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FOREWORD

Earlier this year Universities UK published my report *Efficiency, effectiveness and value for money*, on the performance on the UK's higher education system. The report comes with a cautionary note that the challenge of maintaining a global reputation for excellence in teaching and research should not be underestimated. That holds true for institutions in Scotland as much as it does for those in the rest of the UK.

In order for higher education to continue to be a Scottish national success story, educating Scotland's students and undertaking great research, we must continue to attract the best and brightest talent to work in our universities and ensure Scotland remains the destination of choice for international students. International talent helps to lever in more than half of the sector's annual income, and key to attracting that talent is the need to maintain world-class research and teaching facilities.

Universities must work in ever smarter and more innovative ways to meet this challenge in the context of many more nations now investing in higher education, having identified that the higher level skills of graduates and the social and economic benefits of research are central to an advanced 21st century society.

To this end, the work of the Universities Scotland Efficiencies Taskforce continues apace, in a tough public spending environment that has seen real-terms cuts to Scottish Funding Council research funding, the loss of Global Excellence funding, teaching funding falling in real terms and capital funding at a historic low.

The second three-year efficiency strategy launched by the Efficiencies Taskforce last year (see *Working Smarter 2014: A new phase of university efficiencies*) is on course and already delivering further results as we find efficiencies that can be reinvested in the sector. This report provides an update on activities as part of this programme of work, and outlines some of the actions taken at a sector level, as well as by individual institutions, as we work towards the targets set for 2017.

University leaders will, as recipients of core government funding, continue to drive the efficiency of their institutions so as to deliver maximum value for that investment in the coming years. However, political leaders should be in no doubt that improved efficiency cannot be a replacement for investment. It is the level of investment that will ultimately determine what Scotland's universities can achieve in the global higher education context and whether we can achieve our shared ambition for Scotland.

Our ambition is for Scotland to be known internationally as a leading innovation nation with the right infrastructure and a workforce equipped with the higher level skills that can create and grow our businesses at home and attract others to invest for decades to come. If we have sustained public investment, continue to lever in money from other sources, and spend both efficiently, then we believe we can do it.

SCOTTISH HIGHER EDUCATION – EFFICIENT AND PRODUCTIVE

It is a reality that whether organisations operate in the public, private or third sector there are acute pressures on them to increase their efficiency and deliver higher rates of productivity. Where public funding is concerned – as is the case for 42 per cent of university funding – there is a serious responsibility to deliver best value for money.

Scotland's universities decided to take ownership of this challenge back in 2011, establishing the Universities Scotland Efficiencies Taskforce (USET) to tackle this collaboratively and in a constructive way for the sector. In the last three years over £200 million of new efficiencies have been saved for reinvestment. USET's first three-year efficiency strategy (2012-2015) was delivered a year ahead of schedule. The second, launched in 2014, is underway and already delivering results.

Scotland's higher education sector is efficient and productive. It drives this agenda itself because it is important that efficiencies are achieved and productivity increased in a way that protects and builds on excellence. Excellence is what determines universities' ability to deliver the best return on public investment, as excellence secures success in the competition for external research funds and international students. At present, the sector's excellence delivers a return of over seven pounds in gross value added for every pound of public investment[1].

EFFICIENCY GAINS

Efficiency gains achieved through the first USET plan (2012-2014) include:

- Over £120 million saved in efficiencies.

- Continuous growth in the value of procurement through collaborative agreements; up from less than 5% in 2009 to 32% in 2014, now saving £30 million a year for the further and higher education sectors.

- Establishment of one of the UK's first cost-sharing groups which removes the VAT barrier to shared services.

- New collaborative licencing deals for ICT.

PRODUCTIVITY GAINS

- Scotland's universities rank 2nd in the world for number of research publications produced per researcher[2].

- They rank 2nd in the world for the number of citations per researcher (a mark of excellence)[3].

- They rank 1st in the world for the impact of university-business research collaborations[4].

- Scotland's top eight research institutions produce more than twice as many spin-out companies as the leading ten American institutions, per $million invested[5].

- Scotland has been the most active UK region in the creation of new spin-outs over the last ten years (20% of the total, and 26% in 2012)[6].

