

## How are digital trends reshaping government financial organizations?

### Findings from Deloitte NASACT 2015 Digital Government Transformation Survey







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# Introduction

The emergence of digital technologies, from cloud computing to mobile to analytics, is fundamentally transforming the way organizations, both public and private sector, operate. Financial management, including auditing and accounting, cash management, treasury, and banking, is in the middle of a digital transformation.

Accounting and auditing have evolved from the days of manual journal entries to real-time detection of high-risk transactions, making them continuous rather than periodic processes. Investment management decisions are increasingly based on complex algorithms by deploying big data and predictive analytics. Cloud-based treasury management solutions (TMS) are transforming corporate financial operations, enabling companies to control highly complicated logistics — moving money in and out of various geographies, supporting cash management, and forecasting needs across the globe.<sup>1</sup>

Financial organizations are employing digital solutions to automate processes, cut costs, reduce fraud, and improve customer service. Such solutions include automated fraud detection systems that use machine learning to identify behavior patterns and indicate potentially fraudulent payment activity.<sup>2</sup> Additionally, big data and predictive analytics have started transforming business models and operating processes. Many banks offer forecasting solutions that deploy big data and predictive analytics to forecast cash-flow needs, perform scenario analysis, and compare planned and actual variance.

Clearly, the digital revolution is transforming banking, finance, and audit in the private sector. What about government? How significant is the impact of digital technologies on government finance, accounting, auditing, and investment management organizations? Are we seeing the same degree of digital transformation among financial functions in government as is occurring in the private sector? To answer these questions, we surveyed members of the National Association of State Auditors, Comptrollers, and Treasurers (NASACT) in states across America. The survey explores how digital transformation is reshaping state financial management organizations.

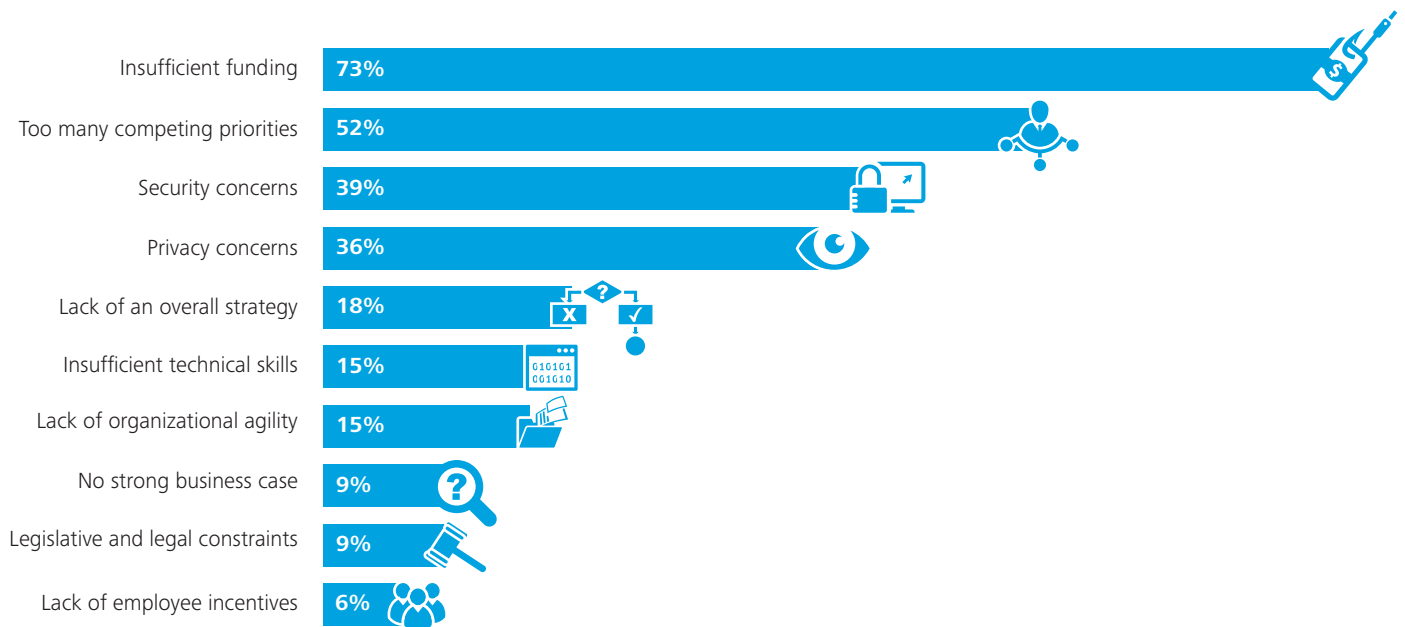
## Acknowledgments

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Nearly all NASACT respondents acknowledge that digital technologies offer an opportunity to transform government. They say that investing in digital technologies would enable them to work better with various internal and external stakeholders such as government agencies (90 percent of respondents), customers (87 percent), employees (84 percent), and business partners (63 percent). However, digital transformation is not without significant challenges. NASACT members identified *insufficient funding*, *competing priorities*, *security* and *privacy concerns* as the top barriers preventing organizations from taking advantage of digital trends (see figure 1).

In an environment where competing priorities continually raise demands on finite resources, the absence of a digital strategy or a workforce with the right skills compounds the challenges that organizations face on the path to digital transformation. Our research suggests that at least two-thirds of state financial management agencies find it challenging to manage digital transformation in the key areas of culture, leadership, workforce, and procurement. We explore each area more closely in the following pages.

**Figure 1. Top barriers to digital transformation.**





# About the Survey Methodology and Scope

## Digital defined

In our study, digital technologies refer to the combination of five modern technology components that are coalescing to change the way we work, shop, communicate, and get around.

