

## Trends in Statewide ERP Implementations

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Gartner and the National Association of State Chief Information Officers (NASCIO) conducted a survey on statewide ERP implementation efforts of U.S. state governments in 2009. Statewide (which is also called enterprisewide) ERP activity is under way in 72% of the 37 states surveyed, ranging from the early planning stages to recent implementations of enterprise solutions. Government IT, finance and HR executives who are implementing or who plan to implement ERP should read this survey to understand how to address their key challenges.

### Key Findings

- Enterprisewide ERP implementations are widespread among U.S. state governments.
- The top three reasons for moving to a new statewide ERP solution were: (1) better decision making through the use of better information resources; (2) IT modernization to replace obsolete legacy systems; and (3) enabling the state to significantly improve constituent services through faster processes and more accurate and complete information.
- System integration services are the most significant cost components of statewide ERP projects.
- Organizational change management — that is, mobilizing and preparing the workforce for business process, organizational and job changes — is the single most readily cited factor driving the success, failure or organizational turmoil experienced in enterprise ERP initiatives. In short, this is a must!

### Recommendations

- Establish a project team to focus on organizational change management.
- Actively involve business subject matter experts, such as finance managers, in organizational change management activities throughout the project life cycle.
- In addition to looking at costs from a tactical point of view, focus on strategic cost drivers by taking an application life cycle view (that is, the total cost of ownership).
- Consider a hosted solution to improve the ability to provide quality support services and obtain access to relevant market skills.
- Include several activities to guard against unsuccessful outcomes, in addition to the traditional disciplined project management activities.

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## ANALYSIS

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Between April and June 2009, Gartner and NASCIO collaborated to conduct a formal survey of state CIOs on their enterprisewide ERP implementations. The purpose of the survey was to obtain quantitative and qualitative information on statewide ERP implementation efforts of state governments across the U.S. in 2009. Thirty-seven states responded to the online survey (see Note 1 for respondents' profile). During the NASCIO Midyear Conference held in Baltimore, Maryland, Gartner also interviewed representatives from 10 states to gain additional perspectives on lessons learned.

For the purposes of this survey, we define "enterprise" to mean the whole of state government — executive, judicial, legislative and higher education branches. However, there are notable differences between smaller states and larger states in implementation scope, solution functionality, scope of services procured and the level of customization.

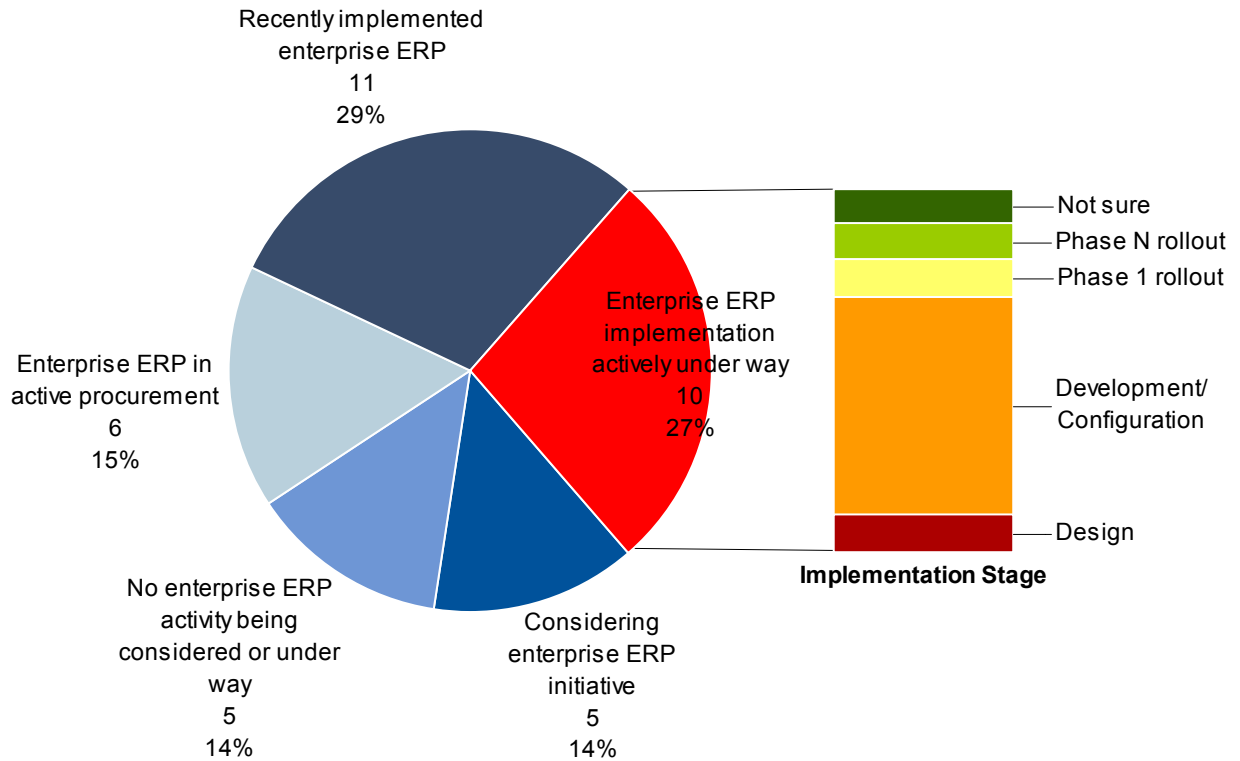
This research should be regarded as a one-off exercise resulting from the ongoing collaboration of Gartner and NASCIO. Gartner does not plan to update this research on an annual basis or to provide more in-depth analysis in the next 12 months about related topics, such as product features of ERP software packages for governments. However, Gartner analysts will consider writing about ERP in the government space in the future, as specific trends, or case studies, drive new good practices in ERP adoption and implementation.

