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Editorials

I was delighted to discover that the Press of my old University was publishing this new Journal, "Robotica", which deals with the comprehensive range of subjects, problems and technologies involved in the application of the "intelligent" machine tool known as a robot to human affairs. My interest in this subject dates back to an article in the "Harvard Business Review", if I am not mistaken about 1950, in which John Diebold coined the word 'automation' and predicted, with extraordinary foresight, so many of the developments with which we are familiar today. But automation remained a limited, if significant process until the semi-conductor arrived to generate that exponential fall in the cost of logic processing which has altered in a most fundamental way the relationship between man, and the machines and information which he has served and which will now serve him, always to his general advantage though often to the particular disadvantage of defineable groups or individuals. The reconciliation of this balance between general and particular interests is undoubtedly the central political problem of our time. "Robotica" will doubtless address the social and political implications of this dilemma, as well as the technical and scientific questions which intrigue even those who do not understand their complexity. The new journal has immense scope and I wish it every success.

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The British Technology Group (*BTG*), formed in September 1981 by bringing together the National Research Development Corporation (*NRDC*) and the National Enterprise Board (*NEB*), has been active in promoting robotics in the U.K. since its creation. Before that both *NRDC* and *NEB* had separately appreciated that in the UK robotics could help to resolve shortage of skills in engineering as well as improving manufacturing productivity and new product lead times. *BTG* continues to see the whole areas as one of major significance, attaching particular importance to developments of visual and tactile sensors and off-fine programming.

In the years from 1975 to 1978, *NRDC* contacted a number of UK companies with a view to persuading them to develop robots in the UK with *NRDC* development finance, but at that time it proved impossible to raise any enthusiasm. However over several years, *NRDC* had formed a friendly link with Mr Joe Engelberger, the 'father of robotics' whose company, Unimation Inc., had launched the first Unimate robot in the early 1960's. That friendship helped to persuade Unimation to expand its UK sales office into a manufacturing organisation, and in 1979 *NRDC* agreed to provide £420,000 along with some Department of Industry finance to redesign the PUMA robot for the European market and manufacture it at Telford, Shropshire. The Telford Development Corporation provided a new factory for Unimation to manufacture in the UK and the first Telford built PUMA was sold in 1980.

The success of the PUMA (£3.5m sold in 1982) has led to *BTG* agreeing to provide a further £2 million for development at Telford along with some £1.35

million of DTI grants for futher developments, including the design of a completely new electrically powered robot.

Meanwhile in 1979 *NEB* became involved with a company playing an important part in the development of robotic components in the automobile and other industries.

Another key investment by *BTG* in the field of robotics is in British Robotic Systems Ltd, a wholly owned *BTG* subsidiary, whose multi-grey level vision systems are considered to be amongst the most highly developed available. One of the key areas in robotic systems is vision, and *BRSL*'s continued development of complete vision systems for robotic applications is a sure sign of its growing importance.

In addition to the finance made available to Unimation (Europe) Ltd and *BRSL*, *BTG* is actively exploiting University inventions in the field of robotics, some of which have already resulted from the Science and Engineering Research Council's Robotics Initiative. This technology transfer activity is likely to grow as more inventions, particularly concerned with robot guidance and manipulation, arise from the university-industry partnerships created by the *SERC* scheme and as *BTG* as a whole becomes more oriented towards the transfer of technology.

In my view British technology can contribute much to the world of robotics, and *BTG* will play its role to the full in the support of this technology. In particular, by concentrating our support and effort toward applications development we can help to ensure that in the UK robots are used to the maximum advantage. As a result British manufacturing industry will have the best of robotics skills available to it on its own doorstep.

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