- **Social** — Allowing people to communicate electronically on social platforms in real time.
- **Mobility** — Connecting with people wherever they are.
- **Analytics** — Using data to do sophisticated analysis across program and policy areas.
- **Cloud** — Changing how people leverage technology and how they pay for it.
- **Cyber security** — Providing for secure communication and data storage.

In the digital era, tech-savvy organizations no longer view these five components as discrete solutions that address specific needs. Rather, they harness their combined power to target and build intimacy with customers and citizens, manage the workforce, reduce cost, and automate processes.

## Digital maturity

Digital maturity refers to the extent to which digital technologies have transformed processes, talent engagement, and business models in an organization. The level of maturity was estimated based on responses to survey questions that can be grouped into three broad categories—People, Processes, and Preparedness—areas we identified as important determinants of an organization's digital maturity. Based on the digital maturity estimation framework (which is described in more detail in the appendix), the respondent organizations are categorized into three categories: early, developing, and maturing.

## Respondent profile

Findings from the Deloitte NASACT 2015 Digital Government Transformation Survey\* of state and local financial government executives help shed light on the state of digital transformation for finance in state government. A total of 33 NASACT members, with diverse functional and organizational backgrounds, participated in the survey designed for NASACT members.

## Summary of NASACT data

Function	% of respondents N=33
Audit	37%
Comptroller	33%
Financial management	12%
Information technology	6%
Treasury	6%
Administration and operations	3%
Others	3%
<b>Total NASACT respondents</b>	<b>33</b>

Digital maturity level	% of respondents N=33
Early	9%
Developing	61%
Maturing	30%
<b>Total NASACT respondents</b>	<b>33</b>

Organization type	% of respondents N=33
Government to Citizen	6%
Government to Business	6%
Government to Government	39%
Government to Employee	3%
All of the above	46%
<b>Total NASACT respondents</b>	<b>33</b>

The study also compares responses from NASACT members against relevant responses public sector financial management agencies outside the United States (92 in number). These comparisons provide additional context for evaluating the state of digital transformation in NASACT agencies.

Function	% of respondents
Financial management	88%
Audit	7%
Risk management	5%
<b>Total outside US financial management responses</b>	<b>92</b>

\*Half of the survey questions were sourced from the 2015 MIT Sloan Management Review and Deloitte digital business study. For more details please refer the appendix.





# Key findings

The following themes emerged from our analysis:

- **Digital strategy drives digital maturity.** Only 30 percent of respondents from agencies at the “early” and “developing” stages of digital maturity — the extent to which technologies have transformed processes, talent engagement, and business models — say their organization has a clear and coherent digital strategy. Among the digitally maturing, more than 90 percent do. Our analysis also indicates that agencies with a clear digital strategy are better equipped to respond to threats and opportunities, and have better nurtured a culture of innovation and collaboration.
- **Agencies lack key elements of a “digital mindset.”** State financial management agencies lack key elements of a digital mindset: customer focus, open functionality, and agile development. Although digitally maturing agencies fare better than the early- and developing-stage agencies, most agencies have yet to embrace certain basic tenets of digital operating.
- **Digital technologies are having the greatest impact on revenue collection, auditing, and cost management.** Process automation and analytics are identified by NASACT agencies as the primary enablers to achieving their top priorities: improving cost efficiencies and automating operational processes. Currently, agencies do not view cloud technology and social media as major enablers, most likely due to associated security concerns.
- **Innovation, collaboration, and transparency are the cultural norm in more mature organizations.** Digital technologies help build an innovation and collaboration culture within NASACT agencies, and the digitally maturing cohort seems to understand how to use digital technologies to build an innovative workplace. The transition to digital also helps financial management agencies increase transparency and share data with the public.
- **The lack of digital workforce skills represents a major obstacle.** Skills for a digital-age workforce go beyond just technical skills. They also include an understanding of the business applications of digital trends, a willingness to work collaboratively to build solutions, and an ability and willingness to take risks and work iteratively. More than half of the financial management agencies surveyed cite workforce skills as the most challenging part of the digital transition. Most of these agencies report not having adequate organizational support to build those skills.
- **Digital transformation requires changes in procurement processes.** Agencies identified rules and regulations and a lack of flexibility as the key barriers to improving procurement processes. Satisfaction with technology vendors is fairly low. Agile development, less restrictive terms and conditions, and modular development are the biggest changes desired by NASACT agencies in overhauling digital procurement.

In the text that follows, we elaborate on each of these themes. The results correspond to the 33 NASACT member respondents, and, wherever applicable, parallels and comparatives are drawn with public financial management agencies/organizations outside of the United States.

# I. Digital strategy drives digital maturity

When the UK government launched its “digital-by-default” framework and committed fully to digitally transforming government from the ground up, the first thing it did was to develop a roadmap titled “Government digital strategy.” Similarly, in the US, the White House issued a directive titled “Building a 21st century digital government” that laid out a comprehensive digital government strategy (DGS) with a year-long roadmap.<sup>3</sup>