### 1.0 Current Status of U.S. Statewide ERP Activity

Statewide ERP implementations are actively being pursued across the nation. In the public sector, they typically include functionality supporting financial, human capital management and procurement processes. In our survey, respondents were asked to describe the status of their organizations' planned statewide ERP projects. Responses ranged from "recommended, but no resources devoted to the initiative," to "implemented, and up and running."

We found there was a great deal of activity — only five states (14% of the respondents) reported they had no ERP activity under way, being considered or recently implemented. Eleven states (29%) had recently completed an ERP implementation; five states (14%) were considering ERP; six states (15%) were actively in the procurement phase; and 10 states (27%) were implementing an ERP. Of those implementing an ERP, 60% were in the development or configuration stage (see Figure 1). On average, the states were in Year 3 of a five-year project timeline.

**Figure 1. Statewide ERP Implementation Status**



Source: Gartner (October 2009)

Survey respondents reported that all of these implementations included executive departments. Some 53% also included the judicial branch; 38%, the legislative branch; and 25%, higher education.

Overwhelmingly, PeopleSoft ERP was the solution of choice for most statewide ERP implementations — 11 respondents (42%) selected it as the product of choice (see Note 2). One reason for this strong preference is PeopleSoft's capabilities in handling public-sector payroll transactions and budget control capabilities — the product was developed to handle unique aspects of the public-sector payroll, such as using multiple funding pools, position control, and pre-encumbrances and encumbrances.

Smaller states were alone in selecting CGI-AMS, JD Edwards and Lawson, and large states were alone in describing their vendor selection as "other" — representing a solution that includes elements from multiple vendors, resulting in a multivendor solution and, potentially, integration with legacy systems. Most states did not select their software solution vendor to provide implementation services.

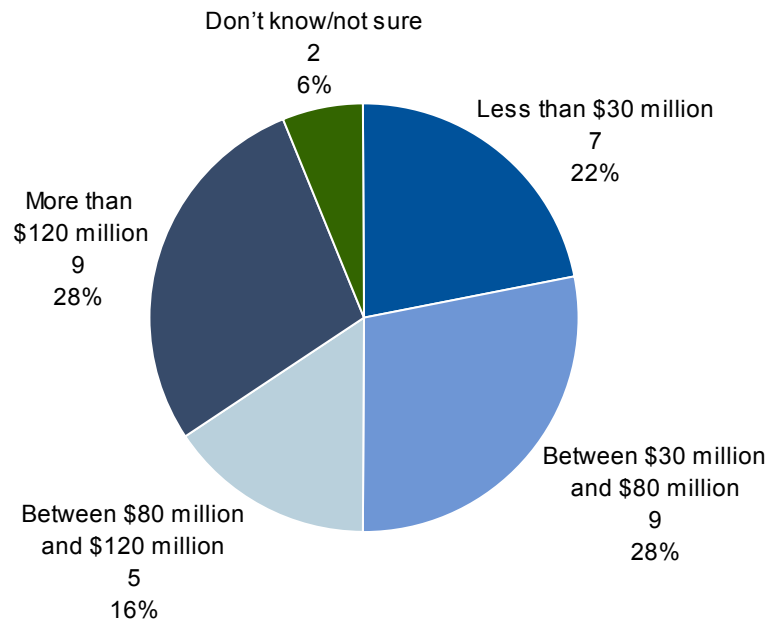
Selected ERP functionality varied among the states. The top functional modules included in the ERP implementation were general ledger, accounts payable, accounts receivable and billing, reporting, procurement, and budget control. However, as discussed later in this research, some states included other modules, such as employee self-service (ESS) and grant management.

Areas such as corporate performance management and fixed asset management may be treated as separate initiatives (see Note 3).

