Driving the Next Wave of IT-Enabled State Government Productivity

BY ALAN MCQUINN, ROBERT D. ATKINSON, AMBER LAXTON, AND DANIEL CASTRO | OCTOBER 2015

It is time for state governments to fulfill the original promise of e-government to improve efficiency, lower costs of government services, and boost the productivity of citizens and businesses alike.

In the private sector, companies have long used information technology (IT) to work smarter and faster—constantly maximizing efficiency as they improve products and services for customers. In short, they constantly strive to increase productivity. In the public sector, e-government initiatives are supposed to work the same way. Governments are supposed to harness IT to increase efficiencies, cut costs, and improve the quality of public services. All too often, however, governments focus primarily on improving services, not on increasing productivity. Lawmakers and administrators tend to view IT as a cost center, not a strategic investment that can produce tangible payoffs for taxpayers. This is partly because increasing quality and convenience for citizens is politically uncontroversial, while cutting costs—particularly labor costs—can be. But it is time for governments, especially state governments, to fulfill the original promise of e-government to significantly improve efficiency and lower the costs of providing services. By doing so, state governments could save as much as $11 billion over the next five years.[1]

What would it look like if states were able to fully realize their potential for IT-enabled productivity? Government programs would be leaner, employing fewer workers and using fewer materials. Government services would be fully digitized, with internal processes securely accessible by employees from anywhere and external processes easily available to all citizens and businesses. Self-service would be ubiquitous, and citizens would not waste time waiting in lines to speak to government officials to complete routine transactions, such as filling out a driver's license form or completing their taxes. All government forms would be

State	Cost Savings	State	Cost Savings
Alabama	$147,535,000	Montana	$65,026,000
Alaska	$117,795,000	Nebraska	$50,565,000
Arizona	$177,587,000	Nevada	$96,363,000
Arkansas	$138,575,000	New Hampshire	$48,095,000
California	$1,329,017,000	New Jersey	$584,172,000
Colorado	$173,855,000	New Mexico	$84,877,000
Connecticut	$248,085,000	New York	$788,930,000
Delaware	$88,054,000	North Carolina	$277,964,000
Florida	$472,227,000	North Dakota	$41,487,000
Georgia	$255,054,000	Ohio	$281,014,000
Hawaii	$101,440,000	Oklahoma	$159,409,000
Idaho	$64,266,000	Oregon	$215,632,000
Illinois	$425,422,000	Pennsylvania	$391,857,000
Indiana	$137,917,000	Rhode Island	$76,433,000
Iowa	$131,590,000	South Carolina	$145,934,000
Kansas	$78,512,000	South Dakota	$38,380,000
Kentucky	$169,836,000	Tennessee	$194,756,000
Louisiana	$148,571,000	Texas	$662,504,000
Maine	$59,373,000	Utah	$113,596,000
Maryland	$303,210,000	Vermont	$48,186,000
Massachusetts	$403,463,000	Virginia	$216,765,000
Michigan	$286,751,000	Washington	$343,881,000
Minnesota	$215,050,000	West Virginia	$88,294,000
Mississippi	$93,646,000	Wisconsin	$168,174,000
Missouri	$183,381,000	Wyoming	$41,345,000
Total			$11,173,850,000

Figure 5: Potential savings over five years from IT-based productivity gains in U.S states.[19]

How IT Can Boost Government Productivity

IT can help boost government productivity in at least five ways. First, IT can reduce nonlabor inputs, such as by cutting material costs. Some governments cut material costs by automating processes, making their energy usage more efficient, or using telework solutions to reduce vehicle and fuel costs. For example, California's prison system uses telehealth devices to reduce the number of inmate medical trips, reducing costs related to gas and vehicle maintenance and increasing safety.[35] By offering self-service systems that allow residents or businesses to submit information electronically, government agencies can cut down on paper forms and mailing expenses, in addition to saving time.

