efficiently as lower-wage economies produce large quantities of a narrow variety of products.

Japan's companies will, increasingly, transfer information work from proprietary computers to standard computers because the standard computers increasingly do more work for less money. And so will companies in other countries.

American computer manufacturers are in danger of losing their worldwide market shares to Japan's electronics manufacturers. Not because the Japanese "targeted" this industry, but because Japan's economic health required better computers at lower prices. And because Japan's electronics manufacturers have chosen to provide "standard" computers that enhance competition and widen customers' range of choice instead of "proprietary" computers that "lock out" competitors and "lock in" customers. Because they consider "serving" customers the goal of business while the purveyors of proprietary products seem to consider "servicing" customers the best way to achieve their own goals, as Will Rogers used that term to describe banking services.

PROPRIETARY VERSUS STANDARD SOFTWARE

The difference between "proprietary" computer systems and "standard" or "open" computer systems lies in the software they use.

Proprietary computers require their own unique (to them) software. This software either is developed and

supplied by the manufacturer of the computer or is developed according to rules and specifications laid down by the computer manufacturer. This software usually runs only on that manufacturer's computers.

Thus, buying a proprietary computer is equivalent to buying a stereo system that plays only its own unique audio tapes or CDs. Think how expensive stereo equipment would be if every stereo maker had to invest in recording all the music that could be played on its equipment instead of using the abundant supply of music available in standard formats. Not many stereo makers could afford this massive investment. Most of today's stereo makers would be "locked out" of the industry. The industry would have far fewer participants than it does today; it would be far less competitive than it is today.

And suppose you had to replace all of your recorded music whenever you wanted to switch from one brand of stereo equipment to another. Your collection of records, tapes and CDs probably is worth much more than your stereo equipment. So you would not be inclined to switch. When "your" stereo maker raised prices for new models, add-ons or enhancements, you would find yourself trapped. "Locked-in". The stereo industry would be much less competitive than it is today, our range of choice would be much narrower and we would pay higher prices for less desirable products.

As with stereos, most computer users' investment in software is much greater than the cost of the computers that run or "play" it. Often ten times greater. And the situation with proprietary computers is even worse than the stereo analogy.

Why?

Because manufacturers of proprietary computer systems often design them so that different proprietary software is required for differently priced models of its computers. Thus, software that runs on a \$5,000,000 computer cannot be used on a \$500,000 or \$50,000 or \$5,000 computer from the same maker. This prevents users from switching to new, lower-priced models that can handle the work previously doable only on much more expensive machines. Unless the user is willing to replace his existing software, which would be analogous to replacing your cassettes and CDs to switch to a lower-priced stereo. In other words, prohibitively expensive. This enables the computer manufacturers to maintain high profit margins in the face of rapidly falling prices by preventing their users from taking advantage of those rapidly falling prices. Nice folks, eh?

Standard or "open" computer systems, by contrast, use software that adheres to widely-accepted standards. Software that runs on one brand or model of standard computer usually runs on many other brands and models. Like the recorded music we actually use on our stereo equipment. Makers of standard computers do not need to make heavy investments to create their own unique software. Therefore, many companies are able to participate in this industry. Competitors are not "locked out". Users can switch brands or models and still use the same software, so they switch more readily. They are not "locked in". As a result, the industry is as fiercely competitive as the stereo industry. And, like the stereo industry, this fierce competition results in rapid improvements in products at rapidly declining prices. Consumers'

heaven.

All of Japan's major consumer electronics manufacturers have begun making "standard" or "open" computer systems, personal computers that use Microsoft's standard MS-DOS software and workstations and servers that use AT&T's standard Unix software.

Japan's computer users increasingly are moving from proprietary to standard or open computer systems. I believe most users in most other countries also will move from proprietary to standard or open computer systems. Japan's consumer electronics makers have committed themselves to providing standard or open computer systems. If America's leading computer makers continue to stress proprietary systems, they will increasingly lose their shares of the world's computer markets to Japanese electronics manufacturers. But it will not be Americans losing to Japanese. Rather it will be closed, proprietary systems losing to open, standard systems. Because the latter serve users better. American computer manufacturers can avoid defeat by moving aggressively to build and sell standard, open systems. If they do not, they should realize that they voluntarily surrendered their market shares. Their market shares were not "targeted" or taken from them.