## 2.0 Statewide ERP Costs and Cost Drivers

ERP initiatives are multiyear, multimillion-dollar investments for most organizations, and it was no different for the enterprisewide ERP initiatives for the states surveyed. The size and scope of the initiative can be measured on a variety of scales — number of departments and branches of government included, number of individual solution modules involved, number of state employees affected, the length of time for the project, and the size of the state in terms of population — each of these factors in its own way can impact the overall program costs. For this research, we will use population as a determinant of state size and differentiate between state size and ERP implementation "size" or breadth. Figure 2 shows respondents' five-year total ERP project costs.

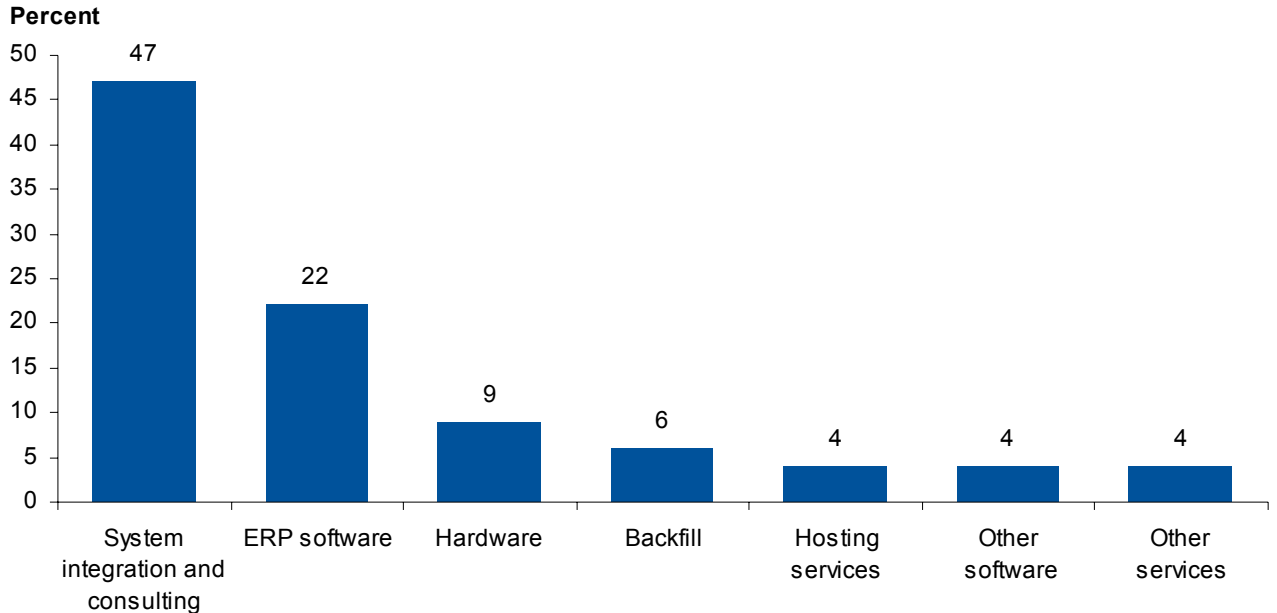
**Figure 2. Five-Year Total ERP Project Costs**



Source: Gartner (October 2009)

For the states responding to our survey, 14 planned to spend between \$30 million and \$120 million on their enterprise ERP initiatives, and nine planned to spend more than \$120 million. Seven planned to spend less than \$30 million. Of the total project expenditures, the largest portion of the investment went to system integration services, with the next largest component being the costs for the ERP software itself. As Figure 3 shows, these cost areas constituted 69% of the total costs. This is similar to estimates of SAP implementations in the private sector, where implementation service costs are 70% of total implementation costs.

**Figure 3. ERP Spending by Cost Category**



Source: Gartner (October 2009)

One area that increases ongoing operational costs for ERP is the level of customization included in the enterprise ERP initiative. Customization, which can include reporting extensions, interfaces to legacy or external systems, and source code modifications, has a development life cycle of its own, and it can add to the cost and complexity of support and upgrades (see "Customization: The Cost That Keeps on Costing"). Six states estimated that they planned to spend more than 10% of the total project cost on customizing their ERP solutions, and 10 states estimated they would spend between 5% and 10% of total costs.

