Elizabeth Barraclough

Mr Chancellor,

In these days of interactive whiteboards, mobile web access and general information overload, it is already becoming difficult to remember the days before the digital revolution. Back then, the principal "information technologies" at our disposal were chalk, carbon paper, spirit-duplicators, and back-breaking piles of hardbound journal volumes. Not all memories of pre-digital technologies are bad of course – the smell of Banda fluid was enough to make many jaded lecturers vaguely understand why the youth of the 1970s invented solvent abuse. For all that, it is now impossible to imagine a modern, successful University which cannot call upon 24 hour access to robust, diverse and up-to-date computing services.

Newcastle University has long been able to boast of excellence in its computing resources, of being 'ahead of the pack', nationally and internationally. As someone who has repeatedly returned here, boy and man, I can personally attest to the sustained legitimacy of our University's claim of pre-eminence in the computing services we provide to staff and students. In no small part, we owe this pre-eminence to the thirty-six years of dedicated work of Elizabeth Barraclough.

Elizabeth was appointed a computer operator in the University's Computing Laboratory in 1957. These days the job title 'computer operator' might conjure up images of an unskilled worker in a call centre; in 1957 the title really meant what it said: mathematics graduates working hands-on with some of the earliest commercially-available mainframe computers in the world. In the case of our University, this was FERDINAND: a Ferranti Pegasus computer, which accommodated rather less computing power than a modern-day mobile phone in a space similar to that of a luxury double shower cubicle. There were many and varied demands on FERDINAND, and Elizabeth was charged with accommodating as many of them as possible. This required prioritisation. How do you choose between an engineer who is desperate to finally perform elaborate iterative calculations which they'd devised years before but never been able to implement, and a social scientist who wants to use the latest data retrieval techniques to interrogate census records?

Fortunately for FERDINAND, he had found his 'Isabella'! Not only did Elizabeth manage to establish priorities in the face of invidious choices, she also wrote programs to help very diverse users realise their ambitions: the program which she wrote to solve the Friedholm integral equations is still remembered as ground-breaking. As if that were not enough, Elizabeth also used her autocode programming skills to pioneer the computerisation of student registration and MSc timetabling – all this before 1960!

In adjudicating between competing demands on limited computing resources, Elizabeth soon gained a reputation for being an extremely tough manager. Tough, but fair: both ‘winners’ and ‘losers’ in the battle for computing resources recall her instinct for spotting the worthy causes amongst myriad frivolous requests. Her ability to ensure that computing resources were properly costed and paid for by end-user Departments was years ahead of its time, and it contributed in no small measure to the growth of both the computing service and the academic department of computing, which at that time were managed as a single unit. It’s probably fair to say that the very name of Miss Barraclough was apt to strike fear into the hearts of many Heads of Departments, and even into those of the University’s Principal Officers: one Pro-Vice Chancellor memorably declared Elizabeth to be “unmanageable”, a qualification, given the circumstances, of which many a suffragette would have been proud!

So the computing service grew, powered by the boundless energy of Elizabeth and inspired by her fortitude. In 1967 Elizabeth was appointed Computer Manager for NUMAC – the Northumbrian Universities’ Multiple Access Computer, which had its hub here at Newcastle. Resources expanded with the installation of the IBM 360 mainframe, but demand inexorably grew to match. Tough but fair decision-making remained the order of the day. I myself recall the attention to detail which a request for additional disk space required whilst number-crunching in FORTRAN on MTS – the Michigan Terminal

System which provided the principal interface for NUMAC in the 1980s. By then, Elizabeth had reached the rank of Executive Director of the Computing Laboratory, but her instincts pervaded the culture of her organisation. To all accounts, she was also a big hitter in the international community of MTS users – both metaphorically and literally: her fearsome determination on the baseball field is still recalled with awe by transatlantic participants in the annual MTS forum!

In the mid-1980s, the BBC decided to make a modern-day Domesday Book to mark the 900th anniversary of the original. In Elizabeth's Computing Laboratory, the Beeb found its ideal partner: for all that the BBC today prides itself on its in-house web-based services, back in 1985 it could but look on in awe at the computing power which Elizabeth commanded. Whereas the 1086 Domesday survey had stopped short at the River Tees, as the Normans found themselves confused by the inherited Celtic land-tenure patterns of the North East, in 1986 Newcastle became the computing hub of a national project which involved more than a million people, many of them schoolchildren, who keenly documented their communities at that point in history. The new Domesday survey included millions of words, 200,000 pictures and tens of thousands of maps, together with clips from BBC and ITV programmes. It was the original multi-media project, and remains the largest ever implemented. Elizabeth managed the process of collating all of this information onto two virtually

indestructible interactive video discs; these long outlived the computer hardware used to produce them, and as recently as 2002 a major project was undertaken to ensure that the stored information can still be accessed and used.

Notwithstanding the earnestness of her work ethic, Elizabeth was never the sort of person to be defined by her 9-to-5 midweek activities. She has long been active in politics. As a committed Liberal Democrat, she has served as a councillor at the levels of town, district and County councils, and has twice held the rank of Mayor. She is also a very keen and accomplished gardener. But no other passion exceeds her love for the great outdoors. A keen hill-walker, Elizabeth has long been a volunteer National Park Warden. Her passion for the wilds of the North is reflected in the names of University PC clusters with which most University staff are familiar: ‘tarn’, ‘beck’, ‘cheviot’ - names which rescue our tired imaginations from the dark recesses of the computer room and fly us out over the fells. In her retirement, Elizabeth has made the Lake District National Park her full-time priority, which she now indulges daily from her home in Keswick, leading a weekly walk for the over-70s on behalf of the Park Authority.

Mr Chancellor, Elizabeth Barraclough scaled the heights of achievement in the application of computing in the University environment over many decades, ensuring that our institution can today count on the inestimable

treasure of a mature and modern computing service: in view of these achievements, I now ask you to bestow upon her an Honorary Fellowship of Newcastle University.

Citation by Professor Paul Younger