Many American software suppliers face this same danger. Those software companies whose strategy is to build and market software products tied to specific proprietary computer systems are tying their own futures to the futures of those proprietary computer systems. If the proprietary computer systems do not survive, those software companies will not survive.

JAPAN'S CRITICAL SOFTWARE SHORTAGE

Japan's consumer electronics industry has begun supplying the computers needed to modernize Japan's offices and increase the productivity of its office workers. At affordable prices. They are supplying standard computers that run standard software. However, this has exposed another problem. A severe shortage of software. And computers are useless without software to instruct them to do useful work.

(By analogy, stereos would not be much fun or very useful for what they do without an abundant supply of recorded music. Radios and televisions would be useless if there were no broadcasters. As would video players without video tapes.)

The severity of Japan's software shortage is shown by the following figures. U.S. companies buy sixty percent of their software in the form of ready-made, off-the-shelf products. Only forty percent of the software they buy is custom-made for them. In Western Europe, the ratio is forty percent ready-made to sixty percent custom-made. But only ten percent of the software Japanese companies buy is ready-made; fully ninety percent is custom-made.

This is a tremendous burden on Japan's computer users. Making anything from scratch is much more expensive and time-consuming than using ready-made products. Quantity is limited, quality is poor and the cost is high. And buying custom-made products is expensive.

(An analogy to making software from scratch is the days when mom made the family's clothes and dad built the furniture. And rolled his own cigarettes and distilled his own whiskey. An analogy to buying custom-made software is to suppose ninety percent of your clothes, including underwear and shoes, had to be custom-made. Think of how much they would cost, how few you could afford and how little money you would have left to spend on things other than clothes.)

Another indicator of the severity of Japan's software shortage comes from the Ministry of International Trade and Industry. "MITI" estimates that Japan needs 600,000 more software engineers than it now has, and that the shortage will reach one million software engineers by the year 2000.

Japan cannot modernize its offices and increase the productivity of its office workers, as drastically and quickly as it must, unless it finds a solution to this software shortage.

The reasons for this software shortage are easy to understand. Among other reasons, major Japanese corporations maintain a policy of "lifetime employment". They hire employees when they graduate from college and retain them until they reach retirement age. They tend not to hire and fire as the company's business goes through peaks and valleys. But they have peaks and valleys, and their need for personnel rises and falls accordingly. To cope with these fluctuations, Japan's major corporations use subcontractors to fill their temporary needs for personnel.

Most of Japan's software companies were established to smooth major corporations' fluctuating needs for computer engineers. These software companies are capable of packaging their knowhow into ready-made, off-the-shelf software products. That is what their counterparts in the United States and Europe do. Making and selling software products should be much more profitable than custom-making software for each user. Recording and selling records is a much easier way for an established singer to make a living than doing dinner shows.

But making products requires an investment. There also is the risk that the software product will not sell. And the current demand for custom-made software is so great in Japan that its software companies can make a good living without making those investments and incurring those risks.

Japan, essentially, is in a vicious circle. Its software companies are so busy with custom work that they do not need to make the investments or incur the risks to build software products. So they don't. So few software products are available. So the demand for custom-made software is much greater than it would be if more products were available. And the circle continues.

The result of this critical software shortage is that all of Japan's industries suffer. They are not getting

enough of the software they need to modernize their offices and increase the productivity of their office workers. This is preventing them from making the transition, as quickly as they should, into an "information-intensive economy" that produces small quantities of a wide variety of goods.

Solving this software shortage is a critical national problem that Japan must solve. Japanese industries must solve it to remain competitive. And Japan, as a nation, must correct it to maintain its prosperity. Japan will solve it.

THE NEED FOR INEXPENSIVE SOFTWARE

In addition to needing much more ready-made software than it now has, Japan needs that software at much lower prices than it now has to pay. Software products for mainframe computers usually are priced at least 50% higher in Japan than the same products sell for in the United States. And software products for personal computers usually cost several times more in Japan than in the United States.