- Scotland's universities have continued to improve the positive destinations of their graduates – maintaining their position as the best in the UK for seven years running[7].
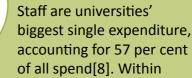
The efficiency agenda has been important in recent years as savings have been reinvested by universities, going some way to meeting additional rising costs and funding shortfalls. Reinvestment is also important to maintaining and, where possible, building on excellence so that those who depend on universities, including students, staff, research funders, charities and businesses, get the level of service they deserve.

The potential for reinvestment through efficiency has been particularly important to two key areas of university spend which face real challenges; expenditure on staff, and capital and facilities.

Continued success depends on attracting the best and brightest minds to work in our universities and remaining a destination of choice for international students, two prerequisites that help lever in more than half of the sector's annual income. Central to both is the need to create and maintain world-class research and teaching facilities.

To make the required investments, universities have had to drive efficiencies hard in order to create significant surpluses for reinvestment. With cuts to SFC research funding, teaching funding falling in real terms and capital funding at a historical low, the sector's co-ordinated and collaborative work on efficiency has been crucial to maintaining financial sustainability.

STAFF

Staff are universities' biggest single expenditure, accounting for 57 per cent of all spend[8]. Within the staff budget, universities face immediate and unavoidable increases they must cover. Employers' national insurance contributions are set to increase by two per cent because of changes to state pension arrangements. This will affect universities as it will affect other employers. Compounding this, most universities face a further two per cent increase in employers' pension costs, arising from urgent reforms needed to ensure the sustainability of the pension schemes for university staff.

Every member of universities' 42,000 staff plays an important role in the success of their institution, from the academic teaching and research staff to the professional and support staff. Whilst universities have a responsibility to deliver efficiency they also recognise their responsibilities to their staff and to their role in the fair work agenda. That is why institutions have set out their intention to pay the living wage to all staff covered by pay negotiations for the foreseeable future.

CAPITAL

Universities have seen funding for capital – money spent to maintain and upgrade buildings and other facilities – fall away by 75 per cent since 2009.

There is a real need to invest in the university estate. Back in 2007, Audit Scotland estimated it would take £0.7 billion to clear the 'maintenance backlog' in university estates and bring the whole estate up to a good standard. Since then capital funding has fallen away.

Universities have always used internal funds to partially cover the cost of capital investments. This has grown sharply since 2009, when it accounted for just over one third of universities' capital expenditure, to just under 60 per cent today. Universities have also had to turn to private borrowing to address the shortfall in funding. Universities' long-term borrowing has increased by over £100 million in the same period. As with all borrowing, lenders look for assurance of the security of the loan and so institutions have had to work hard on efficiencies in order to create viable surpluses to enable lending.

WORKING SMARTER 2015: UPDATES FROM THE WORKSTREAMS

PROCUREMENT

Scotland's university sector is an acknowledged leader in collaborative procurement. Through APUC, the procurement shared service that spans the Scottish higher education and further education sectors, universities benefit from combined purchasing power and also the efficient management of expensive and scarce professional procurement resources. Around a third of sector spend now goes through collaborative agreements (for comparison: the proportion in the English sector is around a quarter[9]). Sharing research equipment creates further efficiencies. Individual institutions also continue to drive efficiencies through their in-house procurement.

ACTION TAKEN AT A SECTOR LEVEL

APUC offers over 160 framework agreements to its member institutions – built up from 24 in 2009.

The annual efficiency benefits of APUC collaborative contracts for the HE and FE sectors amount to £31 million, relative to market price.

A comprehensive programme of institutional engagements with APUC is in progress, to identify new collaborative procurement opportunities, toward an overall sector aim of 40 per cent of HE/FE spend through collaborative agreements.

APUC offers institution-level specialist procurement services on a flexible shared service basis. This saves on costly consultancy services.

APUC traineeships, now into the third cohort, help meet important procurement skills needs within the sector.

APUC's provision of training and user support for key procurement systems, as a shared service, saves the sector well over £1 million per year.

The EDAM database (Equipment Database and Maintenance) enables universities to share details of research equipment and facilities, to support equipment sharing. The database is now live, with over 18,000 items already recorded in it.

EXAMPLES OF ACTION TAKEN BY INDIVIDUAL INSTITUTIONS

In total, institutions made around £24 million of additional savings through in-house procurement efficiencies in 2013-14.