### 3.0 Critical Success Factors and Practices

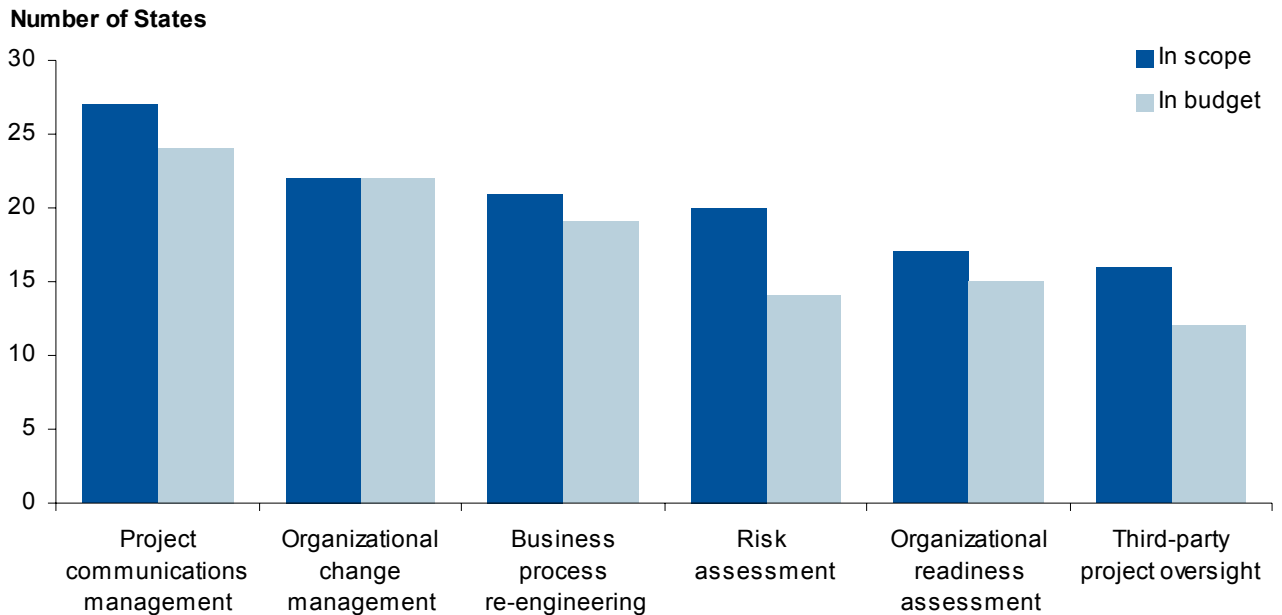
In our December 2008 report, "ERP Implementations in State Governments: Keys to Success," we identified seven common challenges that state governments face when implementing ERP solutions:

1. Risk management
2. Implementation management
3. Expectation management
4. Sustained executive sponsorship and project governance
5. Poorly defined organizational scope
6. "We are different" attitude
7. Procurement and vendor management

The 2009 Gartner-NASCIO survey reveals that enterprisewide ERP implementations have adopted strategies that address several of the challenges identified.

Some 85% of respondents selected someone other than the product vendor to provide implementation services. In addition, a significant portion of respondents included services intended to offset the implementation risk in the scope and/or budget for their projects — the distinction here being that the project budget reflects out-of-pocket costs associated with the activity. If the activity were performed by state personnel, it may well be in scope, but may not be captured in the budget directly. These services are shown in Figure 4 and include project communications management, organizational change management, business process re-engineering, risk assessment, organizational readiness assessment and third-party project oversight (IV&V) services.

**Figure 4. Additional Implementation Services Included for ERP**



Source: Gartner (October 2009)

Previously, we reported that organizational change management and training were among the first areas to be cut if the budget needed to be cut (see "Address Five Key Factors for Successful ERP Implementations"). Our state respondents bucked this trend — training was No. 3, and organization change management was No. 9 in the list of top services that were included in the scope and budget for their enterprise ERP implementations. When asked about the most important lessons learned from their implementations, state CIOs confirmed that addressing organizational change management and ensuring appropriate training levels facilitated greater adoption of the statewide ERP.

Twenty-four states had conducted a feasibility study for their ERP projects. The feasibility study or business case can play several roles for the state, including serving as a mechanism for informing executive management on the initial and ongoing costs for supporting and maintaining an ERP solution, thereby setting expectations. In today's environment, a strong feasibility study can serve as a catalyst for IT modernization, improved service delivery and risk management (see "Gartner Interviews Andrew McAfee on Why Investment in Enterprise Applications and ERP Matters"). It can also help to sustain executive support for the implementation, especially if the project crosses from one administration to another.

Seventeen states (54%) described their ERP project governance as "including multiagency participation for reviewing and prioritizing potential changes," with an additional nine states (28%) having a governance structure with limited agency participation. Only five states (15%) didn't have a governance structure with multiagency participation, or they described their governance structures as "other" (see "Ten Components of Effective ERP Governance"). The scope of ERP governance is typically broader than other IT governance mechanisms — statewide ERP solutions require increased coordination and participation from agency functional areas (for example, finance, procurement or human resources) with the IT department. Some states have established a separate organizational entity to ensure fairness in decision making and prioritization.

Twelve of our state respondents set aside funds for backfilling staff — and an average of 6% of total costs went to backfilling staff. This suggests that statewide ERP initiatives recognized and planned for the need to have business subject matter experts participate appropriately on the project team. The organizations freed up business subject matter experts from other day-to-day tasks so that they could more fully participate. In a previous survey of 100 Gartner clients that had implemented large enterprise systems, we discovered that business representatives made up nearly half of many of their implementation teams (see "The Role of the Business Process Analyst in ERP/Business Application Support"). A key role on these teams was the business process champion (aka the business process owner) who owned one or more processes, and served as the primary conduit for information passed between the business unit and the implementation team. While statewide implementation project teams may not approach the same level of business participation, this 6% represented a noticeable portion of project costs.