One reason why Japanese use more custom-made software and less ready-made software than Americans is that software products are priced so high here.

The high prices being charged for software products in Japan went largely unnoticed until last year when Japanese electronics manufacturers began shipping book-type personal computers. As pointed out above, these computers are now small and light enough to put on every Japanese office worker's desk. At around \$1000, they are inexpensive enough. And light enough for office workers to carry around with them. Every major Japanese electronics manufacturer has announced or is about to announce a book-type personal computer. The intense competition is producing a steady stream of more capable and powerful machines that weigh and cost increasingly less.

But the high prices being charged for software are inhibiting the spread of their use. Spreadsheets, wordprocessing packages and other office productivity software products each cost almost as much as a book-type computer. Software products have been so expensive that companies could not afford to buy them for all their office workers. Basic corporate integrity prevents them from stealing the software (read: copy without payment or permission). The social penalties and damage to their business reputation would be too costly. So they have refrained from buying personal computers for most of their office workers.

In short, the high prices being charged for software products have been preventing the spread of computers. This, in turn, is inhibiting Japanese companies' efforts to increase office productivity so that they can convert from manufacturing large quantities of a small variety of products to manufacturing smaller quantities of a larger variety of products. Thus, the high prices being charged for software have become intolerable.

Consequently, since Japan is a modern, resourceful nation, the problem is being addressed. People have begun analyzing WHY software prices are so high. And they are not limiting their analysis to the prices of software for small computers. They have begun to question the prices they are being charged for software products that run on large computers as well. Strange, but true, most American software houses are not facing the question.

SOFTWARE IS A PUBLISHING BUSINESS

This analysis shows that the software products business is a publishing and distribution business very similar to book and music and movie publishing and distribution. An AUTHOR writes the musical score or book manuscript or computer program. A PUBLISHER packages and promotes it. DISTRIBUTORS sell it. If the author or publisher or distributor charges too much for its contribution, one of three things must happen:

1. The product must be sold at a higher price, thus making it more difficult to sell. (More difficult than if that one party had not charged too much for its contribution.) This reduces the market for the product.
2. One of the other two parties must spend less on its contribution. (Spend less than it would have if that one party had not charged too much for its contribution.) This reduces the success of the product because something is not being done as well as it could have been.
3. One of the other two parties must take a loss on its contribution. (Make its full contribution but not receive sufficient compensation to the extent that one party charged too much for its contribution.) This limits the future of the business, because no sensible party will continue for long making its full contribution at a loss.

Further analysis shows that Japan's computer software publishers have been paying authors too much. Far too much. Mostly to American authors and owners of computer software.

Most software products sold in Japan to date have been imported from the United States. The American authors demand royalty burdens of from one-third to one-half the price Japanese customers pay for each unit of their software sold. And Japan's publishers of computer software have been paying such exorbitant per-unit royalties.

But everyone is losing, for these reasons:

1. Since too much money is paid to authors or owners of computer software products for their manuscripts, too little money is left to publish and distribute that software at reasonable prices.
2. Quality is compromised because publishers cannot package the products as well as they should. Distribution is weak because distributors cannot promote the products as aggressively as they should, and cannot use all of the distribution channels they should use. And prices are much higher than in other

markets.

3. As a consequence, use of custom-made software remains much higher in Japan than in other countries, and use of ready-made, off-the-shelf software products remains much lower than in other countries.

By comparison, book and music and film publishers, in Japan or any other country, pay authors of manuscripts or scores only five to ten percent of the price consumers pay for the book, record, audio tape, compact disk or movie. Because book and music and movie publishers pay authors only five to ten percent for manuscripts or scores, they can afford to spend substantially more money packaging their manuscripts and scores into high-quality, attractive products than can the Japanese publisher of American computer software. The book or music or movie publisher can spend far more promoting the book or record or film than the Japanese computer software publisher can spend promoting its American product. And book and music and film distributors can spend dramatically more to sell their products than Japanese publishers can spend to sell American computer software products.