The University of Aberdeen has organised facilities to service genome projects, from human to plant research, with a single high throughput sequencer instead of multiple machines at different sites. This ensures high occupancy rates, reduces cost per sample through pooling samples in a single run and saved set-up and ongoing costs to the tune of £777,000 in its first two years.

The Universities of Edinburgh and Glasgow and genomics company Illumina have created the Scottish Genomes Partnership, which will install 15 state-of-the-art sequencing instruments across two hubs within the Universities. The partnership greatly reduces the cost of sequencing, opening up and accelerating new avenues of medical and agricultural research. It will initially focus on very rapid screening of cancer patients, diagnosing childhood illnesses, central nervous system disorders and population studies. Further synergies follow from co-location at Edinburgh with the Archer supercomputing facility, which has the processing ability to analyse vast volumes of research data.

FINANCE & BUSINESS PROCESS IMPROVEMENT (BPI)

Universities are committed to a culture of continuous improvement. Scottish universities have been at the forefront of the adoption of 'Lean' BPI techniques in higher education, to ensure that business is conducted as efficiently and effectively as possible and to provide the best possible experience for students, staff and other service users. The Scottish Higher Education Improvement Network (SHEIN) brings together practitioners from across the sector to exchange best practice and scope new opportunities.

ACTION TAKEN AT A SECTOR LEVEL

From informal beginnings, SHEIN has developed into an established professional community and a springboard for further collaboration.

In July 2015 the **University of Strathclyde** launched *A Guide to Evidencing the Benefits of Business Process Improvement in Higher Education*. Development of the guide was supported by the Leadership Foundation for Higher Education under the Innovation and Transformation Fund, with UK-wide collaboration to provide case studies from across the sector. Quantifying the benefits of BPI should contribute to decisions to invest in the most effective initiatives, and further expand the use of BPI techniques.

EXAMPLES OF ACTION TAKEN BY INDIVIDUAL INSTITUTIONS

The University of Strathclyde's BPI work generates over £120k of savings a year and, through its impact on conversion rates in postgraduate applications, has contributed to over £2.5 million in increased revenue.

The University of the West of Scotland introduced an electronic system for managing the Health and Safety of contractors, producing an annual saving of £30,000 and around 13,000 sheets of paper, strengthening assurance of legal compliance and improving communications with contractors.

As part of its efficiency and effectiveness programme, **Abertay University** has centralised all of its on-campus student enquiries into a 'Student Enquiry Zone'. This has provided administrative efficiencies and savings, and improved the student experience by coalescing all student-facing academic and service related functions into one access point, rather than being distributed across the campus and different service areas.

Edinburgh Napier University has redesigned its matriculation system, enabling thousands more students to matriculate online and reducing waiting times at matriculation by more than half.

The Royal Conservatoire of Scotland will generate an estimated £18,000 annually as a result of investing in a new box office system, which will improve online ticket sales and marketing.

The University of the Highlands and Islands and its Academic Partners are developing a shared services initiative to provide a range of common services across the 13 separate organisations that make up the UHI partnership. The aim is improved quality as well as reduced cost. ICT services will be developed first, since many ICT systems and services are already shared, and other non-teaching activities will be added later. The current aim is to launch the initial service in December 2015. A company structured as a Cost Sharing Group - UHI Shared Services Limited - has been set up for this purpose.

INFORMATION SERVICES

A culture of collaboration is well established in ICT, from large-scale infrastructure ICT projects such as JANET, the UK-wide high-speed network for all higher education institutions, to shared hosting of specific systems for university libraries and professional services within Scotland. Higher education has an ICT Directors' Group to pursue a wide range of shared service opportunities. The HE and FE sectors have now also created a dedicated SFC-funded resource called the Information Services Shared Services Catalyst, to scope and support new collaborations.

ACTION TAKEN AT A SECTOR LEVEL

Shared hosting and support for the Moodle Virtual Learning Environment: A cross-sector pilot is underway, with **Edinburgh Napier University** providing services for Edinburgh College.

A comprehensive sector-wide review of the ICT landscape is in progress, to identify new opportunities for collaboration.

Sector-level work is underway to scope shared services in:
• Research data services;
• Library Information Management Systems;
• Shared Service Management Systems (UniDesk);
• Security Awareness and Monitoring;
• Identity Management; and
• Shared procurement in ICT.

