A K-12 Federation Case Study: Rockingham County Schools, North Carolina

Rockingham County Schools (RCS), a public K-12 school system in North Carolina, faced the same challenge as most medium-sized districts in rural settings - the need to provide sustainable solutions for constantly increasing technology-delivered education and business services, all with limited resources. Early on, we recognized that the move from traditional client-server applications to, at first, in-house web-based applications (we called them "*weberized"* in the early days) and later hosted, browser-accessed applications (leading to today's Cloud services), gave us a chance for sustainability. For starters, we only had to maintain one instance of the application – a huge win for technology departments with tight budgets and too few people. But there was a problem.

As businesses recognized opportunities to provide needed services to the education market, they each developed application and database structures to suit their own needs. Inevitably, given the nature of a student/teacher environment, the notion of provisioning and authenticating users emerged. In most cases, the service provider would build their application with internal authentication (username/password) but leave the provisioning of users to the customer. That approach might be sustainable if a school district had only one service, but that will hardly be the case over time. One can see that as the number of services increases, very *unsustainable* situations arise – multiple (maybe dozens) of usernames and passwords to manage for thousands of users, multiple applications that each need unique (and sometimes very poorly designed) provisioning, and the often unobtainable need to hire additional non-academic staff, to name a few. We all know that good technology is quiet. What was ahead for us sounded not so quiet.

Luckily, we happened across information about a training class for implementing a Shibboleth Identity Provider (IdP). The fact that we didn't know what that meant didn't stop us, because in the description was the term 'Single Sign-on' (SSO). That sounded good. Soon we learned the technical aspects of Identity Federation and the role of InCommon, and we discovered an opportunity for RCS to help in a K-20 pilot study being sponsored by our Regional Optical Network provider MCNC (NCREN). We quickly volunteered. We were sponsored into InCommon by one of the higher education participants in the NCTrust pilot and before long we had the RCS IdP up and running. Looking back, that was the easy part. Finding a service provider with Federated Identity savvy (SAML-based access) was another matter.

It is difficult to convince a service vendor to convert their existing code to use SAML assertions when they are new to the technology and/or are not sure of the business justification. We ran into many such roadblocks. You can imagine then, our excitement when a Learning Management System vendor actually said, "Yes, we can support Shibboleth SSO". Because our IdP was already running, we were able to connect relatively quickly, and from the beginning have been extremely satisfied with the outcome. Not only has the service worked as designed, but having a working example of a SAML-enabled application has always aided us as we engaged other service providers with the idea. We are pleased that we now have four vendors integrated with our Shibboleth implementation, including one who was able to incorporate auto-provisioning of accounts as well.

Identity and Access Management is a growing need, especially in K-12 settings. Funding challenges, along with increased technology-in-the-curriculum opportunities, require schools to make smart decisions. But adding a user/password (identity) burden to every education service adopted by schools is not one of them. Identity federations such as InCommon will help to further this technology once the funding models for K-12 are addressed; and regional federations such as NCTrust are already helping. Vendors need to be involved in IAM also. But we know this from our experience - once implemented, the technology did indeed fall silent. And that is exactly what good technology does - it disappears.

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