Sir Alan Langland's Welcome to UCISA2008

Good afternoon everyone

--- and welcome to Glasgow, my home town, Scotland's largest city, host to the 2014 Commonwealth Games and a place which boasts three excellent universities (four, if you include the new University of the West of Scotland which is just outside Glasgow), an internationally renowned School of Art, the Royal Scottish Academy of Music and Drama and an elaborate network of further education colleges.

Universities and other tertiary education institutions in this city make a huge and positive impact on economic development, social cohesion and cultural vibrancy just as they do across the UK and across the rest of Scotland.

Scotland has a great tradition in education –

- it has five universities in the world's top 200 (including Dundee) – more per capita than any other country
- it provides very high standards of learning and teaching – measured by student satisfaction and external scrutiny of academic quality, and
- it leads the world in the numbers of research papers and citations per unit of expenditure and in ensuring effective knowledge transfer.

Universities in Scotland are an engine for innovation, creativity and change and they are outward looking, ensuring Scotland's place in the world by attracting international talent and international investment.

Of course, Scottish universities also face challenges – including demography, the competitiveness of the international research community, increasing costs and reductions in the rate of growth in public spending. Faced with this we can either get caught like rabbits in the headlights or we can work smarter to ensure academic progress and promote new business processes which improve our agility and productivity. So we must not freeze – it is much more fun to tackle these challenges head on. Doing so requires coherence and the alignment of key strategies including effective information management and IT systems – and IT managers who not only provide excellent network infrastructure, servers, software, network management, security and disaster recovery but also see the bigger picture, including the requirement for *e*-learning as part of a blended approach to education and the increasing reliance of research on communication via international networks, interdisciplinarity and largescale data storage. Of course, the *quid pro quo* is that institutions – even when under pressure – have to recognise the importance of funding IT in a sustainable way.

The notion of IT departments as *valued business partners* is a good one but all too often there is a gulf between IT specialists and senior managers – as one commentator put it:
"Technology is ruled by two types of people – those who manage what they do not understand, and those who understand what they do not manage".
Closing this gap is an essential prerequisite to achieving progress.

In learning and teaching the challenge is to move beyond the rhetoric and advice of JISC, the funding councils and the Health Education Academy to deliver

reliable services to staff and students. This means striking a balanced view between the educationalists, the technologists and the business case for investment in *e*-learning – not always an easy set of tensions.

In Dundee, the VLE is an essential ingredient of a blended approach to learning and teaching with most undergraduate students now graduating with online module support for all four years of their studies. And, over time, we have been able to incorporate new elements into the VLE, giving blog, wiki, online assessment, *e*-Portfolio and plagiarism detection support – functionality and flexibility which supports different models of learning and teaching.

One recent success has been to build an integrated component for the Blackboard software that provides self and peer assessment functionality, and then to work with Blackboard to have it incorporated into their core software. Blackboard have publically acknowledged that they purchased this component from the University of Dundee and we are the first educational institute to partner with Blackboard in this way. The new self and peer assessment system is now available, embedded in the Blackboard 8.0 software, which has just been released.

So good progress is being made but many challenges remain. I can think of four:

(i) the requirement for business intelligence utilities as part of our VLE provision – for example to help us understand patterns of student behaviour and provide early warning of underperformance and to provide metrics which link finance, workforce and activity. Of course, there is a fine balance to be struck here, ensuring that the VLE is primarily a support for students and staff rather than a crude management tool.

(ii) the emergence of Web 2.0, or open web based collaboration and communication. Certainly, these sorts of tools and approaches are important in formal learning environments – for example students can use wikis and blogs to construct and evidence their learning – but there is perhaps a need for caution in relation to the use of personal areas such as Facebook, Bebo and MySpace. Surely the emphasis should be on formal online learning which universities manage through their formal systems and professional staff – at the very least, this is a point that needs to be carefully debated.