EXAMPLES OF ACTION TAKEN BY INDIVIDUAL INSTITUTIONS

The North-East of Scotland Data Centre, completed in 2013, is shared by the **University of Aberdeen**, **Robert Gordon University** and Aberdeenshire College. It brings combined annual savings of around £463,000 and 1,483 tonnes of carbon, and has helped to foster a wider culture of collaboration.

A shared secondary data centre has followed, allowing the two universities to close five less efficient secondary data centres. Other collaborations now being actively explored include IT asset-sharing, joint purchasing activity and crisis management and business continuity support arrangements.

The University of St Andrews provides summer work placements for students from the Ethical Hacking Programme at **Abertay University**. They test the University's security systems, providing a valuable service that could otherwise cost upwards of £15,000, and raise awareness of IT Security, while gaining valuable experience to launch their own careers.

The University of Dundee's Security Week comprises a series of training, awareness-raising and educational events for staff and students, addressing important ICT security issues at the institutional and personal levels. In addition to the positive impact on the university community, this helps prevent the future costs of security breaches and is being developed as a best practice model for sector. In 2013-14, the venture was run in partnership with the **University of St Andrews**, and this year's event will be expanded to include other institutions.

Deployment of a new Customer Relationship Management system by **Heriot-Watt University** has improved the application conversion rate for overseas and rest of UK students, including at least an additional 15 postgraduate taught students, with an annual benefit of at least £100,000 net additional fee income.

ESTATES & CARBON REDUCTION

The specific nature of university estates and infrastructure, which has an emphasis on learning and research, yields a higher return on investment than general infrastructure, returning £5.50 for every pound invested. Capital investment, and its efficient use, is important to ensure the highest environmental standards.

ACTION TAKEN AT A SECTOR LEVEL

All universities have Carbon Management Plans, under the Universities and Colleges Climate Commitment for Scotland (UCCCfS).

All Carbon Management Plans are being updated in collaboration with the Environmental Association for Universities and Colleges (EAUC).

Universities are collaborating with EAUC and the SFC on a project to identify the most effective forms of investment for carbon reduction.

A baseline sector carbon footprint has been calculated.

APUC's Sustain database, developed with NUS and other stakeholders, centrally audits suppliers' environmental and social responsibility throughout the supply chain.

EXAMPLES OF ACTION TAKEN BY INDIVIDUAL INSTITUTIONS

The buy-out of student accommodation by **Queen Margaret University** last December enabled the university to generate a recurrent saving of around £500,000, through lower interest payments and removing the payments to the accommodation operator. This has also allowed the University to take control over the maintenance and management of the accommodation, as well as pricing.

Through the efficient design of new residences and a series of other efficiency initiatives, the **University of Stirling** achieved savings of £467,000 on utilities in 2013-14.

The **University of Glasgow**'s £3.65m library refurbishment has created savings of 440,000 KWh and 81 tonnes CO_2 annually and extended the life of the building by 60 years. An investment of £160,500 in cladding and insulation will pay for itself in around nine years.

Energy savings from CHP installation at **Glasgow Caledonian University** add up to over £400,000 between 2013-14 and 2015-16 alone.

Through energy efficiencies and the sustainable design of the new Reid Building, **Glasgow School of Art** generated £35,000 of efficiencies in 2013/14 and expect to have saved a total of over £200,000 by the end of academic year 2015-16.

SRUC switched from heating oil to biomass fuel at its entire Barony campus. This has brought annual savings of £45,000.

The Open University's Go Green initiative actively engages and empowers staff to make a contribution to its carbon emissions reduction goals, using environmental champions within the staff and encouraging pledges to implement positive changes. It aims to contribute a 5% carbon reduction each year towards the OU's overall target of a 36% reduction by 2020.

ENDNOTES

1   Biggar Economics (2015), Contribution of Universities to the Scottish Economy.

2   Elsevier (2013), International Comparative Performance of the Welsh Research Base 2013: A report prepared by Elsevier for HEW, the Higher Education Funding Council for Wales, and the Welsh Government.

3   ibid.

4   ibid.

5   Edinburgh Research and Innovation (2014), Comparison of Exploitation Performance of Scottish Universities with US Institutions 2011/12.

6   Spinouts UK: www.spinoutsuk.co.uk.

7   Higher Education Statistics Agency (HESA).

8   HESA.

9   Universities UK (2015), Efficiency, effectiveness and value for money.

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