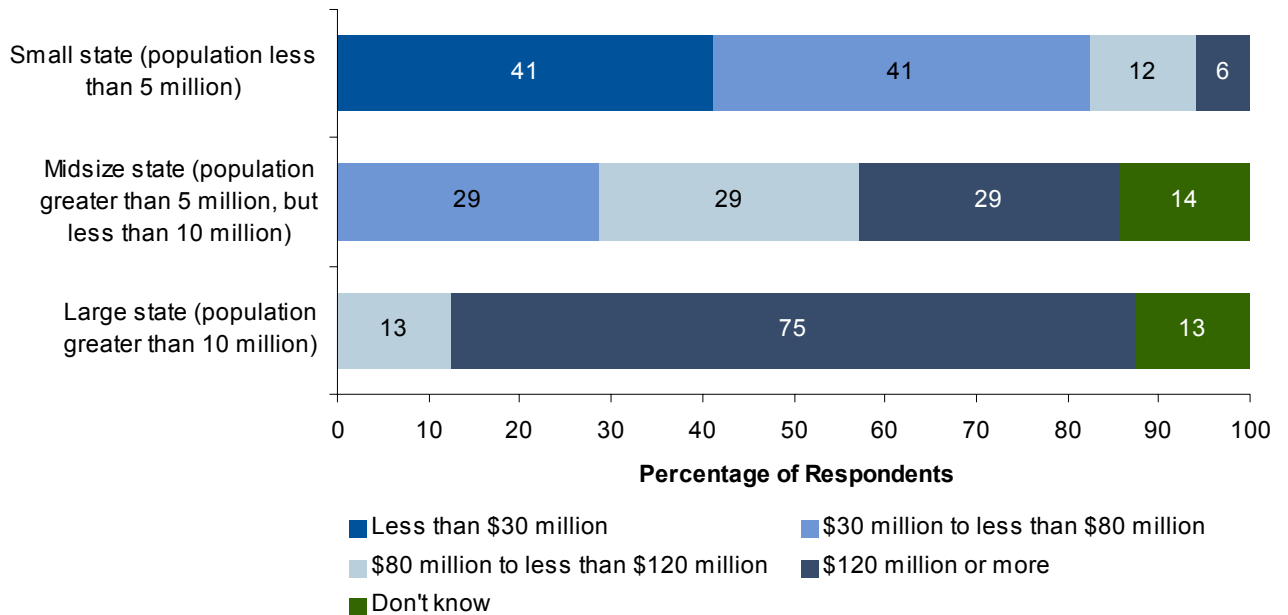
In a departure from recommended best practices, 16 states planned to spend over 5% of the total costs in customizations. Gartner recommends that organizations put practices in place during the planning and design phases to actively reduce the tendency to allow customizations (see "Customization: The Cost That Keeps on Costing"). If customizations are allowed, organizations must set up a modification review process to prioritize enhancements over cosmetics, and they need to include their life cycle costs in the overall project costs. With statewide implementations, agencies may have previously operated autonomously, using completely different practices and processes to perform similar tasks. Thus, a best practice would be to conduct a comprehensive gap analysis to understand the differences that may exist between agencies' operating practices and gauge the true need for customization. Enterprises that implement an ERP solution without a strategy to standardize business processes (and so reduce the need for customizing) will likely struggle with achieving the desired business value through their ERP projects (see "How to Evaluate Your Vendor's ERP Strategy").

## **4.0 Size Matters: Contrasts in Small-State vs. Larger-State Implementations**

States with larger populations tended to spend more on their ERP implementation efforts. Six of the eight largest states (75%) — those with populations more than 10 million — are planning to spend more than \$120 million. Only the small states — those with populations of less than 5 million — are planning to spend less than \$30 million for their ERP implementations (see Figure 5). A number of factors can drive costs, including the size and scale of the deployment, the number of functional modules being implemented, the level and type of services included in the scope of the project, and the level of customization.



**Figure 5. Five-Year ERP Project Costs, by State Size**



Source: Gartner (October 2009)

However, implementation cost is not the only difference identified between states of different population sizes. For example, states with populations of less than five million were more likely to include hosting services as part of the approved project budget — four of the five state respondents who did were small states. In addition, four of the midsize and large states (those with populations of over five million) did not include traditional system integration and support services as part of their project budgets (see Figure 6). This suggests that they were more likely to take on these implementation tasks themselves, possibly using independent contractors.

As reported previously, implementation management skills are critical to the success of the ERP initiative. Seasoned project managers with experience in large-scale project management disciplines and integration activities associated with legacy IT modernization are required, as are disciplined project management processes and a defined project management structure. States whose ERP initiatives are staffed and structured like this are more likely to succeed.

