THE ENHANCEMENT OF THE INDIVIDUAL'S EDUCATION AND TRAINING THROUGH INFORMATION TECHNOLOGY

> "In written communication, the imagination converts codes into a version of reality, and the mind reasons its way to judgements, convictions, and actions. With television, by contrast, movement, sound, and colour rush experiences directly to the senses."

(Michael J O'Neill, US Author. The Roar of the Crowd: How Television and People Power are Changing the World)

I think that short extract from Michael O'Neill's book on television can equally be applied to every area of communication, and by that I include not just television, but all forms of telecommunication, and more particularly that provided by personal computers (PCs) and access to the Internet. Entrepreneurs and people in business are in business specifically to make a profit in order to, presumably, invest some of that profit in research and development. Or to design bigger, smaller, better, faster, slower or cheaper equipment to do the same or similar tasks, and make them more accessible by a greater number of people (be they companies, individual customers, students or academic and training institutions).

In the case of the Internet it is now possible to not only use your PC for sending e-mails around the globe or for surfing the web, but you can also access and download all types of information and, in some cases, access all types of educational films. However, it is not the Internet itself, but the use to which we put such equipment and networks. Some might suggest the possibilities are almost limitless, in order to better understand, educate, enlighten and train successive generations in order to maintain momentum in the still expanding global village. I don't just mean in business-to-business (B2B) or business-to-customers (B2C), but in meeting the social and educational demands of society and as a means of breaking-down the social divide. Computers and the Internet are also powerful tools in every individual's need for, and right of, access to knowledge and information for Continuing Professional Development (CPD).

Much of the fault for the failure to provide appropriate levels of education and training, and advancement courses, for all people in Britain stems from the Victorian attitude, still advocated in some quarters, that individuals are responsible for their own lives and education. It appears to have taken most of the 20th century for governments in Britain to even begin to understand and perhaps even acknowledge the impact that education and training has on the economy, and more particularly when related to the introduction of highly automated machinery, equipment and systems both in manufacturing industries and in the service sector. The only way to reduce the social divide is to break down the barriers of access to knowledge and information and one way of achieving that is through greater access to IT systems and networks.

"Those who have access to such practical training on new technology and programmes are more likely to succeed than those who, for whatever reason, cannot afford or are unable to use such equipment. Therefore it is imperative that government makes much greater effort to invest in the provision of any and all such equipment and programmes to enable successive generations to keep pace with the growth in global expansion and more especially in the use of such systems in industry and commerce for design and research and development. A failure to do so will commit this nation to not only failing standards but failing political, economic, social and technological systems and standards."

I say that, without fear of challenge, because real-life success cannot be measure simply in terms of academic ability, but gained, more usually, from everyday activities including practical, professional and vocational programmes. Indeed, research by Professor Robert Sternberg, an eminent psychologist at Yale University in the USA, suggests that much greater success is achieved through practical intelligence and the ability to respond to, and deal with, practical problems of everyday life.

Further, we should look at organizations as places where problems tend to arise continually and are being handled and dealt with all the time. If pressed, I can think of no greater example of pressure and dealing with immediate and dangerous practical problems, indeed ones involving the possible loss of life, than members of our Armed Forces, but then again I am biased, so one can also consider the professionalism and response approach to emergency 'crash-teams' in hospitals. Perhaps it is the ability to deal with practical problems and provide solutions that indicate a greater measure of success?

But returning to the subject in hand, that of information technology for the future. In my view, the invention of the microchip and the rapid technology revolution that followed (that is the computer followed by the personal computer, and later the laptop computer, and higher speed data networks in the 1970's and 1980's) are what caught Britain in its workforce totally unprepared for the leap forward in working practices and procedures and possibly led, because of the failure to invest in new equipment, to the loss of our industrial and manufacturing base.

"Computers and robotics brought economic and social change and we were not prepared for the subsequent fall-out."

The question is, will successive government administrations appreciate and understand the importance of investment in education and training and in research and development to secure employment and economic prosperity for future generations? As a 'born-again cynic' somehow I doubt it because too much effort is expended on 'short-term' projects that achieve a higher profile rather than on longer-term investment looking a decade or more ahead.

It is the relationship between education, training and employment that appears to create the most confusion as to whether education is an end in itself, or, whether education is designed to prepare people for employment, or, whether the content of academic programmes are what determine the future paths of employment. And, the supplementary question is whether an apparent shortage or shortfall of workers in a particular profession should effect change in the school curriculum?

Until employers and educationalists can get to grips with, and define, the fundamental reason for education and academic courses, it seems to me that there will continue to be confusion and a lack of momentum, that is because it takes people with experience, knowledge and ability to get the message through to politicians, the ones who hold the purse strings. It is, possibly, one explanation for the, generally, lower levels of productivity and competitiveness in Britain when compare with, for example, the United States, France and Germany.