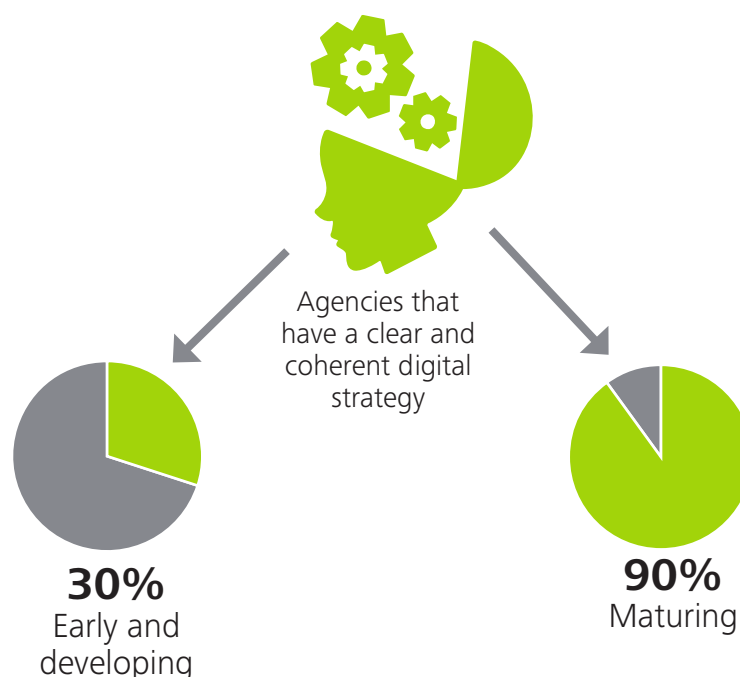
A clear digital strategy is a prerequisite to any digital transformation journey. In fact, our survey results point to an interesting link between an organization’s digital maturity and the presence of a clear digital strategy. The survey shows that the NASACT member organizations with a clear and coherent digital strategy are more digitally mature, better equipped to respond to opportunities and threats, and have a culture that fosters innovation and collaboration.

## Digital maturity is strongly linked with strategy

Digitally “maturing” organizations are nearly three times more likely to have a clear and coherent digital strategy than organizations in the “early” and “developing” stages of digital transformation (see figure 2). While strategy forms the bedrock of the transformation process, organizations may not realize its significance or importance. More than half of the NASACT organizations surveyed say they do not have a clear digital strategy.

Moreover, only a quarter of “early” and “developing” NASACT organizations consider the lack of strategy a significant barrier to digital transformation. This is in stark contrast to their global counterparts, who cite “lack of a strategy” as one of the top barriers to digital transformation.

**Figure 2. Strategy and digital maturity (percentage responding positively).**





### Leadership and a digital strategy are closely linked

One critical difference between financial management organizations with a clear digital strategy and those without one is the presence of a leader charged with driving the digital agenda. More than 60 percent of organizations that report a clear and coherent digital strategy have a leader or group in charge of managing the organization's digital strategy. Moreover, in three-fourths of these organizations, digital initiatives are implemented top down by senior leadership. In contrast, less than half of the organizations without a digital strategy report having a leader that drives their digital agenda or leads the implementation of digital initiatives. Additionally, 82 percent of organizations without a clear digital strategy consider leadership a challenging aspect of digital transformation (see figure 3).

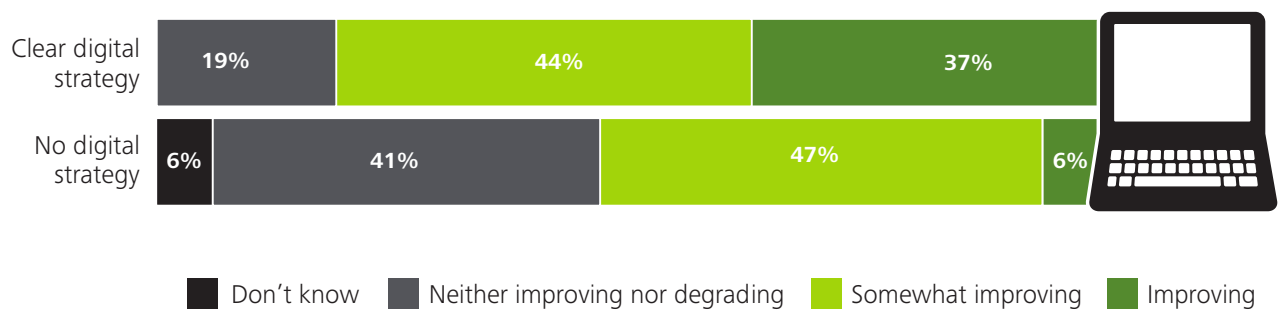
**Figure 3. Strategy and the digital transition**



### Strategy enhances the ability to respond to threats and opportunities

A clear and coherent digital strategy can help an organization optimize both its use of existing resources as well as its ability to respond to external forces. Among NASACT respondents with a clear digital strategy, 81 percent say that digital trends are improving their ability to respond to threats or opportunities; this holds true for only half the respondents without a strategy (see figure 4).

**Figure 4. Are digital trends changing your organization's ability to respond to threats and opportunities?**



Having a clear digital strategy can also instill a sense of confidence within the ranks. Respondents are twice as likely to report being satisfied with their organization's response to digital trends when their organization has a clear and coherent digital strategy. The same holds true for an organization's readiness to respond to digital trends. Respondents in organizations with a clear digital strategy are more confident (56 percent) in their agency's readiness to respond than those without a clear digital strategy (35 percent).

## The US Department of the Treasury's digital strategy

The US Department of Treasury's digital strategy aims to transform the Department's operations and services. The Department has a detailed plan of action for each milestone mentioned in the White House's DGS as well as a process to monitor and track progress.<sup>4</sup>

The strategy articulates some of the basic tenets of digital transformation: openness by default, consumer feedback, citizen engagement, and a governance structure designed to develop and deliver digital services to citizens. The strategy also emphasizes the need to upgrade and adopt new technologies and instill transparency, both within and outside the Department.

Importantly, the Department has placed the citizen at the heart of its digital strategy. Apart from formalizing feedback processes through online satisfaction surveys, the Treasury Department regularly publicizes its implementation milestones and open data initiatives through social media. Citizen engagement is further enhanced through regular focus groups and competitions such as MyMoneyAppUp, a challenge for citizens to develop next-generation mobile apps that could help Americans shape their financial future.