SUICIDAL POLICY

One consequence of the exorbitant per-unit royalty rates being charged by American computer software suppliers is that Japanese companies are not getting the high-quality, affordable software products they need to modernize their offices and increase the productivity of their office workers. But this is a temporary, short-term problem. Japan is a modern, resourceful nation. It perceives and will solve this problem. It already has begun.

The real, long-term, permanent loser stands to be the American software industry. It seems to have a death wish. Until now, it has dominated the world's second largest market, Japan. But it now is abandoning this market. Surrendering. Abdicating. Here is how:

1. Most American software companies design their products strictly for the American market. They ignore the special needs of the Japanese market when designing their products. These "special" needs include supporting the written Japanese language, operating on the computers that are popular here, supporting Japanese business and social customs and conforming to Japanese laws. Most American software companies refuse to design their products to support these needs even when the needs, and the reasons why they are important, are explained thoroughly and repeatedly.

2. As a consequence, most American software products require substantial adaptation before they can be sold successfully in Japan. But most American software companies actually INHIBIT such adaptation of their products, in two ways:

a. They refuse to allow their Japanese publisher do the adaptation. Some think they can do a better job themselves, but they rarely give it high priority or assign enough resources. Others simply do not trust their publishers.

b. Second, the exorbitant per-unit royalty rates they demand make it financially impossible for the

Japanese publisher to adapt the product properly even when the author permits that.

3. American software companies cannot seem to understand that Japanese consumers expect, demand and get a much higher level of quality in the products they buy than American consumers. This includes computer users. American computer software products tend to be too big and bulky, run too slowly and contain too many errors for Japanese tastes. And most American software suppliers inhibit their Japanese publishers from improving the quality of their products in the same ways they prevent their publishers from adapting the products to Japanese market needs:

a. By not allowing it.

b. By charging such high per-unit royalty rates that the Japanese publisher cannot afford to invest in bringing the quality of the product up to Japanese standards.

4. Software products usually come with voluminous documentation explaining how to use them. From several hundred to several thousand pages. This documentation all has to be rewritten in Japanese for the product to sell well here. This is unavoidable, but it also is expensive. Most Japanese publishers of American software products compromise here to save money, because the exorbitant per-unit royalties they pay to the American supplier do not leave them enough money to rewrite the documentation properly.

5. Most American software suppliers force their Japanese publishers to price the product much higher in Japan than it is priced in the United States. Anywhere from fifty percent to several hundred percent higher. Some do this directly by specifying prices. Most do it indirectly by setting minimum per-unit royalty amounts so high that the Japanese publisher is forced to charge high prices.

6. The exorbitant per-unit royalty rates American software suppliers charge prevent their Japanese publishers from promoting the products as aggressively as they should. These exorbitant royalty rates also preclude the Japanese publisher from using all the distribution channels they should use.

The BIG LOSERS from all this are the American software suppliers. It is their products that do not fit the market well enough, that do not measure up to Japanese quality standards, that are not documented well enough, that are over-priced and that are neither promoted nor distributed as aggressively as they should be. It is their software products that Japanese users are rejecting in favor of custom-made software.

Most American software suppliers should see this, because they are not as successful in Japan as the size of the market indicates they should be.

They also should have the business acumen to see that MAXIMUM per-unit royalty rates are different from OPTIMUM royalty rates. If American software suppliers want to maximize their success in this market, they must negotiate royalty rates that do not stifle or choke-off the publication and distribution efforts necessary to such success. OPTIMUM royalty rates are those that facilitate the broadest distribution of a high-quality product at fair prices. Optimum royalty rates increase the revenues of author, publisher and distributor so that they want to continue working together. And they enhance the reputations of each so that customers will want to continue buying their products.

American software suppliers better wake up and see these things soon because, if they do not, it will be too late. They are on the verge of abdicating the Japanese computer software market to Japanese authors of software products. Right now, in 1990.

