

Notes on the History of Computing in Edinburgh.

In the late 1950s and early 1960s computing was visibly becoming a significant requirement of much research in the natural sciences and in engineering.

Universities were providing central services on an increasing scale. Among them was Edinburgh University, which advertised the post of Director of its yet to be founded Computer Unit in late 1962. I was appointed in December and took up my post on the 1st of April, 1963.

The responsibilities of the Computer Unit were to provide Computing Service, to teach about computing, including what became known as Computer Science, and to do research in that subject.

At that time, the University had committed itself to obtain computer power as a remote batch service from the Atlas machine which had recently been constructed in Manchester University, and opened for service on December 2nd 1962. This was one of the most powerful machines in Britain, the IBM Stretch was a competitor imported by the AWRE which was of the the same sort of power, but had a much less effective operating system than that written in Manchester.

Although the University of Manchester had every good intention, the practice of providing a satisfactory remote service was beyond it. Our users discovered that the delay between sending a paper tape and receiving some results was very variable, and stretched to more than 3 weeks in a sizeable proportion of jobs. Naturally, this led to acrimony towards the Computer Unit. The state of affairs was aggravated by the proud boasts of Nottingham University that they obtained 36 hour turn-around at the worst. It turned out that the Director of the Nottingham Computing Service used to drive across to Manchester several times a week and stand over the operators there until his work had been processed. It was rather more difficult to do that from Edinburgh! After some time we seconded an operator to Manchester, and she made sure that our work received fair treatment, so things improved significantly. It became quite clear by the beginning of 1964 that we needed a computer on the spot if we were to have an adequate service.

The British Computer Society held the Computer Fair in Edinburgh, in the Heriot-Watt University, at Easter 1964. At this, Professor Maurice Wilkes demonstrated the distant use of the new interactive service (CTSS) at MIT. It was a revelation of things to come for most of us and, during the next few months we prepared a request to the UGC for #600,000 for a suitable machine and to the DSIR (now the SERC) for funds to investigate time-sharing systems. The DSIR responded rapidly, telling us that such an investigation was not research and refusing to fund such work.

At this time, several universities realised the scale of costs of the equipping of a computing service, and their requests to the UGC led the latter to set up, with the Research Councils, the Flowers Committee to investigate the provision of computers for Universities and Research Councils. At that time there was very little idea outside a few universities, such as Edinburgh, that it would be necessary to devote a sizeable fraction of the computing service to teaching.

The Flowers Committee took evidence from many Universities and recommended that about #7M should be spent each year for several years to equip the Universities properly. After some dickerings in Whitehall a lesser but still sizeable figure was agreed by the Treasury. Another recommendation was that there should be a permanent committee to oversee the distribution and spending of that money. This was to be the Computer Board.

For Edinburgh, the recommendations were that the academic and service activities should be separated and that Edinburgh should provide service to a Region, not very clearly specified. For this,

a rather larger task than we had provided for in our request, we were given rather less money than we had asked for. It was clear that we would have difficulties. Flowers also took note of the interests of Edinburgh in time-sharing, so his recommendations about us included giving us some responsibility for the investigation of time-sharing systems and services.

The split took place on January 1st 1966, and the Edinburgh Regional Computing Centre was set up then. The negotiations had resulted in my choosing the academic side of affairs, so we were left without a Director for the service. After a couple of candidates had looked at the post and turned it down, we managed to attract Dr G.E.Thomas, who was about to leave ICI's management computing service.

As a result of the DSIR clique's refusal to fund our investigation, we sought support elsewhere. We were fortunate to receive the approval of the DTI, who offered us #250,000 if we could get a matching grant from industry. English Electric turned up trumps, so we had #500,000 with which to investigate time-sharing. Dr Thomas and Mrs Barritt also persuaded the DTI to spend some additional money to enhance the Service's machine to make it nearer what was really necessary for the support of time-sharing and interaction.

Sadly, EE was forced into a merger with ICT to form ICL. The new company did, however, honour the agreement made by EE and we were able to proceed with the work. Unfortunately I was not a strong enough manager to prevent the company sending us more and more people, and the group became too big for me. As a result, after 4 years we had a recently delivered machine and a working, but only just, operating system. The agreement having come to an end, a project group was put together between the Computing Centre and the Computer Science Department. In less than a year this group, of about 9 people, had produced a very good time-sharing system which was put into service. With modifications, it has grown into that which we have today, having been ported to two further types of machine. Only Cambridge, Manchester and Edinburgh have had services which ran for a long time on home-brewed operating systems and of these only Edinburgh offered a really interactive service from the very first day.

Not only because it was a Regional Centre, but because Edinburgh University is distributed over so many well-separated sites, the Service has been based upon the use of networks to distribute computing from its very inception.

The ERCC built one of the first wide-area networks that was used for a general service and has contributed to the pool of ideas which are within the present international standards.

Edinburgh University took a fruitful decision early in its computing career: to allocate a sizeable part of its computing resources to teaching. Averaged over the year, about 20% of the service was made available for this. During term-time, of course, the proportion was often much higher - some users would claim that it was 100% at times. Coupled with this, the University has given strong support to its academic department, both in staff and in equipment. The Computing Centre has been enabled to grow and it has for many years been one of the largest, and one of the most active centres in Europe. As a result, the use of computers had spread very widely throughout the whole University. This is particularly noticeable in the number of departments outside the Science Faculty which use computers for teaching and research and in the scale of much of this work.

S.Michaelson
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