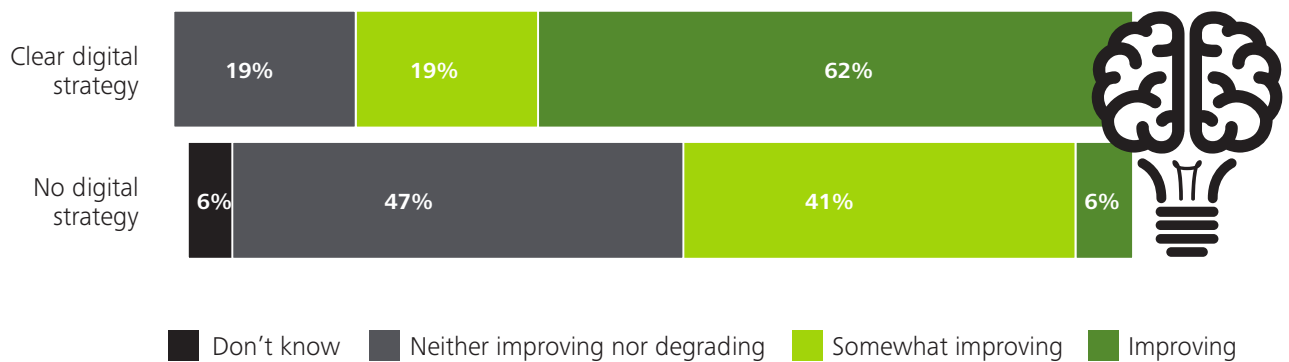
The Department has also built a governance structure to monitor the progress of digital initiatives through the formation of the Digital Government and Innovation at Treasury working group. A treasury-wide technology review board was formed to ensure that investments in technology are rationalized throughout the Department. The Department has implemented tools to collect and analyze website metrics and use data more effectively, along with tracking its own progress on the digital transformation roadmap.

### Strategy helps foster a culture of innovation and collaboration

Without a culture conducive to digital transformation, organizations may not be able to realize the potential benefits that it can offer. Echoing that sentiment, an overwhelming majority (88 percent) of NASACT respondents cite culture as a significant challenge to digital transformation.

Agencies with a clear digital strategy also show a marked advantage when it comes to implementing digital technologies to foster innovation and encourage a more collaborative culture (see figures 5 and 6).

**Figure 5. Are digital trends changing your organization's innovative culture?**



**Figure 6. Are digital trends changing your organization's collaborative culture?**





## Recommendations

**Offer a vision for the future.** Devising a clear and coherent digital strategy is the first step toward successful digital transformation. Articulate the attributes of a digital-age financial management organization — agency-wide governance focused on the customer, processes that tap into the potential of data, and a passionate and aspirational workforce — and clearly communicate that vision to the workforce.

**Provide a detailed plan for addressing the key elements of digital transformation.** Build a roadmap for digital transformation that covers elements such as culture, leadership, workforce, and procurement. For instance, detail how to engage stakeholders and secure their backing to implement the digital strategy or describe how procurement processes could be reformed for the digital delivery of services.

**Build organizational capabilities.** Prepare for digital transformation by addressing the gaps in digital skills and investing in resources and technologies that help build a culture and capabilities that support the digital transition.

**Attack barriers.** Identify the processes, legislations, and cultural elements that could hinder digital transformation and devise strategies to move past each of these barriers.

## II. Agencies lack key elements of a “digital mindset” — customer focus, open functionality, and agile development

Digital transformation is about more than technology implementation. It requires seeing old problems and old processes through new eyes. A digital mindset is different from how most organizations — especially in the public sector — approach the world. It’s a different way of thinking about stakeholders; a different way of launching products and services; and a different way of working.

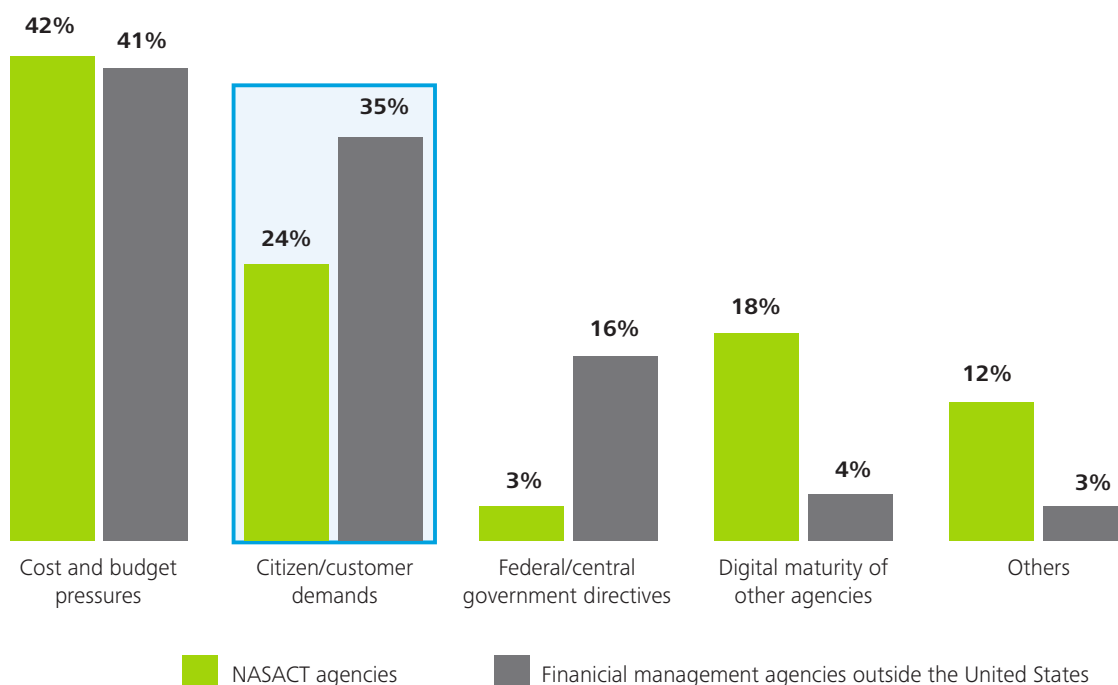
There is no agreed-upon definition of what constitutes a digital mindset — much of it is in the eye of the beholder—but several characteristics tend to be common to the organizations that “get” digital. These include open functionality, co-creation, a laser-like focus on users and customers, and an agile way of working.

