

Meeting Japan's Challenge

Ninth in a Series

HAS JAPANESE INNOVATION REPLACED GOOD OLD YANKEE INGENUITY?

Not yet. But Japan could close the gap if Americans don't try harder.

The fact is, the Japanese are graduating more engineers; they're doing more nationally-coordinated and funded engineering; and they're also upgrading their well-known ability to implement the designs of others with a quality accent.

Yet in high technology electronics, Americans are both the creators and leaders. And companies like Motorola intend to keep it that way.

For example, take the microprocessor—a tiny chip of silicon containing all the logic circuits of a computer. First invented by our U.S. competitor, Intel, 4-bit microprocessors are the logic brains for calculators and appliance controls. More complex 8-bit microprocessors are used in applications like electronic games, or to improve fuel economy and reduce pollution in automobiles, to mention a few.

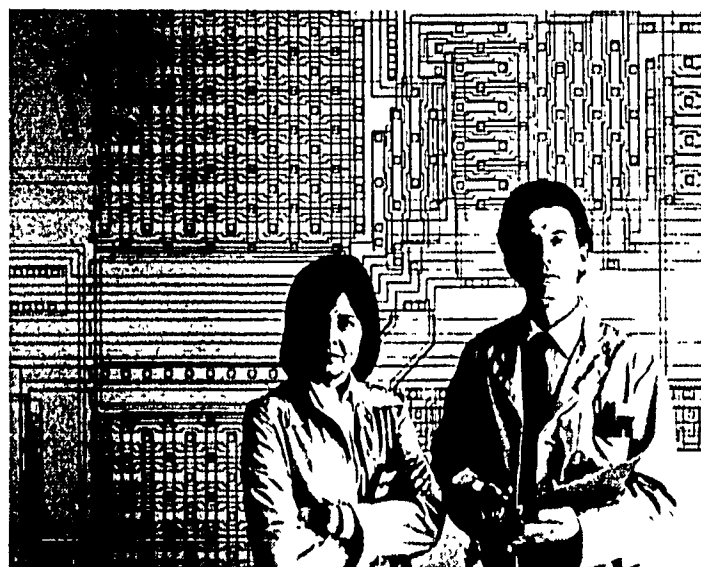
Most of these microprocessors and their computers were created by Americans.

Now the American semiconductor industry has given birth to the 16-bit microprocessor—a whole new generation that's up to ten times more complex and powerful than its predecessors. In fact, a 16-bit microprocessor has the capability of controlling an astounding 128,000,000 pieces of information.

These 16-bit microprocessors were developed and introduced by American manufacturers. Motorola's own version—MC68000—is widely acknowledged to have the most versatile computer architectural structure. You'll find it in new kinds of products never before economically practical: machines and instruments that talk, listen and respond; automatic production equipment that manufactures with higher precision and greater productivity; small home computers as powerful as large business computers built only five years ago.

And as innovative as these products are, new generations of microprocessors continue to open the realms of what's possible. For instance, we have announced a 32-bit version of the MC68000 that is the world's first fully upwardly compatible version of an earlier 16-bit sister machine. But that is not the point.

The point is that innovation and imagination in this field, as in others, is American. It is from this solid innovation base that we must meet Japan's challenge. As competition for world markets becomes more intense, it's this good old Yankee ingenuity that will keep us out front.



*A single engineering drawing for the MC68000 covers an entire wall
Yet the actual microprocessor is only about 1/4 inch square*



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Quality and productivity through employee participation in management.