Second, IT can reduce labor input by either enabling workers to be more efficient or to completely substitute an IT process for the worker. In some cases these changes make internal operations more efficient. For example, Michigan automated much of its HR management system, allowing employees to fulfill most of their own HR needs online.[36] In other cases, government IT can make citizen- or business-facing operations more efficient, and reduce labor input of both government and nongovernment employees. For example, Arkansas employs a self-service web portal for businesses to complete more than 500 services online, reducing its employee costs.[37]

Third, IT can reduce government costs by reducing waste, fraud, and abuse. For example, New Mexico uses an advanced fraud detection system to identify irregularities in its unemployment insurance program.[38] Similarly, Massachusetts uses predictive modeling to detect fraud in its Medicaid program, known as MassHealth, which is an integrated system that uses algorithms to analyze all claims when they enter the system. Since its launch in 2013, the state has realized more than $10.5 million in cost savings by preventing errant payments and post-payment recoveries. In its first year, MassHealth helped recoup its $6.9 million cost (most of which came from federal funds).[39] To the extent these payments were for unnecessary services or enabled people to stay out of the workforce longer, they boosted productivity.

Fourth, governments can increase the efficiency of their IT investments through actions such as replacing older equipment with lower-cost technology, consolidating data centers, digitizing paper-based workflows to eliminate printing costs, or moving to cloud-based services. For example, in 2014 Texas implemented a cloud-based procurement system that replaced its legacy system, cutting maintenance costs from $11.5 million annually to under $3.3 million.[40] The total cost of this upgrade was $2,972,700 for subscription service licenses and development time, and $185,900 in personnel costs.

Finally, government agencies can increase productivity by improving service quality. While this may not lead to reduced inputs, by definition higher quality services result in increased output. For example, Idaho uses a secure mobile payment processor enabled by Android-based smartphones to take secure mobile payments in the field, increasing citizen convenience and the security of each payment.[41]

period, because a 40-year-old malfunctioning computer system was filled with glitches, often forcing employees to revert to manual processes.[142] Maintaining inefficient and costly systems is expensive and limits the funds that states have to update these systems. Some state officials understand this barrier. "The biggest issue is money, given the billions of dollars needed to modernize those systems across the country," said Doug Robinson, executive director of National Association of State Chief Information Officers (NASCIO). "What many people don't understand is that the digital infrastructure is just as fragile as the physical infrastructure—the roads and bridges in need of repairs. Both require money to fix."[143] Many state systems are decades old, and are not interoperable, making sharing information and updating them even more costly.

Rather than invest more money now to upgrade systems so that maintenance costs are lower over time (and performance is higher), however, most states scrimp on capital expenditure investment but pay higher operational expenditures. In other words, too few state policymakers are willing to treat IT projects as long-term capital investments worthy of funding. Instead, they often fund IT on a year-to-year budget.[144]

From 2009 to 2013, the U.S. private sector increased investments in IT by 15 percent, or over $447 billion.[145] In contrast, state and local IT spending has remained fairly steady at around 3.6 percent of the total operational budget over the last five years, with state spending per employee actually declining to $8,355 in 2014 from $8,581 in 2013.[146] According to Deltek, states spent approximately $25.8 billion on IT in 2014.[147]

Federal Funding Often Creates Data Incompatibility Among State Agencies

Federal funds often support state IT. Unfortunately, this also leads to complications when federal requirements are inconsistent and ambiguous, and federal directives do not align with state priorities. For example, federal earmarks on state funding often restrict states from financing government software solutions because this investment is an intangible asset.[148] Similarly, online consumers of state websites cannot use a single login for multiple government websites because of inconsistent federal cybersecurity regulations for those agencies' funding.[149] This lack of federal coordination often further forces state IT programs into silos, especially when it comes to the data they collect. Different federal agencies may require different data standards, reporting requirements, programmatic rules, or IT infrastructure from other state agencies, leading to incompatibility among agencies within states.

Lack of federal alignment and coordination also hampers the possibility of future cross-boundary data sharing and shared services—a top priority for many states. For example, the Substance Abuse and Mental Health Services Administration (SAMHSA) awards block grants to state governments for substance abuse prevention and treatment, and community mental health services.[150] How states use this funding for treatment and prevention programs varies as do their reporting requirements. According to the SAMHSA website, grantees receive progress reporting guidelines and requirements at the time of the award.[151] Depending on the nature and goals of the specific program, reporting requirements for one state may not match the requirements of a neighboring state. This becomes a problem when sharing health information across state lines.

