products such as hand held calculators and ever smaller tape recorders and transistor radios were already in evidence and many fantasized about a world ruled by IBM.

The critical ruptures, I think most people would agree, were rather the bold technological leap which produced the microprocessor or what is known as the-computer-on-a- chip in 1969 and the shift from communications and computations based on analog, mechanical processes to those based on digitial or electronic signals. These changes transformed computers from mamouths into micro-midgets and made them mobile, agile and adaptable to almost any situation. They speeded up transaction time in the transmission of voice, video and data as we moved from electromechanical to digital switching systems, they accelerated computation time to nano-seconds, increased capacity from kilobytes to gigabytes and shrank the size of equipment to fractions of a micron.

What did all of this mean for production. First, as the number of functions that could be crammed onto a chip increased and costs fell, there was incentive to build intelligence into all products. The knowledge-intensity of new products thus increased and along with it, the R&D costs needed to generate a steady stream of new products and the managment technologies required to organize innovation. Second, enormous creativity was unleased with the result that new products and new product generations began to emerge with increasing rapidity. But the 1970s and early 1980s were a period of slow growth. The result was an intensification of competitive pressures within markets around the globe, not least because ever wider markets were required to amortize the rising costs of R&D –telecommunications are a good example. Thus competition among firms became both more knowledge-intensive and it globalized. This, however, led to a considerable increase in uncertainty for business since ruptures in existing technological trajectories were unpredictable and the new knowledge-intensive basis for global