Discovering IT Spending Levels by State

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ABSTRACT
Citizens seeking better government services are often caught between competing government priorities. These priorities are often politically motivated, deceptive, and influence the degree to which different funding priorities are met. Government agencies seek to increase their budget without increasing performance, and often receive additional funding from legislatures seeking oversight of these same agencies for not performing. One method of influencing these priorities is to discover similar funding within competing states and compare relative levels. This information can then be used as political motivation to increase or decrease IT funding to specific areas.

Keywords
State spending, state government, education, oversight, law enforcement, transportation, and human resources

INTRODUCTION
State governments are moving toward a digital future. Unfortunately, their desire to move forward is shrouded by the stormy clouds of uncertain funding, the overwhelming needs to modernize extensive services, and political infighting that serves to hinder or enhance the use of IT enabling technologies. Recent statewide budget cuts have slowed or delayed many IT projects within state governments, especially within the State of Iowa. Importantly, Iowa legislative leaders wanted to know how their state compared to other states in terms of IT competitiveness. On behalf of a State of Iowa legislator, we were asked to benchmark IT spending by state for the purpose of determining where Iowa ranked.

Of interest to us are the decision processes legislators would use in evaluating this information. Given benchmarked information, what would the impact be on the legislative decision process? How would legislators react to evidence of spending that lagged or exceeded that of nearby states? Would spending priorities be established or changed based on evidence of IT spending not meeting statewide objectives? Thus, this research in progress seeks to benchmark IT spending by state and state agency, disseminate this information, and then track this information through the legislative process.

BACKGROUND AND THEORY
One of the difficulties in benchmarking IT spending by state is that the budgeting process and accounting procedures differ in each state. States generally have two different types of budgets: an operating budget and a capital budget (Officers, 2002). The operating budget is the budget established for the operation of state agencies or programs. The capital budget is the budget associated with acquisition or construction of major capital items like land, buildings, structures, and equipment. Funds for these projects are appropriated from surpluses, earmarked revenues, or bond sales. Over half of the states operate on an annual budget cycle, which means that the budget provides appropriations for one fiscal year. Twenty-three states use a biennial budget cycle. There are two states that employ a combination of biennial and annual cycles. Fourteen of twenty-three states with biennial cycles have legislatures that meet every year, meaning the others do not.

Each state has a budget cycle similar to the one shown in Figure 1. The cycle typically begins when the state budget office provides guidance to agencies within the state government to submit budget requests, usually taking place in the summer. This guidance includes financial assumptions, spending targets, inflation, and policy from the Governor’s Office concerning priorities. State agencies then submit their budget in the fall. The budget office then reviews budget requests which include program and management evaluations, economic and revenue analysis, caseloads, and demographic information to determine need. State budget offices may also provide forecasts of national and state economic data to predict state business activity and future revenues.
Across states, there are varying degrees of collaboration between the state budget office and legislators with regards to caseload projections and revenue projections (Officers, 2002). Some state legislators perform their own analysis of caseloads and financial projections. Other legislators work together to arrive at a consensus. The budget process allows state agencies to present and review budget projections with the budget office. Often, legislative committees hold hearings to provide additional input to the budget office, legislature, and governor’s office. After review and analysis of state agency requests, the budget office makes final recommendations to the governor’s office. The governor reviews the recommendations, makes changes, and then presents the final recommendations to the legislature in the annual state-of-the-state address. The legislature then considers the budget. Each chamber of the legislature conducts its own review and formulates its own draft budget. Differences are resolved in committee. The budget is then approved and signed into law by the governor.

In recent years, economists have used the “social choice theory” as a way of analyzing the interactions between government agencies and state budgets by looking at the sums of discreet, rational subunits of organizational performance (Gill, 1995). The most cited model is Niskanen (1971 and 1975) which proposes a relationship between the legislature and state agencies. In this relationship, the legislature has a demand for agency outputs and the agency has a demand for funds from the legislature. The single goal of the agency is a perpetually increasing budget (Niskanen, 1971, Niskanen, 1975). Furthermore, this model assumes that the agency has perfect information about the legislatures demand and budget ceilings and that the agency is not required to itemize and cost individual outputs. In economic terms, agencies will produce past the level where marginal cost equals marginal value to provide a level of output that exceeds a socially optimal point. As a result, state agency budgets are always too large, outputs too great, and the legislature never receives a fair level of services for funds they expend. Thus, the quintessential bureaucratic priority is survival through budgeting.

Niskanen’s model has been discussed and added to over the years. Romer and Rosenthal (1978) suggest that high demand special interest groups may substantially influence state agency agendas at the expense of low and moderate demand special interest groups (Romer and Rosenthal, 1978). Mackay and Weaver (1981) showed that agencies producing substitute products benefit if they combine forces, and that they often gain from colluding (Mackay and Weaver, 1981). Miller and Moe (1983) suggest that the real power of agencies comes from technical or functional expertise. They conclude that when costs are aligned linearly with output level, and the legislature is aware of the fact, then the agency loses control of their agenda (Miller and Moe, 1983). Bendor, Taylor, and Van Gaalen (1985) contend that strategic opportunities exist for government agencies when information asymmetry exists where agencies use their technical expertise to control agendas.
with the legislature. They also see a difference between bureaucratic activity and bureaucratic output (Bendor et al., 1985). In essence, agencies may be deceptive in order to obtain greater budgets while risking the penalties of monitoring. Interestingly, monitoring leads to higher budgets because of the increased resources needed to monitor without losing output to voters. The legislature becomes trapped when agencies with high levels of technical expertise cannot have their services duplicated elsewhere. Bendor and Moe (1986) suggest that high levels of enforcement benefit consumers and that low levels of enforcement benefit corporations (Bendor and Moe, 1986). Complexity exists because state agencies want larger budgets, increased slack, and less legislative oversight. Special interest groups vary between those hurt by increased agency output and those who benefit from increased agency output. Clearly, the legislature wants to be reelected. Legislators listen to the loudest specialist group consistent with voter interest and support. Contrarily, recent evidence suggests that federal employees exert some control on senior executive federal spending priorities but in the opposite direction (Dolan, 2002). Obviously, we would expect to see some consolidation of IT services to improve efficiencies and gain budgeting leverage within state government.