Organizational Barriers

Evidence from the private sector suggests that IT is most effective in driving productivity when it is associated with business process reengineering.[152] Both increased productivity and reengineering can disrupt governmental organizations and as such can run into obstacles from organizational cultures that typically resist change. Moreover, the state official in charge of executing IT efficiencies, usually the state Chief Information Officer (CIO), often lacks the authority to mandate IT-enabled reengineering, and in no state is there a chief productivity officer whose job it is to drive agency productivity. And even if agency heads decide to move forward with IT-enabled reengineering, agency employees can resist the change. The result is a lack of incentives for relevant stakeholders to change the status quo.

CIOs Lack Control

CIOs in most states lack control over the IT budgetary and procurement processes for individual agencies and only provide oversight to those agencies on a project-by-project basis.[153] Decentralized budget and procurement processes are not only complex and inconsistent, but they also limit the CIO's ability to understand the full scope of IT needs across the state.

One challenge starts with procurement. Nearly two-thirds of state-level CIOs view their procurement process as either somewhat or very ineffective.[154] Agency heads historically managed procurement processes independently to identify IT solutions that best matched their mission and goals. Therefore, agencies have their own stake in the procurement process and are hesitant to relinquish control to a centralized authority. While this disjointed process offers some benefits in the form of agency empowerment, it also leads to duplicative IT costs and muddled IT standards across the state. This dynamic also often forces CIOs to battle to change agency IT decisions and exercise their IT expertise in agencies' procurement decisions. This hinders the CIO's ability to provide interoperable IT solutions to state agencies while cutting duplicative efforts. If CIOs are unable to make purchasing decisions, then they are unable to choose IT investments that could boost the state's productivity.

State Agencies Do Not Sufficiently Leverage External Partnerships

State IT agencies often do not leverage third-party organizations as partners in providing e-government services and connecting government services to private ones.[155] Moreover, it is often difficult for agencies to be citizen-centric, designing applications with the needs of the user first and foremost in mind. Governments need to do more to think of themselves less as direct providers of e-government services and more as enablers of third-party integrators that tie together multiple agencies across multiple levels of government to package information, forms, regulations, and other government services and requirements in a user-friendly way.

State Agencies Lack Incentives to Cut Costs Through Productivity

There are three major goals of e-government: increase administrative efficiency, improve service, and increase citizen engagement.[156] Certainly all three are important. However, it is perhaps surprising that most governments focus more on the second goal—and to some

negotiated labor contracts between California and state government employee unions allow state workers to retire, collect their pensions and then return to work, often making more money than they did before.[162] They also can purchase more lucrative pension benefits before they retire. This pushback often plays to the politics of headcount, where states do not want to be seen cutting any workers or reporting workforce reductions. Over 2 million state workers are represented by unions, which is a rate of 32.8 percent—almost five times higher than private-sector workers.[163] This institutional barrier to removing superfluous employees forces states to enter into hiring freezes as they wait for worker attrition.

RECOMMENDATIONS

States face many barriers to driving IT-enabled productivity. However, to make faster progress toward this goal, there are a number of steps that states should take.

Strategy Recommendations

If states are to better drive IT-enabled productivity, this goal needs to be elevated to a strategic level.

States Should Adopt Statewide IT-Enabled Productivity Strategies

States should develop IT-enabled productivity strategies with the explicit goal of being able to cut headcount while producing the same or higher level of services. This strategy should be led by the state CIO, and lessons learned should be shared among all state agencies and other states. This strategy would require a detailed analysis of each agency, evaluating how to reduce headcount and cut costs through IT-enabled systems. For example, if a CIO sees an opportunity to incorporate kiosks in public sector customer service centers, thereby reducing headcount and boosting efficiency, he or she should move to help the agency incorporate that technology. As part of these efforts, policymakers should not shy away from attrition or workforce reductions. Indeed, that is an indicator of success, as long as service quality and output are not cut.

In short, CIOs need to be more explicit about the promise of exchanging technology for labor. They need to articulate that a key purpose of state e-government should be to cut the costs of government, including labor costs. If state policymakers want to use those savings to expand services so that no workers are laid off, that can be their choice. Nevertheless, the CIO's role should be to drive IT-led productivity. This strategy should appeal to both sides of the political spectrum. Policymakers interested in decreasing the size of government can use the cost savings from this strategy to cut taxes. Policymakers interested in providing expanded public services can use cost savings to support additional services and investments.