JAPAN'S EMERGING SOFTWARE PRODUCTS INDUSTRY

American software suppliers do not have much time left to heed the wake-up call and see the flashing amber and green lights, because Japan's software authors have begun to understand the situation and use it to their own advantage.

Heretofore Japan's software authors found it difficult to get their software published, even in their own country, because American software was considered superior. But by offering their manuscripts at optimum royalty rates, they are getting published. A few have become best sellers. Each success has given that author and others more confidence and stimulated them to write and submit more software for publication. I am not talking only about teenage geniuses a la Steve Jobs and Steve Wozniak working in backyard garages. Mammoth, multi-billion dollar Japanese corporations are turning their minds and resources to this endeavor.

Japanese individuals and companies have begun creating software products that are competitive with the best software products from the United States. And these Japanese software products are starting to beat American software products in Japan's market for the following reasons:

1. They are comparable in functional capability to the best American products. Usually not better, just comparable. Usually workhorses rather than racehorses. But good enough.
2. The Japanese products are built specifically to satisfy the needs of the Japanese market. They support the Japanese language, run on all computers that are popular in Japan and fit Japanese social and business customs and practices. Thus, the publisher does not have to spend time and money "Japanizing" them.
3. They usually are of much higher quality than American software products. They are more compact, operate more efficiently, and contain practically no errors. These Japanese software products generally have the same kind of quality we have come to expect of Japanese manufactured goods.
4. The Japanese products come fully documented in the Japanese language, using terms and examples familiar to every Japanese person, so the publisher does not have to invest in translating and rewriting documents written in English for Americans.
5. Japanese computer software authors rely on their publishers and distributors to set prices and terms of sale for their products. Good software publishers and distributors are experts in determining the prices and terms of sale that will maximize returns for their authors and themselves.

And, as discussed above, Japanese software authors charge no more for their manuscripts than authors of books or music or movies. Five to ten percent of what the consumer pays for the published product. And they make more money, because the lower royalty rate enables the publisher and distributors to spend more money to package and sell their products.

Each success with domestic software at these low royalty rates is convincing Japan's software publishers and distributors that they are foolish to pay royalty burdens of thirty to fifty percent for foreign, mostly American, software.

American software suppliers were able to do business in Japan when there was no domestic competition, but they now are losing what market share they once enjoyed here.

And you can bet that when the Japanese have secured the surrender of the Japan market, they will build truly exportable products -- high quality, competitively priced products built to fit their target markets.

EVIDENCE

I think our company provides excellent evidence of what is happening to American software suppliers in Japan. Since incorporating in 1972, we consistently have sold about half of the independent (of computer maker) software products sold in Japan. During our first sixteen years of business, all of our revenues came from importing American and European software products. In 1988, 99% of our revenues came from imports and 1% from selling Japanese products. In 1989, less than 95% of our revenues came from imports; more than 5% came from selling Japanese products. This year, we are forecasting that less than 80% of our revenues will come from imports and more than 20% will come from selling Japanese software products. This is a dramatic change over such a short (two year) time span!

Why has our business changed so dramatically? Because we increasingly are finding in Japan better products, that fit our market better and that we can publish and distribute on better terms than we can find in the United States. An ominous trend for this piece of U.S. industry. Price, quality and market fitness. And soon, exportability.

SUMMARY

To summarize, we are seeing cataclysmic changes in Japan's economy. These changes are causing changes in Japan's market for computer products. American computer manufacturers and software suppliers heretofore have dominated Japan's market. But instead of responding to the changes now occurring, American computer manufacturers and software suppliers appear to be abandoning Japan's

market. Surrendering. Abdicating. By doing so, they are creating a vacuum that Japanese must fill. And are filling.

1. Japan's leaders recognize that their nation's post-war "economic miracle" came from its ability to excel in mass production. They also recognize that mass production will be taken over by lower-wage economies. To maintain its economic prosperity, Japan must convert itself into a producer of smaller quantities of a wider variety of products.

2. This is an information-intensive economy. To succeed, Japan must modernize its offices and increase the productivity of its office workers. Drastically. Quickly. This is an imperative, not a wish.

