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PS/ *Secretary of State for Industry*

Michael Alexander Esq
Private Secretary to
the Prime Minister
10 Downing Street
LONDON SW1

15 September 1980

Dear Michael,

I attach a note on UK innovation for the Prime Minister's speech in Bordeaux this coming Friday. The note was prepared by Dr Duncan Davies, this Department's Chief Scientist.

*Yours ever,
Peter Stredder*

PETER STREDDER
Private Secretary

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UK INNOVATION

Since the war, Britain has fully maintained her outstanding record in bringing quite new concepts to commercial profit. Many of these are now widely used internationally that it is easy to forget their origin. In the glass industry, nearly all flat glass is made by Pilkingtons' float process, in France under licence to St Gobain. Pilkingtons also, from a government basic invention, developed glass-reinforced cement. This is an outstanding lightweight strong skin material that permits quite new architectural concepts, for example that used in the Credit Lyonnais building in London. In automobiles, there is a further Pilkington success in the shape of their ten-twenty windscreen that bring together the merits of toughened and laminated glass so as to preserve the driver's visibility after an accident. The key innovation for the transverse-engined car, including ~~the~~ Renault, is the GKN constant velocity joint for driving steerable front wheels via a differential: this originated as the British 1950 Razeppa joint for military vehicles. Hydroelastic and Hydropneumatic suspensions are further success in this very mature industry. British-developed pharmaceuticals and agrochemicals are also so widely used, under trademarks of so many nationalities, that it is easily forgotten that we invented the most successful drug for angina and related cardiac malfunction, the second and third generation broad-spectrum



antibiotics (to add to our original penicillin success), and, most recently, drugs for more basic attacks on breast cancer and gastric ulcer. Our Agricultural Research Council invented the new stable and potent synthetic and non-toxic pyrethrin to their insecticides, and the non-persistent herbicides that increase crop yields and can replace ploughing. In your area of la telematique, we took the lead in developing the television set as a data terminal, with the prestel system for acquiring information via the telephone system (commissioned fully and commercially in October 1979) and with the teletext system for transmitting news and other information on the TV system: we have pioneered low attenuation optical fibres and optical data storage. Data handling and manipulation - ^{eg} stereoscan microscopes, medical scanners, is one of our special software skills.

Note Further electronic/data handling investions include the ICL Distributed Array Processor, which pioneers parallel processing, (much faster and more versatile than present methods). But is is not yet fully commercial and need much software development. The virtually universally used liquid crystal display system for watches and calculators comes from Malvern/Hull Univ/BDH but makes relatively little money for us; because we don't have a watch



or calculator industry ^{we can} ~~team~~ only sell the chemicals. Quantel's TV studio equipment greatly assists the assembly of programmes from different cameras ("frame storage"). And of course there are many other chemical inventions.