

Note on Technology as a Strategic Tool

We receive many questions about the use of technology from both funders and arts administrators. We hear strategic questions – how can we use technology to extend our reach to customers or reduce our operating expenses; technical questions – which social media technology generates the most interaction; and process questions – how do we manage a technology project when we are not technology experts. In this note we share one experience of our own and our lessons as we moved our organization completely to cloud computing.

The Strategic Question

NAS' business is at its core a knowledge creation and knowledge management business. We produce leadership programs through a small team of full-time staff and a much broader network of faculty, funding, service, and distribution partners. We work in all areas of the United States as well as overseas. The key to our services and the value we create for the cultural field is the quality of the people we engage in this process – as staff, as partners, and as clients.

Technology, not surprisingly, is a critical enabler for our work. We upgrade equipment on a predetermined schedule that allows us to take full advantage of our computing investments while limiting support costs and work interruptions from out-of-date or unsupported technology. As 2011 started, we had reached the end of the “useful life” of our desktop computers and servers.

We used this moment to examine again how our current technology model was – and was not – supporting our business model. Strategically, we want our technology platform to enable fast and effective program development and delivery while minimizing coordination and technology management costs. Specifically, we set five objectives for our next cycle of technology investment:

1. Allow us to hire and partner with the most talented people, no matter where they live or work
2. Work equally well from anywhere we need to be in the course of delivering our programs
3. Minimize the IT expertise we need on staff or under contract
4. Minimize the support costs for the technology
5. Allow us to use the most advanced solutions to support our programs and processes

Our Technology Solution

Over the last few years we have introduced a number of “cloud computing” applications into our work. Cloud computing, or the use of software applications that are hosted and maintained by the software vendor and accessed over the internet, have worked well for us and greatly reduced our technology support issues in key areas such as customer database management.

We now were interested in moving our entire IT infrastructure to the cloud. This would allow us to reduce our internal computing environment to one as simple as most people have in their homes today: a high-speed internet connection, a router, a printer, and a set of laptop and desktop computers. It also would fit the way we work – whether on the road, working from a home office, or at our headquarters, every staff member would have the same access to tools and information.

We found that the key “services” we needed from technology could now be delivered effectively through the cloud. Based on our prior experiences with cloud applications and additional focused research against our stated objectives, we transitioned our IT infrastructure:

- We selected market-leading vendors to provide cloud-based email, file storage and sharing, customer relationship management, event registration, project management, and online meeting, collaboration, and videoconferencing services.
- We did away with our internal email and file server, which greatly simplified our technology support needs.
- We contracted with a new IT support organization that can perform fully remote support, further reducing our costs, improving the speed with which issues get resolved, and ensuring all NAS staff have equal support wherever they are working.

Key Lessons

You do not need to be an IT expert to transform the way you use technology in an organization. Leading a successful IT project has the same challenges as leading any program development project. As with program development, success depends on having a clear picture of your objectives, the experience you want to create for users, the risks you want to manage, and how you will make decisions and tradeoffs throughout the process.

The only case in which unique expertise in technology is needed is when you are developing custom software. You do not need to understand exactly how the technology in a software *package* works in order to evaluate it against your user and business requirements. Custom IT development is necessary and appropriate at times, with all of its additional complexity and risk. However, we agree with the business argument that such projects should only be undertaken in areas where the custom technology will build a unique service capability or competitive advantage for the organization. In all other cases, organizations should take advantage of the rich external market for software tools and even adapt processes to those tools where necessary.

A few key lessons stand out from our experience moving our organization to cloud computing:

- Technology is all about the details. A great idea in concept can be a disaster in practice if the user experience isn’t right for your community and your needs. We developed a detailed list of user requirements that defined the usage scenario we wanted for our cloud-based services. This spreadsheet broke down the experience we required into specifics e.g. “user can log on from PC, Mac, or iPhone,” “the username will be the user’s email address,” “passwords will age and must be reset every 30 days,” etc.
- Technology changes quickly. One of the benefits of cloud computing is that you can change your software much more easily than with traditional on-site systems. “Lock in” was therefore an important business consideration for us in moving to the cloud: how difficult would it be to transition to a different technology if the product did not continue to meet our needs? We looked for good export features, though some categories of tools are simply harder to transition than others. For example, file storage can be moved simply from one cloud provider to another over the internet, whereas project management data is harder to migrate because there isn’t a standard format for export of this data.
- Technical jargon is unavoidable. Some questions about business requirements, such as questions about data security, get answered with technical information that is hard to

evaluate. We aren't up to date on all the latest tech standards and we find two approaches work well in these situations. One is to substitute references and reviews in place of technical understanding; that is, if people and sources we trust say "this is secure" then we don't need to understand exactly *how* the requirement is met in the technology. The second approach is to turn to a neutral technology expert to translate the technical answer. With a set of specific "translation" questions in hand, it is very cost effective to work with an IT consultant. Given that we were talking about the critical issue of data security, we used both methods to get comfortable with our selections.

- Hands-on trials matter. As noted above, successful technology is in the details. In selecting cloud computing solutions for our organization, we used internet research, phone conversations, and online demos to identify the two or three most promising solutions for each service. We then created the time to run each finalist through a set of test cases that would allow us to understand how well it really matched our user requirements. No product is going to fit perfectly and this hands-on evaluation is also an opportunity to consider changes you should make in your requirements to best take advantage of available technology. This testing doesn't require a technical expert but it does require someone who truly understands the objectives, the requirements and priorities you have set, and who can be systematic in testing the products.

Implications for NAS

Our early experience with this fully cloud-based software environment has been very positive. We now have complete support for our mobile and geographically-distributed workforce and partners. We have the flexibility to upgrade our software applications with minimal cost and disruption to our work. And we are forecasting approximately a 33% reduction in our technology costs, compared to a traditional on-site solution, through these new technology licenses and the change in IT support services that this model enables.