

SET THE AGENDA

The President's Address 2004

Professor John O'Reilly
FREng FIEE

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Engineering the future

SET THE AGENDA

by Professor John O'Reilly FREng FIEE

It is, as they say, 'a truth universally acknowledged' that we are in transition from the 'industrial age' to a 'knowledge age' – with 'information age' somewhere in there too! Advances in science, engineering and technology (SET) and ensuring that we have an adequate supply of skilled people in these areas are crucial to success – so much so that it's not so much a matter of 'Set the agenda' as 'SET, The Agenda'!

Governments around the world are seeking to measure up to the challenge of increasing national investment in research and innovation, exemplified in the UK by the publication in July 2004 of a ten year science and innovation investment framework which signals very clear commitment to developing the knowledge economy. So what, then, are the implications for business and for the 'science base' (universities and the like)? And what of research funding agencies? In the UK, as elsewhere, many companies increasingly look towards universities for basic research and there are some excellent examples of strategic partnerships that have developed to provide for this. Particularly powerful are the three-way partnerships wherein industry, universities and 'arms-length' funding agencies such as the Engineering and Physical Sciences Research Council (EPSRC) draw up a shared agenda and secure mutually beneficial leverage from one another. The benefits are far more than financial – or more than the immediately perceived financial. Experience shows that greater engagement with universities encourages industry to appreciate the need for and to 'buy into' the longer term, while universities find that the more intimate engagement with industrially-inspired challenges can open up new intellectual horizons for research.

And then there is the nature of research in the 'knowledge age', increasingly recognised as inherently interdisciplinary. Of course, in one sense it was ever thus; but never more so than today to an extent that has led Sir David Brown, our outgoing (in both senses of the word) President, in discussing the implications for the IEE and the engineering profession more generally, to coin the evocative phrase '360° Interdisciplinarity'. The pace of change and the intimacy of interaction have raised the bar considerably. There are profound implications for the way we need to educate, train and support the continuing development and networking needs of professionals in engineering and technology. This address will explore these issues, drawing on examples to illustrate the importance of SET in general and the particular benefits of interdisciplinary engagement in strong partnerships based on industry and universities working together.



Professor John O'Reilly FEng FIEE

Professor O'Reilly started his career as a student apprentice at the Royal Radar Establishment in 1963, studying part-time for an Ordinary Certificate in Engineering and then for a degree in Electrical Engineering. He graduated from Brunel University with First Class honours in 1969 and then undertook work on optical fibre communications with Ultra Electronics Ltd.

From 1972 to 1978 he was a lecturer in telecommunications at the University of Essex. During 1978 and 1979 he worked on optical fibre transmission in the submarine systems division at the Post Office Research Centre, Martlesham. On returning to Essex, he was appointed Senior Lecturer in Optical Communications, moving in 1983 to take up the position of Professor of Electronic Engineering and Head of the Department of Electronic Engineering Science at University College of North Wales, Bangor where he served concurrently as part-time Chief Executive and Deputy Chairman of IDB Ltd, a small company specialising in instrumentation developments.

He was a Principal Research Fellow at BT Laboratories during 1993 and 1994 moving then to University College London to take up the newly established Chair of Telecommunications. From 1997 to 2001 he served as Head of the Department of Electronic and Electrical Engineering before being appointed Chief Executive of EPSRC, on leave of absence from UCL.

His technical interests focus on Information and Communication Technologies with an emphasis on communication systems and networks. He has published over 350 journal and conference papers and three books on telecommunications. He chairs the UK's Network Interoperability Consultative Committee (NICC) for Ofcom and the industry and has served as a specialist advisor to UK Government, to the European Commission and more widely.

A Chartered Engineer, he is a Fellow and former member of the Council of the Royal Academy of Engineering, a Fellow of the Institute of Physics, a Fellow of the British Computer Society and President of EUREL, the confederation of European Electrical Professional Societies. He holds the PhD degree from the University of Essex and a higher doctorate (DSc) degree from Brunel University. He is an Honorary Fellow of the University of Wales, Bangor, and holds an Honorary Higher Doctorate of the University of Essex.

He received the 2003 J J Thomson Medal of the IEE 'for distinguished contributions to electronic engineering'.