Organizational Recommendations

CIOs serve an important role in state governments, creating a comprehensive IT vision for the state. However, governors should change this role to have their CIOs focus on improving productivity in all agencies and services through the use of IT. This change would require statewide CIOs to have increased decision-making authority.

Provide State CIOs With More Decision-Making Authority

In order for state CIOs to implement a comprehensive state productivity strategy, they will not only need increased authority, they will also need strong backing and leadership from the governor. Without the governor's leadership to overcome potential agency and legislative resistance, the most e ective CIO will not succeed. CIOs cannot be the only voice for change in state government.

However, governors also need to elevate the role of the CIO, not just to provide the position with more authority to oversee a comprehensive IT strategy, but also a comprehensive IT-enabled productivity strategy. This strategy would enable CIOs to plan and coordinate IT investments with an eye to improving efficiency across all state operations, not merely focus on IT outcomes.

State CIOs Should Be Productivity-Focused Rather Than Just IT-Focused

Much of what is fashionable for state CIOs is the promise of improving IT systems, such as switching from legacy systems to the cloud, acquiring better security suites, or developing comprehensive IT strategies. This approach is notable because more advanced systems do serve a purpose in cost cutting; however, this strategy is focused on overall IT improvement rather than using IT to solve individual problems. IT systems fundamentally promise to increase the efficiency and effectiveness in government through boosted productivity. To meet this need, CIOs should be focused not just on IT infrastructure, but also on IT-enabled process reengineering.

CIOs should proactively seek out technologies that can improve state processes, cut costs, and serve more citizens. CIOs should look for these opportunities, or encourage state agencies to look for these opportunities, in nontraditional places for IT (e.g., forestry, wildlife, or construction-focused agencies). For example, if a self-service mobile app can completely cut out the need for manual paper entry for a parks and recreation department, the CIO should investigate that opportunity.

States Should Set Dates by Which They Will No Longer Accept Non-Digital Interactions

While many state information functions dealing with businesses or citizens are digital, often the usage rate is low. This usually because the state does not do enough to publicize the e-government channel. In many cases, the e-government channel is poorly designed, so that it is easier to use traditional paper forms. One step states could take would be for every e-government function to allow users to rank the ease of use of the transaction, with the

However, the federal government needs to also play a role. One challenge is that some of the benefits of state IT programs spill over to other states. Another challenge is that the IT solutions developed in one state could be relatively easily replicated in other states, but for a variety of reasons are not. The U.S. federal government should adopt a productivity interstate services challenge program to address these issues, operated out of the federal CIO office.

States Should Cooperate on Shared IT Services

One interesting, but little noticed economic trend over the last decade is how IT has allowed for an increase in average firm size in the United States. IT enables firms to gain scale. For example, insurance companies do not need 50 different customer service or claims processing centers. They can use IT to consolidate their service centers. If states were businesses, by now they would have consolidated into a smaller number than 50 in order to gain scale economies enabled by IT, both in the development of IT applications and in the operations of IT-enabled services. But clearly they are not businesses and do not have that freedom. But that does not mean that states could not enter into partnerships with other states to share not only e-government applications but actual operations. Most states officials will respond that their state is unique and under no circumstances would be able to share operations with another state. At one level that is right, as each state is unique. But for many operations characterized by routine functions (e.g., renewing driver's licenses), there is much that states have in common, and the beauty of IT is that it can relatively easily incorporate customization.

Toward that end, groups like the National Association of State Chief Information Officers (NASCIO) should work to establish an IT platform-sharing system, which multiple states would contribute to and benefit from. Each state would benefit from the collective action of its peers, and state IT software suites—a collection of computer programs that share a common user interface—bought by the states can be of a better quality than any single state can purchase with its own budget. In addition, individual states, especially small ones, should experiment with small-scale shared-service efforts, perhaps just with a neighboring state, to develop shared systems.

CONCLUSION

IT is powering productivity in virtually every sector of the economy. Yet states do not appear to have taken full advantage of emergent IT systems to drive government productivity. Now is the time to fulfill the original promise of e-government: not only to provide better and more convenient services, but to drive productivity in state government and state economies.