3. This requires widespread use of computers. Another imperative.

4. The oligopolistic, American-dominated computer industry has not provided good enough computers at low enough prices to enable Japan's companies to modernize their offices, increase the productivity of their office workers and make the transition to an information-intensive economy. This industry's "proprietary" products seem to maximize its suppliers' profits much more effectively than they satisfy its customers' needs.

5. So Japan's powerful consumer-electronics industry has begun to supply the computers that Japan's companies need to modernize their offices. At prices they can afford. It is doing so by offering "open" computer systems that use standard software. Like stereos that play standard records, cassette tapes and CDs.

6. As a result, Japan is now getting from Japanese companies the computers it needs to modernize its offices. At affordable prices. And American purveyors of "proprietary" computer systems rapidly are losing market share in this, the world's second largest, market. A market they once dominated.

7. Solution of the computer problem has focused attention on software. Japan has not had enough good software at affordable enough prices to utilize computers effectively. For two reasons:

a. Its domestic software companies found such great demand for custom-made software that they could not justify the investments and risks required to produce less expensive (to users) and potentially more profitable (to themselves) software products.

b. Foreign suppliers charged such high prices for their software products that Japanese companies could not afford to use them widely. And those foreign, mostly American, products often have not fit the needs of Japan's market adequately.

8. Meanwhile, Japanese have come to recognize that the software products industry is a publishing and distribution industry quite similar in concept to publishing and distributing books, records, films and other forms of intellectual property. Japanese with the talent to create good computer software have found that they can maximize their own incomes by creating publishable manuscripts and offering them at royalty rates similar to those received by authors of book, music and movie manuscripts. Royalty rates designed to optimize revenue and market share for themselves and their publishers and distributors.

9. And Japanese software publishers and distributors are, increasingly, finding software written by domestic authors profitable to publish and distribute. Much more profitable than lower-quality software written by Americans, which does not fit Japanese market needs and is burdened by self-defeating pricing and royalty structures.

10. So Japan now also is getting the software it needs to modernize its offices. From Japanese companies. At affordable prices. And America's software industry is abandoning the world's second largest market. A market they pioneered and have dominated until now. Surrendering. Silently. Perhaps without even perceiving there was a contest or other contestants.

11. In short, Japan is taming the computer industry and training it to satisfy the needs of its society. It is getting this industry to supply the computers and software it needs to modernize its offices, increase the productivity of its office and manufacturing workers and decision-makers, and complete the transition to an information-intensive economy. So it can compete stronger at home and overseas and, thereby, maintain its prosperity.

12. A side effect of this seems to be that American computer manufacturers and software suppliers are losing their shares of this Japanese market they once dominated. Not because they were "targeted" or pushed out, but because they were not interested in serving the market. Servicing, perhaps, but not serving.

WARNING

American computer manufacturers and computer software suppliers have dominated the world's markets to date. They have dominated Japan's market along with the others. They have faced only slight competition from Japanese companies within Japan and almost no competition from Japanese companies outside Japan. They have been as entrenched in Japan as any Japanese company in any line of commerce.

But they have satisfied neither the critical needs of Japan's society and economy nor those of its corporations and individual consumers. They have not provided the products needed at affordable prices. Hence the Japanese search for alternate sources for the computers and software they need. They have found domestic electronics manufacturers ready and willing to supply the computers they need at prices they can afford. And they have found domestic authors ready and willing to supply the software they need at affordable prices.

The reason this has occurred is not that the Japanese have "targeted" the computer industry, but that the computer industry has not satisfied needs that are critical to Japan's economic health and prosperity.

But the results for American and European computer manufacturers and software producers are as dire as if Japanese had deliberately targeted the computer industry. The results are these:

1. Japan's electronics manufacturers and software authors rapidly are capturing the shares of Japan's domestic market that their American and European counterparts have held to date and appear to be abandoning by Newton's Law, inertia.
2. This is strengthening these Japanese electronics manufacturers and software suppliers and, proportionately, weakening their American and European counterparts. Both monetarily, in revenues

won and lost, and spiritually, in contests won and lost. And, in the long run, in markets captured and surrendered.

