Data Center and Server Consolidation Initiatives
Response to Federal CIO Council Request

Background: In 1974, via an Executive Order, the concept of cabinet bureaus (as opposed to traditional cabinet departments) was established for administration, finance and management, information technology (IT) and personnel. All but the IT bureau were stood up at that time—the IT bureau did not happen until 1994.

South Dakota was the first state in the nation to centralize every aspect of IT in 1996. Several years later we had wrung out most dollars from the IT budget through consolidated services, standardization, and shared services. Consolidation allowed South Dakota to do IT on 60¢ per pre-consolidation dollar and stay below pre-consolidation staffing levels for 12 years—all the while increasing capacity and services.

Many lessons have been learned over the last 14 years in a consolidated IT environment. Organizations entering this phase will need to deal with the risk of enterprise wide failures; keeping up with all business venues at once; prioritizing agency IT investment portfolios across the enterprise; branding state government rather than a given agency; and the politics of it all. Also, recessions hit harder when the "low hanging fruit" of consolidation has been plucked.

Gaining stakeholder traction: Gaining the use of the Governor's political capital had the biggest impact. Showing the cost savings on "paper" rendered most critics silent. Note, that in South Dakota, very few communities have enough resources to handle any contingency out of the ordinary. Hence, people are used to helping each other in time of need. IT has proven to be a very expensive proposition, which has moved people to accept common IT resources.

Technical issues: We tackled shared infrastructure (i.e. data center and telecommunications) consolidation first—closely followed by shared applications, such as email, time accounting, budgeting, accounting, etc. To fully leverage consolidation, standardization of IT capabilities and services happened. Even though South Dakota often has only one standard way of doing a given aspect of IT (i.e. one email system, one videoconferencing system, etc.), many standards have multiple solutions (e.g. we allow three database management systems, three hardware platforms, etc.). Our experience has

shown we maximize our cost savings if we can get to a single enterprise solution, but that is not always possible for a variety of reasons.

Energy efficiency improvements: Consolidation brings about some energy savings through an overall reduction in IT hardware—for instance, we consolidated three data centers into one with only one mainframe. But the bulk of our energy efficiency resulted from employee behavior changes (i.e. turning off PCs at night) and use of virtualization techniques.

Multi-tenancy approaches: We not only provide IT services to the Executive Branch agencies but also to the judicial and legislative branches, constitutional offices, higher education, K-12 school districts, and local, federal and tribal governments. With only one mainframe and virtualized servers, our clients are often sharing the same hardware/software—we do have some isolated equipment, such as the Lottery computers. Some services are shared by everyone—we act as the ISP for all 175,000 of our clients, in a state of 840,000 people (state government has 13,612 employees).

Cloud adoption: South Dakota sort of did this long before the cloud concept was coined. For instance, we have one network that offers voice, data, video, RF and broadcasting, all provisioned by one organization. We do the same thing with computing via our mainframe or virtualized server farm. Also, we provide common business functions across state government, such as email, e-discovery, time accounting, eligibility determination, etc. We are looking into current day cloud offerings for possible outsourcing.

Human capital issues: We had to "level" the skills of like staff across the newly consolidated IT workforce. Training and professional IT management were key in accomplishing this goal. If we had to consolidate again, then we would want the 360-degree performance evaluation methodology we implemented this year.

Governance model: A single CIO was brought in to manage IT vision, strategies and operations at the start. Consolidation started with a 23% cut in staff and a 16% cut in capital—prior to the CIO coming on board. A new administration, seven years into consolidation, established an IT governing board made up of the Chief of Staff, Comptroller, Chief Finance Officer, Chief Procurement Officer, one agency cabinet head and the Chief Information Officer as chairman.

Use of PMOs: South Dakota does not use PMOs due to our limited staffing levels (298 IT professionals) and previous implementation of Project Portfolio Management (PPM) across state government. PPM allows the IT governing

board to assess and approve all state IT investments above $10,000 or using 100 or more hours of IT professionals—while the IT organization manages all IT projects.

Contact:

Otto Doll

Commissioner and Chief Information Officer

Bureau of Information and Telecommunications

700 Governors Drive

Pierre, SD 57501

(605) 773-5110

Otto.doll@state.sd.us