US semiconductors

Fears for domestic security

Washington

THE health of the US semiconductor industry is not only of economic concern. Recent studies are beginning to suggest that, if the US semiconductor industry continues to lose ground to Japan and other competitors, there could be serious national security implications.

A National Research Council report* concludes that certain critical components such as liquid crystal displays, bubble memories and many raw materials are already unavailable in the United States. So great a dependence on foreign suppliers makes the military vulnerable should imports be cut off for military, political or economic reasons.

The report suggests several solutions to the problem, including stockpiling critical materials, setting up dedicated manufacturing facilities and redesigning equipment to make use of domestic components. But William Hittinger, chairman of one of the National Research Council committees that wrote the report, says the most pressing need is for a better description of the size of the problem. Now, Hittinger says, there is no database that can be used to determine accurately just how dependent is the military on parts unavailable in the United States.

The report encourages the Department of Defense to consider investing in the development of specific components for use by the military. The Pentagon is already involved in programmes to develop very high speed integrated circuits (VHSICs) and gallium arsenide technology (specifically microwave/millimetre-wave monolithic integrated circuits). Although such dedicated programmes have their place, Hittinger believes they tend to lag behind advances driven by the marketplace, making a healthy industry all the more important.

The National Security Council has also asked for a study of the Pentagon's dependence on foreign parts. An interagency group has been meeting weekly at the White House throughout the summer to determine the government's role in alleviating the problem. Darryl Garrett of the Office of Science and Technology Policy, who has been chairing the meetings, says there are some who worry that the semiconductor industry is in a precarious state. If it should go, says Garrett, "some fear telecommunications and supercomputers will be next".

Garrett himself is concerned that his group may be addressing a problem "5 or 10 years after anything can be done about it".

The Security Council report should be finished later this fall. Another report on the topic is being being prepared for the Defense Science Board by a special committee chaired by Norman Augustine, president of Martin Marietta.

Ken Flamm of the Brookings Institution questions whether the semiconductor industry's economic vitality is inextricably linked to national security. Hittinger agrees that the US industry is capable of building a substitute for virtually any component temporarily unavailable in the United States, but says that, even so, the US military could be left with some difficult "work-around" problems.

The US electronics industry will probably welcome the upsurge of interest in its vitality. William Krist, vice-president of the American Electronics Association, says that one aspect of the problem he would like to see addressed is that of the Defense Department's export controls. Krist says that these have had deleterious effects on the industry's international competitiveness. Says Krist, if the Pentagon wants to do something to help domestic electronics companies, his reaction is "Hallelujah! It is about time".

Joseph Palca

* *Foreign production of electronic components and army systems vulnerability*, National Academy Press, Washington, DC 1986.

Soviet Union

Corruption continues

MR Mikhail Gorbachev's campaign against graft and nepotism in the Soviet Union is not proving easy. The Academy of Sciences of Kirgizia is one of the latest objects of high-level criticism for faults ranging from nepotism and personal extravagance among top personnel to falsification of research achievements. But, according to two recent letters in the Moscow weekly *Literaturnaya Gazeta*, the presidium of the academy has not replied to the charges and, although the president of the academy, Academican Murzabek Imanaliev, has resigned, he was immediately installed as director of the academy's Institute of Mathematics in violation of the statutes requiring that such appointments are decided by secret ballot.

Imanaliev, it appears, was personally responsible for many of the abuses. One of the charges agains the academy during the Kirgiz Communist Party Congress last January was that, at the previous congress five years earlier, Imaniliev had reported the production for the first time of powders of iron alloyed with rare earths, obtained by a simple enrichment process using local ore deposits. According to his 1981 report, a pilot plant to produce such powders had already been established at the Kirgiz mining and metallurgical combine. But, despite generous funding and considerable publicity, it now turns out that the specimens produced gave no evidence of the presence of rare earth elements.

Imanaliev had tried to build up the prestige of his academy by hosting all-Union symposia and conferences, often at considerable expense and with massive spending on alcohol, and outfitting offices with lavish Western furniture (disguised in the academy's account as "equipment").

Under his administration, moreover, appointments in the academy and also in the Kirgiz State University were decided not by the statutory secret ballot, but by patronage. Such appointees to academy jobs included his wife, brother and several in-laws. Those who protested against the atmosphere of corruption got short shrift — a scholar who reported that one of Imalaniev's protégés had plagiarized his work found himself suspended from lecturing and banned from publishing in the Kirgiz SSR for five years.

According to the rules of the Communist Party, such a situation should never have been allowed to develop. The member of the secretariat of the Central Committee of the Communist Party of Kirgizia responsible for science and learning should have seen what was happening in the academy and taken appropriate steps. Instead, the incumbent of that post, Comrade Karypkulov, took advantage of the situation to advance his own academic career.

Between 1978 and 1986 de defended his doctoral thesis, published five books and appeared as author or special editor of 16 special scientific studies. He also managed to get himself elected as a corresponding member of the academy, over the heads of better qualified candidates. His removal from party office, last year, as an early victim of the Gorbachev reforms, signalled the first enquiries into academy-malpractice.

Many questions still remain unanswered. In particular some unknown patronage must lie behind how Imanaliev's original appointment as president of the academy, particularly as his presidency dates from the very day he was elected to full membership of the academy (15 June 1979).

Moreover, Imanaliev's "illegal" appointment as head of the Mathematics Institute, immediately after his "voluntary" resignation from the presidency, indicates that, in spite of Party and press criticism, patronage is still a major factor in Kirgiz academic life. Imanaliev and Karypkulov were clearly supported by a major infrastructure of corruption which seems still to operate.

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