

# A New Approach for The Information Era

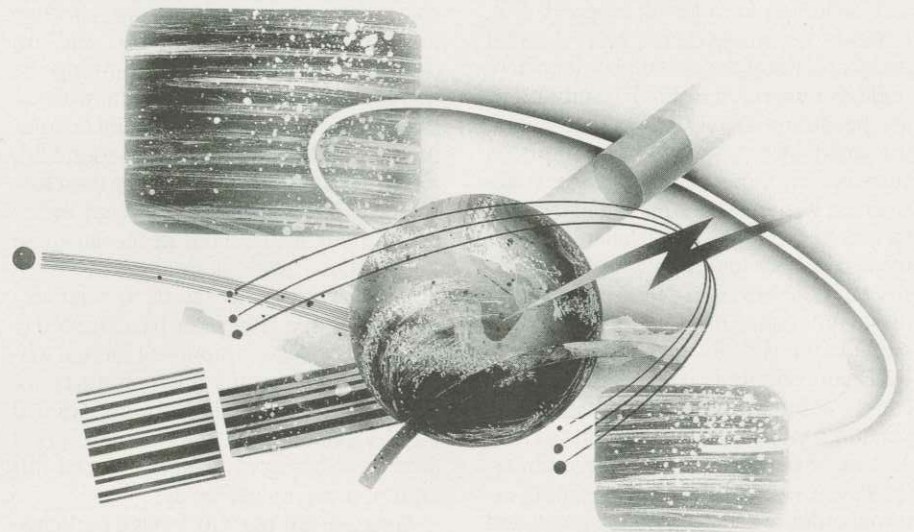
By Jonathan H. Solomon

**A**t a time when no single country is the source of all key technological developments and all products and services exploiting these developments, creative adaptability is a key requirement for industrial success. This the Japanese people have in abundance—it is an integral part of the Japanese tradition.

This creative adaptability has enabled Japan to create perhaps the most successful postwar peace economy and to position Japan in the front rank of societies entering the information era.

Unlike the United States and the leading European countries, Japan's information technology expertise starts from the consumer end and not from the requirements of the military/industrial complex. Japan has an over 50% world market share of most of the critical segments in three of the four key building blocks of the information era: consumer electronics, computers, communications and components (both electronic and materials). The exception is computers, where the Japanese language has acted as a barrier to software development. Despite this handicap, Japan is the only country in the world where the indigenous computer industry has more than 50% of the domestic market.

Perhaps even more significant is the breadth and depth of the Japanese commitment to information technology. At a time when a development in semiconductors is as relevant for a consumer product as for a computer or communications piece, all leading production companies have expertise in each of the 4-C building blocks. And because of the strong relationships between the leading Japanese companies and their subcontractors, excellence and quality are passed down into the vast network of subcontractors. Behind the highly automated factories producing end products of competitive quality there stands an army of subcontractors competing to maintain their position vis-à-vis the master company. These competitive cooperatives have given Japan the lead in consumer electronics and components. While IBM and AT&T are likely to retain their preemi-



nence in computers and communications for the foreseeable future, Japan can be expected to catch up.

Japan's comparative advantage as a manufacturer of information technology hardware derives from its "bottom-up" philosophy in both human and material resources. Once hired, employees are put on an almost continuous motivation and training program. As regards materials, most of Japan's leading electronics companies have their own machinery and materials design and even production departments. They are in daily contact with chemical and metal manufacturers working to develop new materials. Little is left to chance on the production line or in the materials context. In-house expertise in all aspects of the production and product process is considered a prerequisite. Knowledge and technology gaps are considered unacceptable: Where a gap is identified, it is plugged immediately. Until manufacturers outside Japan match these practices, they are bound to be vulnerable to Japanese expansion.

The bonds between manufacturer and subcontractors also exist between a manufacturer and his major customers, and these bonds make it difficult for foreign products to penetrate this very discerning and alert market. They also provide Japanese manufacturers with an almost guaranteed market to use as a launch pad to expand globally. There is no similar guaranteed market in America and Europe

except in the defense and telecommunications sectors, and here manufacturers have tended to concentrate on the monopoly buyers at home rather than competing in harsher overseas environments.

Having established a critical mass of information technology expertise in the production sector, the Japanese are now poised to forge ahead with high-definition television, flat-screen technology and translation machines and to catch up in computing with the fifth-generation computer project.

## Perceptions of change

Equally if not more significant is the almost universal sense of change. This is driving all Japanese to ask, "How will life be in the information era? How can we best redesign and reorganize to fit into this new environment?" Every company and institution has a special unit exploring how best to incorporate information technology products and services.

The Japanese telecommunications liberalization laws of April 1985 have opened the doors for a flood of activity by virtually every quoted company. Diversification into telecommunications is seen as a *sine qua non* for any self-respecting enterprise. It will not, therefore, be surprising if Japan becomes the first society to attune itself best to the full range of information era possibilities, thereby



strengthening its industrial and commercial prowess immeasurably.

