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## **China threatens America's lead in technology**

By Ernest Hollings and Charles McMillion

China's soaring spending on technology research and development now exceeds that of Japan. An authoritative recent study shows that if current trends continue, China's R&D spending will pass the European Union in four years and the US in seven. If China's spending continues to accelerate or if the US rate slows, China could be the world's leader even sooner.

Make no mistake: with China's much larger population and lower production costs, the only way the US can maintain its high standard of living and military security is to retain vastly superior technology within its borders. This does not mean global companies incorporated in Delaware but producing in Shanghai; it means companies working within US borders.

The Organisation for Economic Co-operation and Development finds that **R&D spending is rising by over 20 per cent a year in China, but only by 4 per cent a year in the US.**

China's stunning technological advance is central to its government's elaborate and "scientific" industrial policies.

Beijing's latest five-year plan builds on the success of the past, collaborating to gain the best expertise of the best global companies and only now starting to champion independent Chinese brands.

**Unlike Japan, China's policy has drawn virtually all the world's leading technology firms to collaborate on R&D as well as production in China.** Spending figures alone therefore understate its progress. China has opened pipelines into the global technological, financial and managerial capabilities of the world's leading enterprises.

The media show little interest in the \$1,200bn (€28bn) US trade deficit with China that has been accumulated over the past decade.

As this massive deficit has built up, the US economy – in spite of \$11,000bn in new government and household borrowing – has grown at a slower rate than the world economy. China has grown three times faster.

US trade deficits increasingly reflect more than the loss of current productive capacity. They also represent the weakening of the technological superiority that kept the US and much of the world militarily safe and prosperous for more than 60 years.

Traditional US surpluses in the global trade of advanced technology goods were lost for the first time in 2002, and since 2004 the deficits in technology goods are larger than the

surpluses for all royalties and fees on so-called intellectual property – including franchise fees. In other words, since 2004 the US has a global deficit in technology goods and services.

China – including the powerful global companies that produce there – is central to this historic technological shift. US technology trade deficits with China started in 1995, concentrated around information technology. They accelerated and spread rapidly, and now include most technology products.

If it were not for exports from the US of Boeing aircraft and Intel microprocessors – industries in which China is concentrating R&D collaboration – the narrowing of US technology leadership would already be much more obvious.

It is true, as one manufacturer told us, that most R&D in China remains a variation on the theme of reverse-engineering. It knows its vastly lower production costs allow “fast followers” to reap much of the financial benefit from the innovations of others.

But China has also achieved stunning progress with technology breakthroughs in such vital fields as wireless communications, permanent magnetic levitation rail transport, missile and spacecraft technology, and much more.

China’s massive efforts to establish new international technical standards to allow its companies to (even more freely) bypass foreign patents – and require US companies to pay royalties to China – are among today’s least understood and most important economic and military issues.

What matters most is not whether any group of politicians or lawyers can agree that China is acting “fairly” or “unfairly”, or “legally” or “illegally”. It is not necessary to debate motives that China’s leadership may or may not have beyond assuring China’s own prosperity and security.

What does matter is that one of the most crucial US national economic and security interests is to assure that vast technological superiority remains within our borders. This vital national interest is not being protected and is now in grave and immediate danger.

*Ernest (Fritz) Hollings is a former US senator. Charles McMillion is president of MBG Information Services, a business information company*