**Figure 6. System Integration and Support Services Included in Project Budgets**

	Overall Rank	Small States	Midsize States	Large States
Design or configuration	1	●	●	◐
Testing	2	●	●	◐
Training	3	●	●	◐
Development	4	●	●	◐
Deployment	5	●	●	◐
Project communications management	6	●	●	◐
Customization	7	●	●	◐
Cutover	8	●	●	◐
Organization change management	9	◐	●	◐
End-user training	10	○	●	◐
Business process re-engineering	11	◐	●	◐
Organization readiness	12	◐	○	◐
Risk assessment	13	◐	●	◐
Third-party oversight/IV&V	14	◐	◐	○
Hosting	15	○	○	○
Other	16	○	○	○

**Percentage of Respondents Who Included the Service:**

- 76% to 100%
- ◐ 50% to 75%
- Less than 50%

**State Size:**

- **Small:** Population less than 5 million
- **Midsize:** Population greater than 5 million, but less than 10 million
- **Large:** Population greater than 10 million

Source: Gartner (October 2009)

From a functionality standpoint, large states overwhelmingly included budget preparation in their implementation efforts. Small and midsize states also selected asset management; midsize states included employee self-service and personnel administration.

It is no surprise that reporting is one of the top five functionalities included in statewide ERP implementations. The focus on outcome-based reporting, performance management, case management and program accountability all have raised the importance of reporting against ERP financial information. We expect this trend to continue, given the increased push for transparency and accountability and reporting metrics for government regulation, such as the American Recovery and Reinvestment Act (ARRA — see "Obama Takes Quick Steps to Ensure Open and Transparent Government").

What is surprising, however, is that the states we categorized as being midsize (with populations of between 5 million and 10 million) tended to select more modules for their enterprise ERP implementation efforts (see Figure 7). Larger states may have more third-party solutions or

entrenched legacy solutions in place to meet agency-specific needs (see Note 3). Smaller states may not have the pressing need for integrated solutions, or they may have already implemented point solutions tailored for smaller organizations.

**Figure 7. Selected ERP Functionality**

	Overall Rank	Small States	Midsize States	Large States
General ledger	1	●	●	●
Accounts payable	2	●	●	●
Accounts receivable and billing	3	●	●	●
Reporting	4	●	●	●
Procurement	5	●	●	◐
Budget control	6	◐	●	●
Asset management	7	◐	●	◐
Payroll	8	◐	●	◐
Budget preparation	9	◐	○	●
Employee self-service	10	◐	●	◐
Grant management	11	◐	◐	○
Time collection	12	◐	◐	◐
Personnel administration	13	○	●	◐
Benefits administration	14	◐	◐	◐
Procurement cards (P-cards)	15	○	○	○
Project systems	16	○	◐	○
Inventory management	17	◐	○	○
Manager self-service	18	○	◐	◐
Recruitment	19	○	○	○

**Percentage of Respondents Who Included the Service:**

- 76% to 100%
- ◐ 50% to 75%
- Less than 50%

Source: Gartner (October 2009)

**State Size:**

- **Small:** Population less than 5 million
- **Midsize:** Population greater than 5 million, but less than 10 million
- **Large:** Population greater than 10 million

Customization was more prevalent in smaller states, with 12 of the small states (71%), and all states planning to spend less than \$30 million, estimating that more than 5% of the total project costs were for customizations. Of the eight states spending more than \$80 million in their ERP initiative, four planned to spend more than 5% of their total costs in customization (see the red boxes in Figure 8). Five of the six large states planned for 5% or less in customization. In contrast, four of the states that planned to spend more than \$120 million in their ERP efforts had

less than 5% of their total costs in customization, and among those, one planned for no customization (see the green boxes in Figure 8).

**Figure 8. Level of Customization**

Percentage Spent on Customization	Size of State			Five-Year Cost of ERP Implementation			
	Small	Midsize	Large	Less Than \$30 Million	\$30 Million to \$80 Million	\$80 Million to \$120 Million	Greater Than \$120 Million
Greater than 10%	4	1	1	3	2	0	1
5% to 10%	8	2	0	4	3	2	1
Less than 5%	3	2	3		4	1	3
None	1	1	2				1

- Combined total customization, higher than 5%
- Combined total customization, lower than 5%

**State Size:**

- **Small:** Population less than 5 million
- **Midsize:** Population greater than 5 million, but less than 10 million
- **Large:** Population greater than 10 million

Source: Gartner (October 2009)

Customization, on its own, may not be a bad thing. Individual agencies do have unique characteristics that drive their practices and processes — these may not be supported in a given solution. Typical reasons for customizations center on integrating third-party solutions, using custom reporting, and accommodating new regulations. An enterprisewide implementation could easily include 10 to 20 individual agencies in the executive branch alone, all of which have previously operated autonomously. Some examples of customization might include:

- Human services may track third-party provider information, and relate it to grants and specific programs.
- Departments of administration may want to link physical security or facility access solutions to information from an HR solution.
- Organizations that charge internally for their services may use an activity-based costing application.
- Custom reporting and performance management/balanced scorecards may want to accommodate the reporting requirements for federal government stimulus funding (such as ARRA).
- Departments of education and public safety may have individuals with multiple roles, multiple pay grades, multiple contracts and work requirements, which should be captured and reflected in payroll transactions.