The creative adaptability of its people is Japan's secret weapon to safeguard internal harmony whatever the external political or technological situation. Nothing in Japan's long history has prepared it for the task of securing external harmony as a condition for internal progress. It is, however, becoming clearer every day that the guardians of the external order of free trade as enshrined in GATT and OECD are becoming increasingly concerned at the imbalance between those countries such as Germany and Japan where cohesiveness has enabled substantial gains to be made from the external order and those countries that from choice or necessity bear the principal defense burden for the maintenance of this external order—namely the U.S.A., U.K. and France. R&D concentrated on defense is a handicap for some countries, a diversion from straight commercial competition. So long as this structural imbalance continues, the stresses and strains on the existing external order might become too great, and any lurch toward global or bilateral protectionism is likely to damage Japan more than most other countries.

### **T**he restructuring issue

The current challenge for Japan is not technological or internal. It is almost wholly external, and it boils down to a simple issue—can Japan restructure more harmoniously into the international order while maintaining its own integrity?

If the full benefits of the information era are to be passed on to end users, it is essential that the new broad-band infrastructure and the new services be shared and operated on the basis of international cooperation. Yet although international comity and commercial common sense suggest that collaboration spanning the Pacific and Atlantic is needed, there have been relatively few joint Anglo-American-Japanese ventures aimed at a joint Pacific/Atlantic approach to this challenge.

It is noticeable how the Japanese way has enabled Japanese enterprise to become the most powerful force in civilian electronics in the world. This has been achieved by a variety of means—mainly the worthiness of the Japanese work force, but including the free licensing of technology and know-how. Japan has benefited from open international acceptance of capital flows and direct imports. Without this benign external environment, Japanese developments would have been significantly dented. The dominant characteristics of this benign en-

vironment have been open access to know-how and R&D, open access to markets, open access to equity participation and open access to local finance.

The reverse has not been true. Major U.S. companies such as IBM, Texas Instruments and Motorola managed to enter the Japanese market at a formative stage, but Japan pursued an effective policy of welcoming know-how and importing vital machinery but limiting the market entry of the suppliers themselves. Acquisitions and mergers are not as common in Japan as elsewhere, for sound human reasons, and it was and is therefore virtually impossible for a foreign enterprise to buy into a niche in the Japanese information technology sector. Even equity participation has been relatively difficult. While Japan may have needed to adopt this policy of importing foreign wisdom but fending off foreign products until it was able to build a sound national base, Japan is now a dominant world force in information technology and this argument no longer holds.

Japanese law permits foreign participation up to 33⅓% in any basic transmission venture and up to 100% in network services. This is a welcome liberal approach—certainly more liberal than in most countries. Indeed, only the United States and United Kingdom have open telecommunications markets at this time. All nations, including the U.S. and the U.K., treat telecommunications as a sensitive area, but there are ways of protecting legitimate national security interests while maintaining an open-market approach. There is no reason why the Japanese cannot, if they wish, find ways of accommodating full and effective foreign participation in the interests of Japan. Telecommunications is certainly a growth market—indeed, it could become the locomotive to regenerate that general economic growth needed to smooth the employment frictions created by changed trading perspectives. At a time when many Japanese information technology companies will be investing abroad, it would seem to be in Japan's own interests to facilitate overseas investment in Japan.

### **F**ramework for harmony

Consensus is still evolving on foreign entry into the Japanese telecommunications market, but there seems to be a good case for enunciating a new 21st-century doctrine for the development of the global broad-band infrastructure necessary to assist the peoples of the world to benefit from the information era:

(a) All new enterprises, whether initiated in the Pacific or Atlantic basin,

should be open to foreign participation.

- (b) The extent and type of participation should be determined by the partners themselves rather than by governments so long as the participation is within the legal limits.
- (c) Governments should permit choice of technology and choice of facilities.
- (d) Access to new international facilities should be open to all.
- (e) Access to services provided on new international facilities should be open to all.

This is the harmonious way forward and could provide the framework for a charter for the collaborative launch of new 21st-century-type products and services along the following lines. Whenever in the Pacific or Atlantic basin enterprises plan to launch a new product aimed at utilizing the global broad-band network, they should first seek partners on a trilateral basis. Trade friction and protectionist exploitation of standards and regulations arise out of fear of being left behind in the race to apply new technology.

As a world leader in information technology, Japan is in a position to determine the way the world—and the OECD world in particular—approaches the information era. A redefinition of the Japanese national interests is necessary. The more Japan's domestic economy and employment prospects depend on the pullthrough effect of Japan's overseas investments, the more vulnerable Japan becomes to protectionist backlash or discriminatory practices overseas. Indeed, policies to enhance international harmony and collaboration become an economic imperative.

A skeptical world is watching the way Japan handles certain key internal decisions. Failure to take forward-looking decisions in Japan feeds that growing resistance to Japan's legitimate aspirations outside the country. The net result of this negative feedback is that programs of great importance are delayed to the disadvantage of everyone.

The broad-band revolution underlying the infrastructure for the information era provides Japan, the U.S.A. and Europe with a great opportunity to implement an open-market doctrine and a collaborative charter *ab initio*. Just as the Marshall Plan relaunched the war-shattered economies of Europe and Japan on a trilateral basis of cooperation, a new Pacific/Atlantic Information Technology Concordat would be in the interests of the summit seven nations and the EC. This is a goal that both governments and private-sector enterprises should pursue in earnest to create a friction-free information era to everyone's benefit. ●