Our findings suggest that these characteristics have yet to become ingrained in most NASACT member agencies that responded.

### Customers are front of mind for NASACT leaders, but they are rarely at the heart of service design

Less than a quarter of the NASACT respondents say that citizen demand is one of the primary drivers of digital transformation. For financial management agencies outside the United States, the number is higher, with 35 percent citing citizen demands as a major driver of digital transformation (see figure 7).

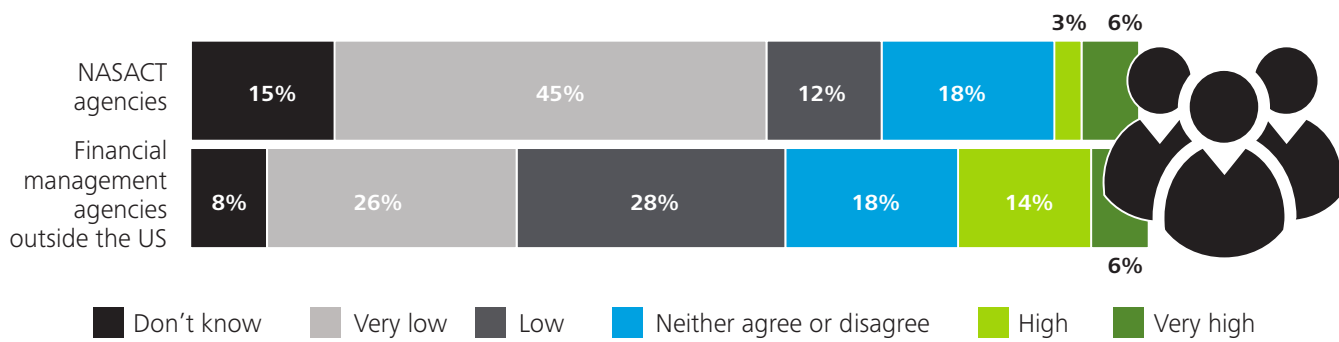
**Figure 7. Primary drivers of digital transformation.**





The level of involvement of citizens in co-creating digital services is also quite low among financial management agencies. Less than 10 percent of agencies report high citizen involvement in the co-creation of digital services. Their global counterparts are twice as likely to engage citizens in the process of co-creation (see figure 8).

**Figure 8. Involvement of citizens in co-creation of digital services.**

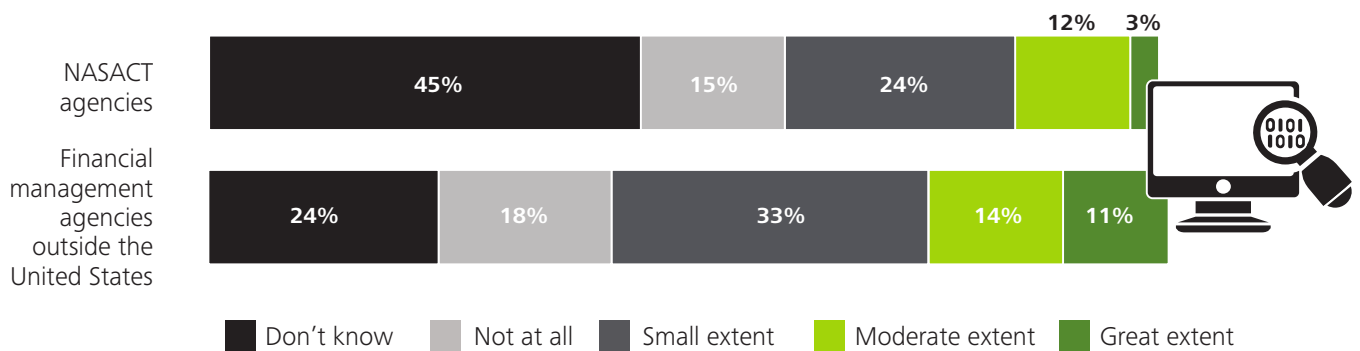


Even for agencies that say citizen demand is the primary driver of digital transformation, the share of responding organizations significantly engaging with customers and users to co-create digital services remains low (12.5 percent).

### The use of open source tools is still limited

US financial management agencies use open source technology sparingly to deliver digital services. Only 15 percent of US agencies report using open source technology to a moderate or great extent. This is lower than financial management organizations outside the United States (25 percent; see figure 9).