3. These Japanese electronics manufacturers and software suppliers also are getting stronger financially and gaining more confidence for another reason: Their approach to the business is increasing the size of the Japanese market at the same time that they are gaining a greater share of it.

4. As they gain financial strength and spiritual confidence, and as they saturate their own market, their natural growth path will be to export. Sooner or later they will begin capturing markets outside Japan. Losing other foreign markets will further weaken American computer manufacturers and software suppliers financially, because of lost revenues and profits. Many of these companies depend on foreign markets for a substantial portion of their revenues and profits. And losing other foreign markets will weaken American computer manufacturers spiritually and psychologically as any competitor's spirit gets weakened by losing contests. Winning those other foreign markets will further strengthen their Japanese rivals for the same reasons.

5. Eventually the contests will be held on America's home turf.

If American computer manufacturers and software suppliers do not want to lose their other markets to their Japanese counterparts, including their own home market, they must learn to compete more effectively in Japan.

RECOMMENDATIONS

I believe that American computer manufacturers and software suppliers must do the following to keep their share of Japan's market and to avoid losing other markets to their Japanese rivals. Including, eventually, their own home market.

1. American computer manufacturers must change their viewpoint and emphasis from maximizing their own short-term financial gains to maximizing the benefits they provide their customers. In particular, they must:

a. Shift away from proprietary products that "lock out" competitors and "lock in" customers and, thereby, constrain their customers' ability to choose products that fit their needs best.

b. Switch away from gimmicks and techniques for avoiding competition and learn to compete effectively. And reap the benefits that vigorous competition brings. In the long run companies do not fare any better from avoiding competition than athletes do.

c. Began emphasizing standard or open products that maximize their customers' freedom of choice (while making the market more competitive).

2. American computer manufacturers have relied on strategies and tactics to avoid competition by "locking out" competitors and "locking in" customers for so long that they may not be capable of making this life-preserving transition on their own. If they cannot do it on their own, perhaps the U.S.

government should consider subsidies or some other form of protection to help them through this transition. Companies like IBM, Digital and Apple are vital to the entire American economy. Helping them, if they need help, should be as justifiable a use of taxpayers' money as bailing out Chrysler was.

3. American software companies must recognize the precarious position that American computer manufacturers have gotten themselves into by relying on proprietary systems that "lock out" competitors and "lock in" customers. Software companies that tie their own product strategies to these proprietary systems are putting themselves in an equally-precarious position. If the proprietary systems go down, those software companies will go down with them.

4. Both American computer manufacturers and software suppliers must develop higher-quality products. They must come to understand that Japanese customers demand, and get, a higher standard of quality than Americans are willing to tolerate. And Japanese suppliers provide such quality. If American computer manufacturers and software suppliers do not measure up to Japanese quality standards now in the Japanese market, they will have to compete increasingly with those standards in other markets.

5. American computer and software suppliers must begin developing products for the world's markets, rather than products that fit only the needs of the American market. And they must become more aggressive in adapting their existing products to markets like Japan's. IBM excels at this. But most other American computer manufacturers and software suppliers do not even seem to care.

6. American computer manufacturers and software suppliers must begin offering their products overseas at fair prices. Prices comparable to those they charge in the United States. Prices their overseas customers can afford. They must learn that overseas customers cannot be "milked" with high prices for long. In the long run, overseas customers will pay no more for a given amount of value than American customers. So charging more abroad than at home for the same value is a short-range, shortsighted way of doing business.

7. American companies, in general, must change their focus from the short term to the long term. If they want to stay in business for the long term. Survival beyond the next quarter and next bonus calculation requires business policies and strategies that are not tied to the next quarter or the next bonus calculation.

If American computer manufacturers and software suppliers make these changes, they stand a good chance of continuing to lead the worldwide computer industry they created. But if they fail to make these changes, America's computer industry probably will end up like its motorcycle, automobile, home electronics, office equipment and semiconductor industries.

And we will go through another round of blaming the Japanese for our own failures. Or will we? After all, how long will the American public accept that excuse?