Fostering e-experts
Submission to the Information Futures Commission

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A widely identified problem in taking full advantage of the information possibilities in the future is a lack of appropriately skilled people. The people issue has been highlighted in various fora at multiple levels of organization and institution. Within the University it has been a common theme in my visits to faculties in my capacity as eResearch director. At a State level it is regularly discussed at meetings of Victorian eResearch directors, and by the State Government through its involvement in VeRSI and VPAC. Nationally, the people issue was discussed in the context of the current review of the NCRIS Roadmap. Internationally, people issues are a common theme at conferences.

What can be done? My opinion is that (at least some) skilled people are available, but there are various disincentives and impediments for people to excel in contributing towards rich Information Futures. The purpose of this submission is, as part of the strategy associated with the Information Futures Commission, to ask that the University of Melbourne reviews its staff categories and performance development framework to allow, at least conceptually, for a new class of staff member, entitled here an e-expert[1], that can cross over between academic staff and professional staff, and can be an equal participant in research projects.

The structure of this submission is to first list challenges for researchers over the next ten years. Next we look at what tasks e-experts might perform. Then current impediments and disincentives for e-experts are listed. Finally some suggestions are given for better managing e-experts within the University.

There are a range of challenges facing current staff wanting to be most effective in the burgeoning information-rich research world leading in the new information-rich world.

- The research environment is changing rapidly. There is need for help in tracking advances in the discipline.
- The scale of information available is rapidly increasing. Because of the scale, people need new tools and methods to deal with them.
- Some of the new tools are interdisciplinary with understanding needed from several disciplines.
- There is a need for training in the use of new tools. Researchers need to master the tools rapidly in order to productive with new methods.
- Conversely, long re-training periods in tools need to be avoided.
- Much of the knowledge that is needed is specialised which not everyone in the research team can be expected, or needs, to learn.

To be effective in this environment research teams need a diverse set of skills. Some of the skills are traditional academic skills including writing grant proposals and publishing research. Some of the skills are enabling skills, where people enable research to be done. Examples of enabling skills are building and/or modifying software tools so

[1] The e here stands for enabling as in e-science.

that they work effectively on new environments such as high performance computing grids[2], developing processes to take advantage of mass data storage, curating a diverse set of digital objects, providing effective research project management, finding new sources of information, and even just serving as 'glue' in interdisciplinary or international collaborations. A person who is an expert enabler I am choosing to call an e-expert.

Unfortunately e-experts are typically not well supported within the university. Here are some of the impediments to employing the best e-experts.

- Current performance management frameworks do not suit e-experts. If e-experts are employed as academics they are judged by publications and grant income, whereas their contribution is in enabling of research. This has been a problem in disciplines such as physics. If e-experts are employed as professional staff, they are subject to tight objectives and salary scales, and are rarely treated as equal partners in research projects.
- Following on from the previous point, there is limited recognition of accomplishment. This feeling of lack of recognition has been expressed strongly, for example, at the weekly coffee meetings held in cooperation with VeRSI where some current e-experts have gathered.
- More problematic is the lack of a career path. Even if doing a good job, there is no place for e-experts to advance in careers. This has resulted in several talented people leaving the university.
- It is not easy to share e-experts between projects, which would overcome the challenge of long lead times in using tools. HR practices do not easily allow for e-expertise to be pooled among projects, disciplines, and faculties.

Recommendation 1: The University should investigate supporting a pool of e-experts and develop a new model for charging for their services.

Recommendation 2: New performance measures should be developed for e-experts that foster collaboration in the information rich environments of the future.

There is another issue to be raised, which is separate but related. Many of the current drivers both for academic staff and professional staff discourage innovation. Needing to guarantee a certain number of publications can be a different mind set from having a large impact, almost certainly being conservative. E-experts should be able to take risks and encourage innovation by trying new tools and methods. That is not reflected well in performance measures. Undertaking a risky project, and learning useful skills, but not publishing any papers through a lack of positive results is not a recommended path. But not allowing for failure limits innovation.

Recommendation 3: There should be a mechanism to encourage some number of risky projects, possibly using e-experts.

[2] Use of jargon is deliberate.