**Figure 9. To what extent does your organization use open source technology to deliver digitally transformed services?**



## Texas online procurement system puts users at the heart of service design

The Texas Comptroller's Office runs the state's online purchasing system. It is used by state and local agencies to buy almost anything from office supplies to automobiles. The use of pre-existing contracts has been an efficient mode of procurement as well as savings for the state. But the system had some problems — poor search functionality, high administrative overhead, and a maintenance cost of \$11.5 million annually. As such many agencies avoided using it.<sup>5</sup>

Vijay George, the Comptroller's former chief technology officer, wanted to provide a system that could mirror the consumer online shopping experience. "We had the idea of trying to create an Amazon-like experience for our customers. So the procurement agents, when they go to the Texas marketplace, TxSmartBuy, they can pick products they need, put them into a shopping cart, and order it. That was the idea," says George. It was a simple mindset change: to focus on users and work primarily to meet their needs.<sup>6</sup>

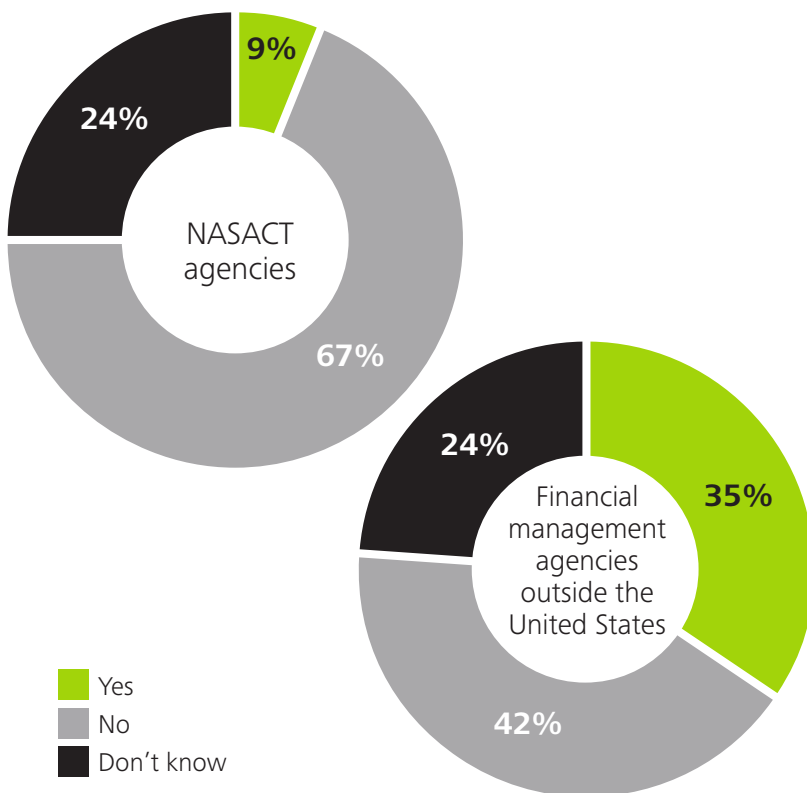
The Comptroller's office moved the system to a cloud-based solution to provide user-friendly search and order management functions similar to retail industry best practices. The portal's performance in terms of user experience and security increased significantly. Features such as search filters and product comparison made the site more intuitive and helped purchasers quickly find and purchase the items they needed. Additionally, the total maintenance cost for TxSmartBuy 2.0 declined by 72 percent.<sup>7</sup>

### Agile thinking is still in its infancy

Only 9 percent of NASACT respondents report that digital technologies are altering their attitude toward risk, making them more willing to experiment with agile, iterative approaches (see figure 10). However, financial management agencies outside the United States are four times more likely to experiment with agile development.

The digital maturity of these organizations plays a key role in determining their attitude toward risk. Survey data show that a digitally maturing agency is twice as likely to experiment with agile and iterative development processes as the early- and developing-stage agencies.

**Figure 10. Is the transition to digital altering the organization's attitude toward risk?**



*Note: Yes means "willing to experiment more with agile, fail-fast, fail-quickly approaches."*

### Checkbook NYC: Open sourcing the financial transparency portal

In 2013, the City of New York launched Checkbook NYC, the financial transparency portal developed by the Office of the Comptroller. Along with the portal, the open source code used to develop it was also released. It generated considerable interest due to the way it was developed.

The intent of the portal was to truly promote openness and financial sustainability. The idea was to ensure adaptability by other city governments and offer ways to monetize the development process for the vendor community. It moved beyond simply putting the code online for others to use. Instead, the comptroller's office convinced private financial management system (FMS) vendors to develop exporters to connect with Checkbook NYC in return for their support in maintenance and development. It simultaneously engaged in a dialogue with other city governments that might be interested in deploying a similar checkbook. These other governments were potential clients for a lot of these FMS vendors — a sufficient incentive to generate commercial interest. The approach shows the benefits open source has to offer.<sup>8</sup>



## Recommendations

**Make the customer the focal point.** NASACT agencies need to be user-focused to drive their digital transformation agenda effectively. Crowdsourcing ideas through competitions, hackathons, user-centered design, and co-creation are some ways to engage users and develop user-centric digital services.

