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The Higher Education Technology Agenda

Maintaining the balance: managing the changing dynamics of the cloud

Information systems managers in Australasian Universities have to balance many requirements: the global versus the national, the needs of the whole university versus those of specific areas, and the demand for increasing functionality versus the need to contain costs. They have put multiple solutions in place to meet these requirements. These solutions are often complex, and depend on maintaining equilibrium in a dynamic environment.

Cloud solutions shift the dynamics significantly. Universities are already part of this shift, which is likely to continue, with possibly radical effects. This paper reviews current university requirements and describes the dynamics of solutions already in place. It then identifies specific areas where cloud-based software as a service may impact these solutions, and provides a series of questions to frame this strategic challenge to IS managers.

The first balance to consider is that between global and local requirements. Global requirements include innovative research, teaching and learning platforms, as part of academics' and students' personal information ecology, and compatible with those used world-wide. As a consequence, many universities buy their library and e-learning systems from global vendors. By contrast, there are many specifically Australasian features to the student lifecycle, including admission, enrolment and graduation processes. The onerous record keeping and reporting requirements arising from these processes also have unique Australasian features. As a consequence, student administration systems are usually sourced from Australasian vendors, or vendors with a specific Australasian product. The same is true, to a lesser extent, of other systems, such as Finance and Human Resources

When considering cloud-based software offered as a service, there are some key features to consider. Where and how is data housed? If that data is housed offshore, then is it subject to Australian or New Zealand jurisdiction? If the vendor does not continue to provide the software, what guarantee is there that data can still be accessed? How is security managed and maintained? For globally sourced systems, these are the main considerations.

For locally sourced systems, these key considerations are equally important, but there are additional, complex and subtle dynamics to consider. Take student administration systems as an example. The majority of universities are serviced by one of three vendors, each collaborating with a highly proactive Australasian user group. In the past, when universities required new or changed functionality they requested it from the vendor via the user group. The cloud changes this dynamic, for both users and vendors. Universities requiring new functionality now have the option of turning to cloud-based solutions. What impact will this have on the core student administration system? Will it shrink? If so, will it still be in the interests of each university to invest resourcing in the user group? From the vendor perspective, will the product remain viable? Will vendors opt to use the cloud as an opportunity to sell parts of the software to a more global market? How will this affect the relationship with the user group? Will it have implications for the sector as a whole – might the Government have to modify its reporting requirements to align with those available from global cloud-based services?

The second balance to consider is that between the needs of the whole University, and the needs of specific areas. It is in the interests of the whole university to ensure that its recording and reporting requirements are met, and the most effective way to do this is to ensure integrated systems, a “single source of truth” for data, and nominated custodians for each data element. This is always a challenge – most universities operate in a federated environment, with many administrative and academic processes occurring in faculties. Even within administration there may be challenges with duplicate or inconsistent data being held by student administration, human resources, finance and planning areas, for example. Most information systems managers encounter “feral systems” – ones which have been developed without their knowledge, from sources chosen historically rather than by “single source” principles, and which are not integrated with the University infrastructure.

The cloud offers a new source for systems over which information systems managers may have neither responsibility nor control. Indeed, cloud-based software as a service is usually targeted directly to end-users, and explicitly excludes the in-house information systems function. Several questions arise. How will information systems managers ensure that data held in such systems is kept according to Australian/New Zealand laws, and remains accessible? How should managers ensure they develop relationships with, and educate end-users so that integration and security of such systems is well managed and controlled? Does this change the resource requirement in the information systems function? What vendor management skills are required? Will the software development requirement shrink? Will the integration and security requirement shrink or increase? Will there be the same requirement for infrastructure, or will that also be sourced from the cloud?

The third balance to consider is that between demands for increasing functionality within shrinking budgets. What should a cost-benefit case for cloud-based systems contain? Will there be a genuine decrease in infrastructure costs as a result of such systems? Will they be more cost-effective as a result of being able to pay per use? Will the costs of integrating and maintaining such systems be fully accounted for in such models?

In summary, there are many questions for University IS managers to explore as they move towards solutions which include cloud-based software as a service – a move which they m



be unable to fully control. This paper provides a basis for exploring these questions.

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