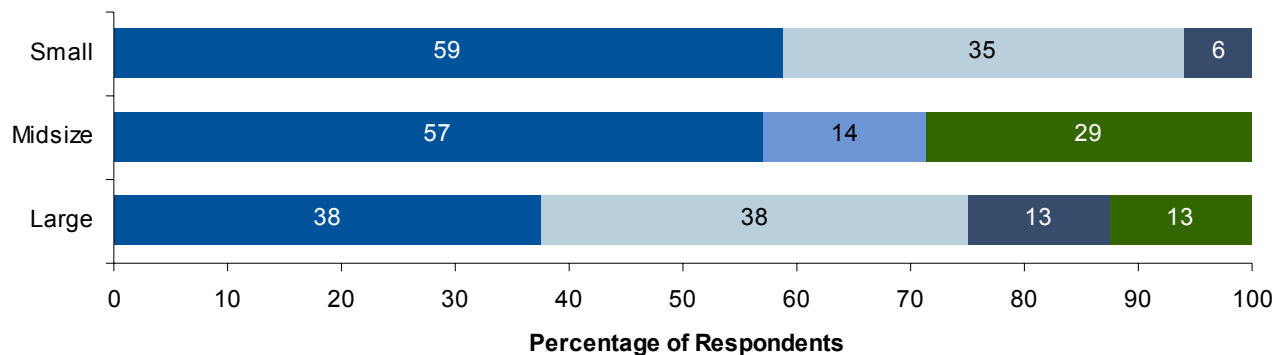
Problems occur, however, when organizations underestimate the cost of maintaining the customizations (yes, they do have life cycles of their own!), or when they do not apply a controlled methodology for delivering quality customizations. Organizations whose project governance processes do not have a structured framework for evaluating the need for customization and

estimating their costs may be challenged in their efforts to minimize customization. States with previous experience in supporting highly customized solutions recognize some of these pitfalls and try to avoid them by establishing a strategy to standardize business processes.

As mentioned previously, these customizations may come back to haunt the IT organization in the form of increased support and upgrade costs. Gartner strongly recommends that enterprises adopt the best practices embedded in their chosen solutions, and that they work with the agencies and large departments to streamline processes so this can be done. Enterprises should also review proposed modifications to determine if they are required by legislation, state or federal regulations, state policies, or agency operating processes in order to prioritize them. By categorizing the potential customizations in this way, enterprises may be able to further question the need for customization.

Overall, 17 respondents (54%) had governance structures that included multiple agencies for prioritized potential changes, with another nine (28%) saying their project governance had limited agency participation (see Figure 9). Large states were just as likely to have a governance structure with limited agency participation as they were to have one with multiagency participation. One midsize state admitted that its governance structure operated differently from how it was described on paper. Midsize and large states were also more prone to have governance structures that did not fit these traditional models.

**Figure 9. ERP Project Governance**



- Our governance structure includes multiagency participation for reviewing and prioritizing potential changes
- Our governance structure includes multiagency participation on paper, but meetings are sporadic or infrequent
- We have a governance structure with limited agency participation
- We don't have a governance structure for this project that includes multiagency participation
- Other

**Source: Gartner (October 2009)**

Establishing a robust governance mechanism is critical to the success of enterprise ERP initiatives. At a minimum, this should include a tiered approach that is reflective of enterprise decision making and approval mechanisms, multiagency participation for holistic decision making, and rapid-response and problem-solving mechanisms (see "Ten Components of Effective ERP Governance").

## 5.0 Lessons Learned — Advice From the Trenches

In conjunction with our survey, we interviewed CIO and other ERP team member representatives from a cross-section of states — balancing size and geography. One key question we asked was about lessons learned: "What advice would you give other states considering a statewide ERP implementation?"

Not surprisingly, their advice covers such issues as change management, governance, multiyear funding streams and skills. Those who have been tested by their statewide ERP implementations advised the following:

- Be prepared for the change that will ripple through the end-user community. This includes the job changes that will occur — in many cases, employees have used the "green screen" solution for all their working lives with the state, and this will be foreign to them. The changes may also affect individual employees — self-service capabilities may alter their paychecks, for example.
- Be sure to have "absolute, unwavering support" from ERP sponsors from the beginning, including during the planning stages. This is important because the old paradigm for IT implementations in which only a one-time investment is needed is gone. Today's ERP implementation efforts may span multiple administrations and surely will require multiyear investments initially and potentially in the future for upgrades.
- Develop a business case that clearly outlines the potential costs and benefits, and that can be explained to all — executive and legislative management, agency executives, employees, retirees, taxpayers, and the general public.
- Don't underestimate the due diligence needed to ensure the ability of the system integration vendor that you select to provide implementation assistance. Pay particular attention to the vendor's skill profile to ensure it has relevant skills in the modules being implemented. Consider not only the skills needed for the implementation, but also the longer-term support and maintenance required. Solid project execution is key and can only be provided with proven project managers for large-scale implementations.