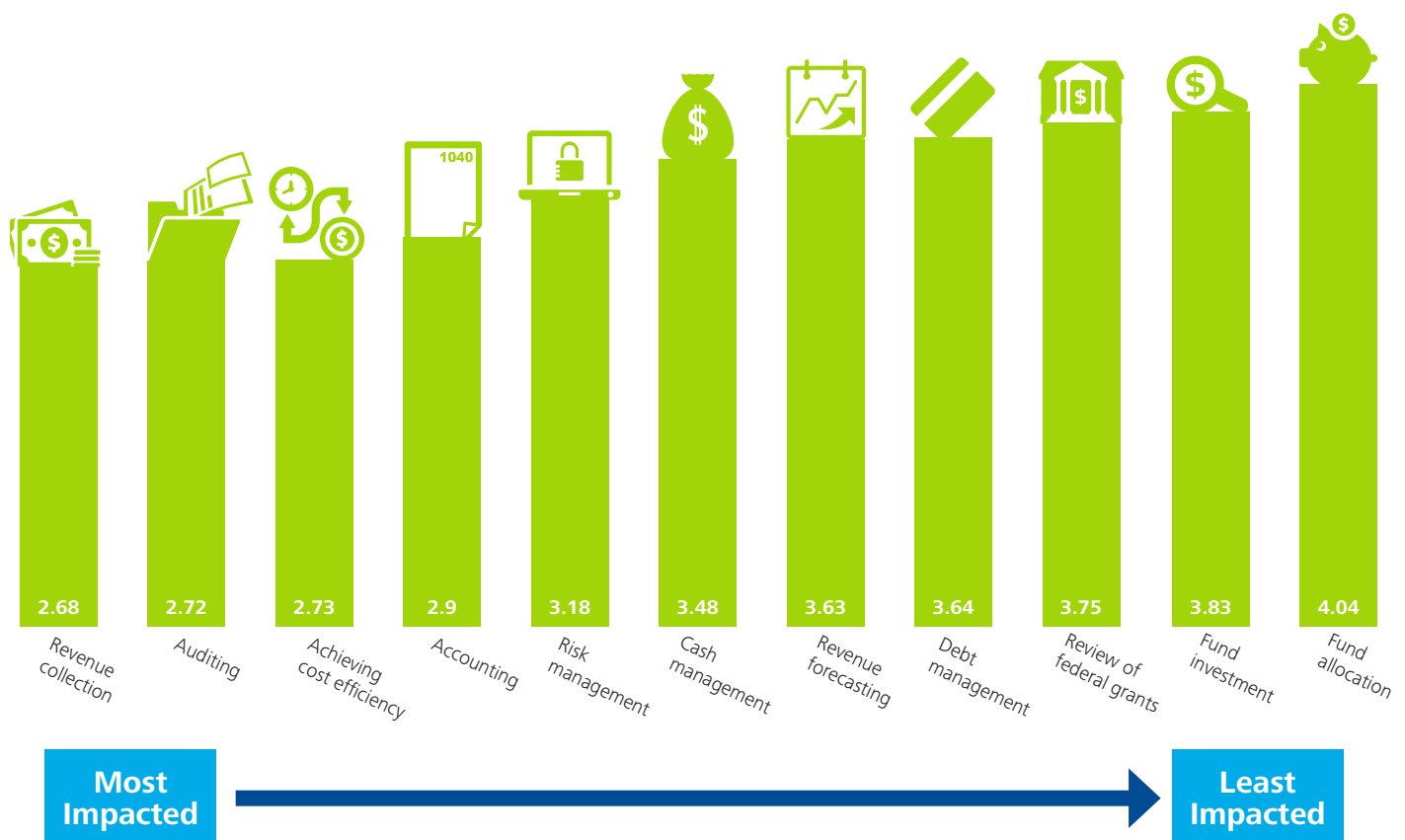
**Get started with agile development.** NASACT agencies can start by first familiarizing themselves with the concept of agile through workshops and trainings, then look for opportunities to use it on smaller projects, and scale accordingly.

**Explore opportunities for open source.** The use of open source software is an opportunity for agencies to reap not only financial benefits such as lower costs, but also potential benefits such as quality and stability. As a first step, agencies can take a cue from the New York City Comptroller's office and start sharing code with other agencies that could repurpose it. They could then proceed to open up their code more broadly and explore open source software options to use in the organization.

### III. Revenue collection, auditing, and cost management are the financial activities most impacted by digital transformation

Digital technologies are enabling improvements in a number of financial services, including revenue collection, audit, cash management, fund investment, and even claims management, according to participating NASACT agencies. Respondents cited revenue collection as the top activity impacted by digital technologies (see figure 11). Technologies such as analytics are being used to improve revenue collection by reducing fraudulent returns and identifying tax evaders.

**Figure 11. On a scale from 1 to 5, how have the following activities in your organization been impacted by digital technologies (1 indicates most impacted, and 5 indicates least impacted)?**