It is the role of government, aided and assisted by educationalists and academics to ensure that sufficient funds are available, not just for primary and secondary levels of education, but for the provision of other centres of further and higher learning to enable people to train and re-train to meet the demands of business, industry and commerce. And it is the role of business, aided and assisted by academics and educationalists, to ensure that the school curriculum includes such courses of instruction that are relevant to the demands of the workplace.

It is suggested that when you embark on a programme of people-centred management, by concentrating on your most valuable asset and resource, then higher levels of product quality, productivity, competitive advantage and profit are achieved. At the same time customer satisfaction increases and employee involvement and commitment are also increased. Some companies have taken up the cudgel and are making efforts to being their workers up-to-speed, so to speak, with PCs and all that the Internet can offer.

The Ford Motor Company, for example, has embarked on a programme of providing free computers to all its workers. The reason being, allegedly, to encourage workers to understand and learn from the latest technology by taking a computer home and surfing the web in their own time. Simultaneously the organization has set up a company cyber-store and an employee-wide Intranet to keep their employees informed, presumably, of company strategy and decision-making.

Conversely it could be suggested that Ford is not only reducing the cost of printing and distributing internal memoranda, but, is also keeping their workers involved, and not only thinking about improving work processes and procedures, but also spending through the company shop.

Another social dimension is that employed by the UK Government. It has set up websites for each government department to enable anyone with access to a PC and a connection to the Internet to access government draft papers and documentation. At various department sites people can complete, electronically, forms and questionnaires covering many areas of government business. Apparently, if you complete and submit your annual tax form electronically, you can achieve a small saving on costs? Again, the question must be where does that leave those less able or less capable or who do not have access to PCs and the Internet, the poorer and older levels in society, and what is government doing to help those people improve their lives?

In the case of Internet sites for the purchase of, for example, electrical, electronic and white goods, the ‘Which’ magazine organization has established a Code of Practice, through a Red Kite Mark type symbol, that indicates the website is checked and verified by ‘Which’ staff. If the company breaks the Code of Practice it is removed from the list of approved sites. It is a way of indicating to prospective customers that the operation is genuine and it is something that, perhaps, all on-line trading companies should seriously consider belonging to.

And because of such competition, some high-street retailers are occasionally prepared to match the price quoted on on-line Internet sites, provided you can prove the difference in price. But, again, only those with PCs can take advantage of what are, supposedly, cheaper and more competitive prices for such goods.

And last but not least, home-based PCs and the Internet allow for the greater use of teleworking for many professions and demand, in turn, much greater flexibility, in terms of working conditions, working hours and availability, from employers. Being able to work from home on a permanent, semi-permanent or occasional basis reduces stress for individuals from commuting to and from work and reduces congestion on already grossly overcrowded, unreliable and inefficient forms of public transport. It is most unfortunate that the government and major telecommunication network providers have not seen fit to pursue a vigorous policy and programme of connecting schools, colleges, places of further and higher education and individual homes to the Internet through wireless and Digital Subscriber Line (DSL) technology.

The real danger, to UK, is one of complacency in that Far Eastern nations are already well ahead in the introduction and much greater use of PCs and the Internet, not just for education and training but also as powerful tools in the design and manufacturing processes throughout industry and commerce. As Sir Claus Moser, later Baron Moser, said in his presidential address to the British Association for the advancement of science in 1990,

> "This country (Britain) is now in danger of becoming one of the least adequately educated of all the advanced nations, with serious consequences for its future socially, economically, technologically and culturally. I cannot understand how any government can fail to make education its top priority, given what is at stake, for our children and country."
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> **(Sir Claus Moser (1922 -) President, British Association for the Advancement of Science)**

The pace of technological change and the introduction of new technology, in Japan, the Philippines, Singapore, India, South Korea, China and Taiwan, is considerable and is well ahead of most advanced industrial nations. The pace of socio-economic change is such that it is possible that the former *'Tiger'* economies will, once again, go for growth through greater liberalism and in the process will outstrip socio-economic change in Britain and other European countries. And, as an additional note, China already has the biggest manufacturer of PCs in the world.

Most developed countries, and certainly in the UK, now employ more of their people in the service sectors and jobs in manufacturing, whether light or heavy electrical or mechanical engineering, have gradually moved to developing nations where labour, service and material costs are lower. That is why it is imperative that government pursues an education policy that allows for much greater use of PCs, software programmes and the Internet, and provides courses at colleges of further and higher education to enable anyone to learn about the Internet and how it can be used to advance people at every level. It is only through making such equipment and systems more widely available that the general level of ability and competency will increase.

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