(iii) there are still issues to be resolved in relation to IP for learning and teaching resources although I believe that the position is becoming much clearer with time and that we are moving to a position where we can make optimum, shared use of expensive high quality online resources. The ground rules on copyright, IP and licensing issues need to be kept simple and I favour an open, collaborative approach. The principles established in JORUM – the JISC funded collaboration operating in UK higher and further education to ensure long term access to publicly funded learning and teaching resources – provide an excellent model which can be adapted for many purposes. For example, I and others have been able to take the same approach in galvanising the efforts of 27 medical schools worldwide which operate

under the banner of IVIMEDS – the International Virtual Medical School.

(iv) my final challenge is a plea for simplicity which recognises the technological limitations of some academic staff and the time constraints of others – the requirement is for straightforward web based systems consistent with their expectations and capabilities – we need Heineken service orientated architecture which reaches the parts that other systems don't reach – all the way to user needs.

For my research example, I draw on the continuing need to build relationships with the NHS. The key challenge for the NHS is to enable better management of patients through the effective use of a unique patient identifier, the development of electronic patient records and a system of record linkage, improving levels of care and safety.

The opportunities for University based research are in developing new platforms for integrating genetic and healthcare information, supporting the development of new diagnostic tests and predicting the complications in the use of medicines. At the heart of this relationship, is the need to engage with the clinical community and the public to constantly reassure them on confidentiality, privacy and the rigorous anonymisation of data.

All of these dynamics are at work in two current genetic epidemiology studies – Generation Scotland and UK Biobank.

Generation Scotland focuses on individuals and their close relatives in order to assess their genetic disposition to common diseases like heart disease, diabetes, stroke, osteoporosis and mental health problems. The programme will link carefully anonymised information about the lifestyle and healthcare history of participants with their genetic profile allowing scientists and clinicians to identify disease risks and preventative healthcare strategies.

UK Biobank aims to build a major resource that can support a diverse range of medical research intended to improve the prevention, diagnosis and treatment of illness and the promotion of health throughout society.

Lifestyle and environmental information, medical history, physical measurements, and biological samples are being collected across the UK from about 500,000 people aged 40 – 69 at presentation and then, with informed consent, their health will be followed for many years through medical and other health-related records. The biological samples will be stored at -80^{o} in what seems like the world's biggest fridge so that they can be used for a wide range of biochemical and genetic analyses in the future.

Scientists have known for many years that our risks of developing different diseases are due to the complex combination of different factors: our lifestyle and environment; our personal susceptibility (genes); and the play of chance (luck). Because UK Biobank will involve thousands of people who develop any particular disease, it will be able to show more reliably than ever before why some people develop that disease while others do not. This should help to find new ways to prevent death and disability from many different conditions.

Generation Scotland and UK Biobank are public good projects. Both are being handled with the utmost care and to the highest ethical and scientific standards. Both seek active engagement with participants, research users and society in general throughout the lifetime of the resource. Data and samples will only be used for ethically and scientifically approved research that is consistent with the purposes I have described and safeguards will be maintained to ensure the confidentiality of participants' data and samples. A great deal of care has been taken in developing the ethics and governance framework for the studies and designing the scientific protocols and of course the IT and information management challenges are significant.

In essence, the requirement is to develop a Health Transaction Base, middleware which enables the storage, management, synthesis, manipulation and security of data from the assessment centres (500,000 people) the laboratory information management system (9 m samples), the long term follow up of the participants (millions of individual healthcare events) and the possibility of linking to other biobanks worldwide and to non-health data sets. Of course this is only one example of the increasing reliance of research communication via national and international networks, interdisciplinarity and large-scale data storage.

Even further upstream the emphasis is on visualisation and developing huge resources of biological imaging data. For example scientists at Dundee have just achieved the first direct visualisation of the birth of neurons in living tissue and are making great strides in developing image informatics software.

This has been a rapid tour – a personal view of some of the things that I think will be of increasing importance in your world as universities continue to develop into the future. I thank all of you for all that you have achieved and urge you to keep at it – securing the network infrastructure in our universities, promoting new business processes and playing and important role in advancing learning and teaching and keeping pace with important new directions in research.

It has been a pleasure to join your meeting and I hope that your time in Glasgow will be both productive and enjoyable. Thank you.

Alan Langlands
11 March 2008