

**Response to J M Consulting LTD's
Consultation paper on
Under-Investment in University Infrastructure**

Alan Bundy, 1 November 2001

Jim and Melanie

I am the convener of the UK Computing Research Committee: an advocacy body which has recently been formed to represent the computing research community within the UK. Because of our newness, we are not yet tied into the consultation mechanism within the UK. As a result, I only read your consultation paper after the deadline of 25 October had expired. I see that you indicate the possibility of receiving late submissions in November and I beg your indulgence to raise with you some of the special issues that affect computing research infrastructure. I'm sorry that this late submission has been prepared in some haste.

1. While some areas of our field do require large and expensive items of equipment, the majority of the field uses high-end, standard workstations. Even the large items: very high performance computers, robots, virtual reality kit, etc are not on the huge scale required by some of the other sciences, eg CERN, satellites, telescopes, etc. One possible exception is high bandwidth networking, but this is a general science need.
But this does not mean we don't have infrastructure problems -- on the contrary.
2. More than most, we have a need for technical support in running the equipment. Computer officers are needed to provide maintenance, development and support. The technology evolves very fast, so just keeping up with it is difficult without skilled support. COs can command premier salaries and working conditions in industry, so recruitment and retention is a major problem for us, which has become a lot worse in recent years. The national pay scale denies us the flexibility to attract and retain the people we need. Although universities have become creative in addressing this salary problem, there is a limit to what they can do.
3. For us, equipment is not just hardware, but also includes software systems. Software often provides a "research platform", on top of which our research systems can build. These research platforms are often themselves the results of research projects and may not be well supported and maintained. This puts an additional burden on our COs. The various schemes for funding equipment: JIF, SRIF, JREI, etc, have not recognised software as a valid item of equipment. Nor do the conventional funding routes, eg EPSRC, provide support to see research prototypes through to products and to provide the maintenance, development and support that are needed to serve a large user community.
[As a result technology transfer to industry is also inhibited, but I realise this is not your immediate concern.]
4. The speed and memory capacity of computers has increased exponentially since the 1960s and this rate of increase shows no sign of abating. For our research to make an international impact, it is vital that we keep up to date. This requires us to renew our workstations at least every 3 years. Although each workstation is modestly priced, we need lots of them, so our equipment costs are at least as high as other sciences, if not higher. University computing departments are squeezed financially and struggle to find the money to keep up to date.
5. The various special infrastructure/equipment funding schemes are geared towards a few very expensive items of equipment rather than lots of smaller ones. They are geared to hardware and not to software. As a result, computing tends to do badly in these competitions. We are top-sliced along with everyone else, but then do not see the benefits.

I hope these hastily penned words are of some help and are not too late to influence your report. If there is time for a more considered reply, please let me know.

Thanks

Prof Alan Bundy
Convener, UKCRC (and University of Edinburgh)