Organizations currently in the midst of an enterprise ERP implementation should review their efforts to see if they have these areas covered effectively. In cases where a gap is identified, project teams and sponsors should address the risks and prepare mitigation strategies. These may impact the project schedule, but they are intended to improve the overall success and sustain the value of this significant investment.

*Additional research contribution and review: David McClure.*

### RECOMMENDED READING

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"Key Issues for Government, 2009"

"ERP Selection Criteria: Looking Beyond Functionality"

"Magic Quadrant for ERP Service Providers, North America"

"Key Issues for ERP, 2009"

"Centralized ERP Lowers Total Cost of Ownership, but Cost Is Only One Consideration for Instance Decisions"

"Best Practices for Transitioning ERP/Business Application Support From 'Build' to 'Run'"

"Address Five Key Factors for Successful ERP Implementations"

"Modernizing ERP: How to Make Users Fall in Love With ERP All Over Again"

"Steady-State ERP Costs for Higher Education"

"Customization: The Cost That Keeps on Costing"

"How to Evaluate Your Vendor's ERP Strategy"

"Additional Tools That Are Needed to Build a World-Class ERP Infrastructure"

"An ERP/Business Application Business Case Tutorial"

## **Note 1**

### **Survey Respondent Profile**

A total of 37 states responded to the survey. Surveys were sent to CIOs, with a request that they forward the survey to the individual who is most knowledgeable about the state's ERP initiative and who can respond to the questions. We describe survey respondents below.

#### **Role of the responder:**

- I am the state CIO or state CTO — 59%
- I am the state's ERP-designated project manager — 33%
- I am the state's ERP-designated project sponsor — 3%

#### **Responder's time in current role:**

- Less than 12 months — 7 (19%)
- Twelve to 35 months — 16 (43%)
- Thirty-six to 59 months — 9 (24%)
- Sixty months or more — 5 (15%)

#### **Size of states responding:**

- Less than 5 million people — 20 (54%)
- More than 5 million, but less than 10 million people — 9 (24%)
- More than 10 million people — 8 (21%)

## **Note 2**

### **Respondents' Products and Vendors**

#### **Product selected:**

- PeopleSoft — 11 (42%)
- SAP — 6 (23%)
- CGI-AMS — 3 (12%)
- Lawson — 2 (8%)

- Oracle E-Business Suite — 2 (8%)
- JD Edwards — 1 (4%)
- Other — 4 (15%)

**Vendor selected:**

- IBM — 3 (14%)
- Accenture — 2 (9%)
- BearingPoint — 2 (9%)
- CGI-AMS — 1 (5%)
- Ciber — 1 (5%)
- Other — 13 (59%)

The high percentage of respondents selecting "other" suggests that a number of statewide ERP implementation efforts were awarded to multiple vendors. Given the value and complexity of the procurements, Gartner would expect a team of vendors to provide the integration services.

**Note 3**  
**Role of Third-Party Solutions in Enterprise ERP**

ERP suites have traditionally focused on support for broad, horizontal processes, such as "hire to retire" end-to-end processes supporting human capital management and "procure to pay" processes. State enterprisewide ERP implementations typically identify several processes that may be specific to the agency or public sector, which may not be reflected in these broad processes. Gartner believes enterprises will never be able to source all their business functionality from any single vendor. So, despite increasing functionality in ERP solutions, there will continue to be a need for third-party solutions. Areas typically seen include:

- Time and labor — This area is one root cause of many implementation problems if data validation is not forced at the point of entry. This causes downstream issues with payroll. Separate solutions that enable input-data validation are frequently implemented ahead of an ERP implementation.
- Asset management — The "find to fix" processes are needed for effective management of state assets, such as roads, bridges, highways, vehicles, specialty equipment and buildings.
- Budget preparation — Budgeting and forecasting applications must support processes such as budget preparation and approval, budget revision, rolling forecasts, and more. In the public sector, capital planning and budgeting needs, as well as operational budget needs, are being addressed.
- Project management — This is large-scale project management, such as those undertaken by departments of transportation, which share financial, labor-related and procurement information with enterprise financials.
- Business intelligence — The information management and reporting needs of the enterprise are frequently addressed by implementing separate business intelligence solutions to address agency-specific reporting needs. Gartner considers information



users as one of the critical user groups whose needs should be addressed in developing the ERP strategy.

- Infrastructure management — Larger ERP implementations (those involving more than 100 concurrent users) may require additional tools to create an integrated view of the complete ERP solution, including the ERP applications, hardware platforms, operating systems, databases and network components.

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