METHODOLOGY AND PRELIMINARY RESULTS

In order to benchmark state IT funding, budget data for all fifty states was desired. Initial attempts to discover standardized numbers or accounting practices was futile. We sought to determine the 2003 budget for each state as well as their major agencies. We conducted extensive website searches to identify state budgeting information. We were surprised at how difficult this was. Additionally, we attempted to collect numbers relating to IT budgets within each major state agency. Interestingly, IT budgets fall under such diverse headings as digital services, computer services, data processing, and the like. There is little indication as to what services are provided under these headings. Further irregularities occur when federal matching funds are accounted for as each state assigns these funds to the budget slightly differently. The idea was that the federal government would require more standardized accounting of funds that would be similar in each state.

In the end, we focused on seeking Full-Time Equivalent (FTE) positions for IT type jobs. Table 1 shows FTE IT counts for IT employees within the executive branch of the State of Iowa ranked from lowest to highest. Forty-four entities provided information with one unusable submission. Data from the Attorney General, Secretary of Agriculture, and Secretary of State are unavailable. This data was collected as part of a larger data collection effort by the Department of Administration Services conducting an Enterprise Infrastructure Personnel assessment. We found 686 Full-Time Equivalent employees in IT type jobs however, it is possible that that 50% of the positions are programming in nature. These positions represent $37,631,017.50 in direct salary costs and a total of $47,040,266.38 including 25% for benefits. A limitation of this data is that it does not include IT contractors or consultants. Interestingly it does yield an average of 15 FTE state employees per state agency. This figure is of interest since the Department of Administrative Services - Information Technology Enterprise (124 IT employees) provides services to other agencies, including the governors office and may represent an effort to consolidate services. Another tidbit of information related to data collection is a quote from an unnamed but informed source that, “We have at least one, if not 2 or 3 of everything...” meaning that there were multiple databases, software applications, and that the state lacked standardization on even the most rudimentary systems.

<table>
<thead>
<tr>
<th>Organization</th>
<th>FTE IT counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Services - State Accounting Enterprise</td>
<td>0.00</td>
</tr>
<tr>
<td>Commerce - Alcoholic Beverages</td>
<td>0.00</td>
</tr>
<tr>
<td>Commerce - Professional Licensing &amp; Regulation</td>
<td>0.00</td>
</tr>
<tr>
<td>Governor's Office</td>
<td>0.00</td>
</tr>
<tr>
<td>Governor's Office on Drug Control Policy</td>
<td>0.00</td>
</tr>
<tr>
<td>Parole Board</td>
<td>0.00</td>
</tr>
<tr>
<td>Public Defense - Homeland Security - Emergency Management</td>
<td>0.00</td>
</tr>
<tr>
<td>Public Employment Relations Board</td>
<td>0.00</td>
</tr>
<tr>
<td>Veterans Affairs</td>
<td>0.00</td>
</tr>
<tr>
<td>Elder Affairs</td>
<td>0.25</td>
</tr>
<tr>
<td>Civil Rights</td>
<td>0.50</td>
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</tbody>
</table>
Of interest is whether or not government agencies have technical IT expertise. Our data indicated that some consolidation of IT services is being undertaken but across smaller agencies and only within the executive branch. Our theory would suggest that government agencies would want to gain IT expertise to improve services to some socially optimal point, and then merge with other agencies to gain budgeting leverage.

**LIMITATIONS**

The current study is very preliminary. We have not collected data from all fifty states. There continues to be trouble interpreting state budget entries. The difficulty lies in determining where IT money is spent. In discussions with researchers
at the Government Technology Conference (www.govtech.edu), these difficulties are experienced by all. It appears no one has a good grip on state IT spending and that most people are using estimates. Estimates are compounded by differing state budget and accounting procedures but FTE of IT employee counts gives us a more consistent standard to measure by.

FUTURE DIRECTIONS

Our first priority is to gather similar data from all fifty states. Given our sample of one, historical data may not be readily available. We would also like to gather further qualitative data concerning agency equipment choices and consolidations. Having achieved some standardization and understanding of our benchmarked data, we would like to prepare a summary report to local state legislators. We would like to record their impressions and gain some insight as to how this kind of information could be used politically. There is considerable research in IT about the apprehensions and anxieties users feel in adopting and integrating IT (Harris and Davison, 1999, Compeau et al., 1999, Klein et al., 1998). However, discussion of these effects is limited in the political science literature. Given the potential for IT to revolutionize and improve state services to citizens and save money, interest in how IT spending is perceived by elected officials would seem important. Further comparison with the IT literature about CIO’s in comparison with government leaders is also a possibility.

CONCLUSIONS

Determining IT budgets across state agencies has turned into a challenging problem. There are no standardized accounting practices or reporting procedures that allow for accurate comparisons. Preliminary indications suggest that state spending on IT differs significantly and that state budget priorities differ by agency. We think it important to provide benchmarked data about other states to elected leaders to record their reactions, determine future priorities, and leverage asymmetrical information. While most states have successful individual IT projects and applications they are proud of, we wonder if states can develop specific dynamic capabilities that will allow them to better serve their constituencies.

REFERENCES