‘The Future is Not What it Used to Be!’

Professor John Wood

Our world is changing at a faster rate than ever before. Global communications and an increasing awareness of the global challenges facing all citizens have opened the minds of policy-makers and governments to the immense task before us. Will they accept the challenge? Solutions will require new ideas, discoveries, talents and innovations. A year ago, the then European Commissioner for Research, Janez Potocnik, wrote of these issues: ‘This is a time of great opportunity that will involve high risks.’ So are our universities up to playing their role in this developing environment or are they caught in a time trap based on outmoded practices and a lack of clarity of mission and purpose? There is no doubt that universities are seen as significant and possibly the main players to ensure that the world as we know it does not fall apart either because of global warming, pandemics or unprecedented societal unrest, as the population grows and resources decrease. Yet Potocnik wrote these words in the context of knowing that the majority of the 4,000 universities in the European Union (EU) are not fit for purpose, whether by fostering outmoded curricula and governance models or by having insufficient vision of the future and their role within it.

By contrast, members of the Association of Commonwealth Universities (ACU) faced up to their potential contribution to achieving the United Nations’ Millenium Development Goals (MDGs) at their annual conference held in Cape Town in 2010. With over 500 members spread right across the Commonwealth, the ACU has a unique opportunity for global networking, mutual support and benchmarking among its members. With almost a hundred years’ experience, underpinned by mutual respect between members, the ACU has to be prepared to address the increasing demands placed on each individual institution within its local environment while working together for the common good. Is this mission impossible?

Well, one starting point that is not really understood is that the term ‘university’ means different things to different people. For some, fostered by political rhetoric, it is an extension of schooling

and concerned with mass education. For others, it is a dynamic research environment working hand in glove with governments and private industry. Are these in conflict? ACU members represent all shades of the spectrum with vast regional differences. Members have unprecedented experience of local conditions and one of ACU's aims is to share these for the benefit of all; exchanging best practice governance models, identifying external expertise and running training courses for university managers are among the ACU's everyday activities. Yet what of the future?

Probably the number one priority is for members to be able to take advantage of the potential of the virtual learning and virtual research environments. The ACU will advocate that ensuring all institutions have sufficient broadband services to take part is just the start of making the benefits of the virtual learning and virtual research environments available to all. This is not about making it easier to email each other, but about the way teaching and research will be done in the future. As grids and clouds[1] develop, provenance and curation of teaching material and research data become more and more critical. Teaching will become less about information transferral and more about a discussion of ideas based on what students have learnt from specifically approved websites. Experience at the University of Strathclyde, Scotland, in using this method for certain courses in mechanical engineering has shown a marked rise in standards of understanding and reasoning among students.

Probably one of the greatest opportunities in self-teaching will be students accessing electronic publications that are linked to the basic electronic data. The students or researchers will then be able to re-analyse the data in the light of other findings from other publications. Many countries are now developing policies for research data management and are starting to realise what the true cost of this exercise will be. Who will pay? Will it be governments, research funding agencies or the universities themselves? Indeed, the risks of not finding a long-term solution are high.

The electronic revolution will mean that so called 'citizen science' will move from a minority to a majority sport. Even today, it is estimated that 50 per cent of astronomy research is undertaken by amateurs working at home. It is now possible to do experiments on large equipment remotely in real time. This requires trust and an ability to interface with different disciplines and different cultures. The opportunities are not just confined to the sciences: projects such as CLARIN (Common Language Resources and Technology Infrastructure), which is a semantic web-based language repository, has shown how humanities are also grasping the opportunity. Likewise, remote access allows non-research intensive universities to take part in global experiments. Nowhere is this more relevant than in the realm of biodiversity and health, where local monitoring can contribute to global analysis that might be undertaken by the computing staff at CERN (European Organization for Nuclear Research) thousands of miles away. The outputs will be directly relevant to influencing local and global policy-making.

ACU members will interface on all these fronts with each other, looking to see how best to place themselves for the future. They know that the responsibility for training their staff, the way their institutions are managed, and their approach to education and research will be critical if they are to contribute meaningfully to achieving the MDGs. The future is going to depend on universities facing up to these challenges together, and part of the ACU vision is to help our members to do just that.

Endnote

[1] A grid is a collection of computers, usually owned by multiple parties and in multiple locations, connected together so that users can share access to their combined power. A cloud is a collection of computers, usually owned by a single party, connected together so that users can share resources, software and information on computers and other devices on demand.

PROFESSOR JOHN WOOD is Secretary General of the Association of Commonwealth Universities (ACU). Before arriving at the ACU, John was senior international relations adviser to Imperial College London. Prior to taking up this position, he was Chief Executive of the Council for the Central Laboratories of the Research Councils (CCLRC) from 2001 to 2007, while on leave from Nottingham University where he was Dean of Engineering. His research has been in the area of materials processing of non-equilibrium structures, where he has over 240 publications and 14 patents.