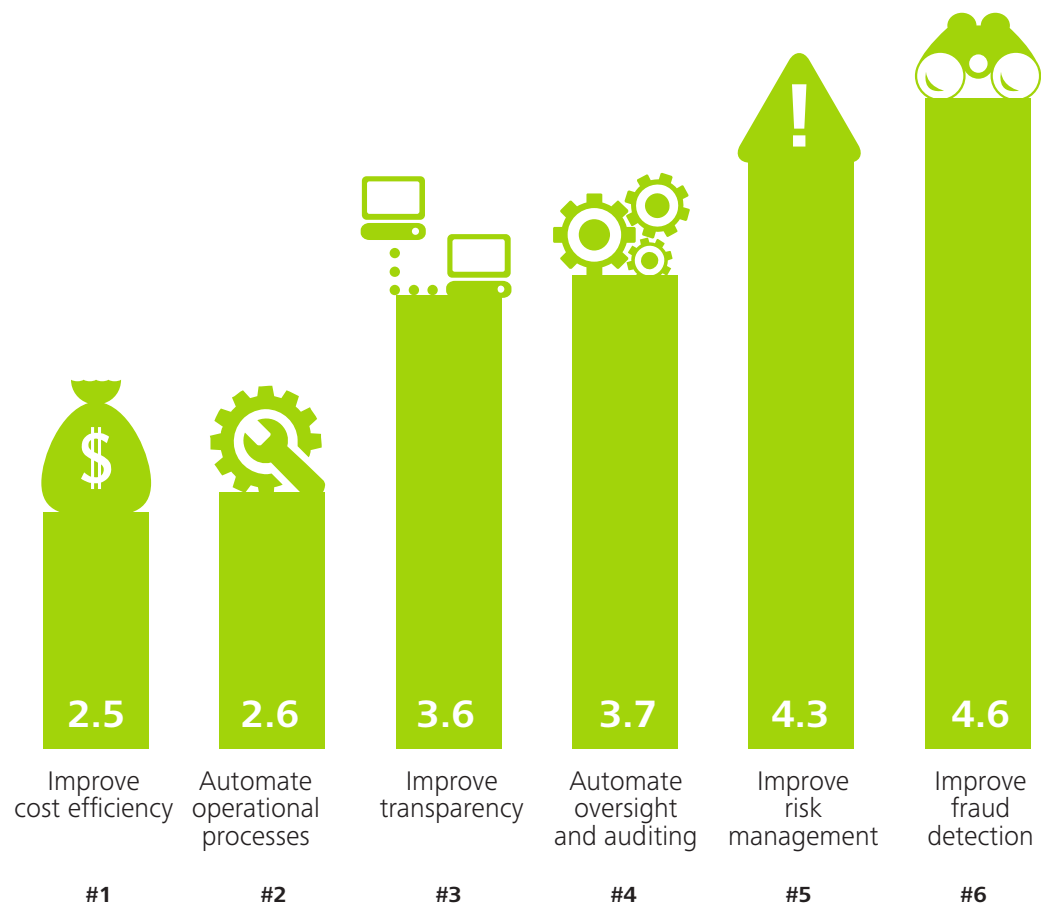


## Improving cost efficiency and automation are the primary objectives of digital transformation

Finance agencies' digital strategies are primarily aimed at improving cost efficiencies by automating key operational processes. Digital technologies have most significantly helped organizations attain this objective in more transaction-focused activities such as revenue collection, auditing, payments, and cost management. Automating the process of regulatory oversight and audit trails while fulfilling the commitment to enhance transparency has been a priority for state auditors, comptrollers, and treasurers (see figure 12).

The vast majority (nearly 88 percent) of respondents say their digital strategy is directed at increasing *efficiency*, and *creating or accessing valuable information or insight to improve decision making*. This is in line with the global trend in government finance management and regulatory agencies, which are increasingly looking for ways to transform their data into knowledge.

**Figure 12. Average rank of the primary objective of digital strategy (a lower rank corresponds to a higher priority).**





## Predictive analytics helps New York State fight fraudsters

Fraud is on the rise. According to the US Department of the Treasury, fraudulent federal returns increased by more than \$4 billion from 2011 to 2012 — a whopping 40 percent rise. The State of New York has also seen a surge in cases of fraudulent tax returns, which, according to Nonie Manion, executive deputy commissioner for the state's Department of Taxation and Finance, have grown fivefold in the last 10 years.

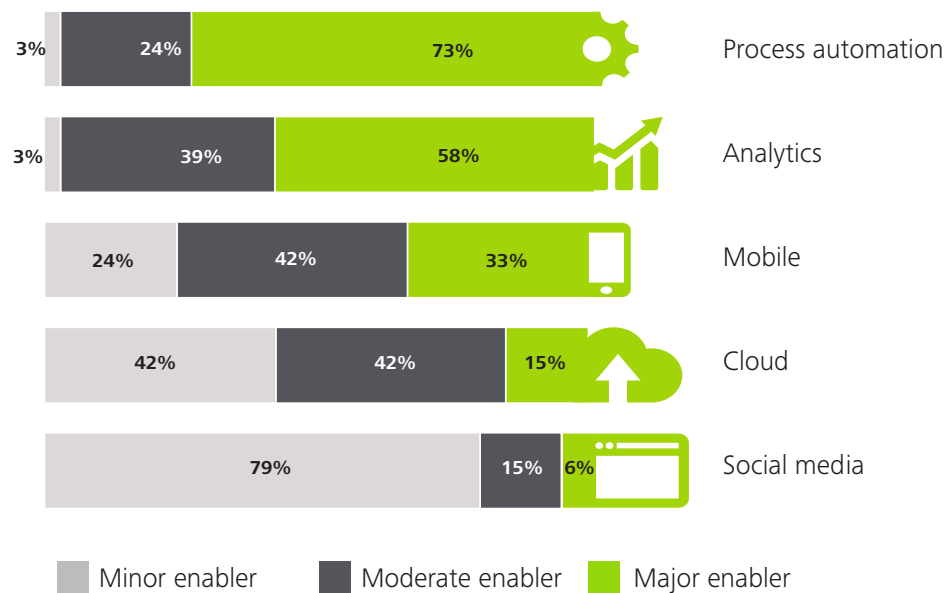
Manion, who comes from an IT background and has previously created apps for audit, encouraged the use of predictive analytics in the department to detect suspicious tax returns. New York's revenue and tax agencies use analytics software to detect invalid returns by parsing vast amounts of data. The software looks for anomalies such as incorrect mailing addresses, stolen identities, and suspicious Internet Protocol (IP) addresses, which could be indicators of fraudulent activity. For example, tax auditors in New York discovered similar IP addresses in Florida submitting a series of returns — which after investigation of employer data were found to be fraudulent.

"I would like to say that we are at least in step with the fraudsters, if not ahead of them," says Manion. "But we have to keep investing in technology in order to be both fast and accurate."<sup>9</sup>

### Automation and analytics are the primary enablers of agency priorities

NASACT members cite automation and analytics as the most important digital enablers to achieving their key priorities (see figure 13).

**Figure 13. To what extent do you perceive the following digital technologies as an enabler for the finance function to achieve your key priorities?**



The choice of technology enablers differs based on the nature of work performed by the agency. While cost management and accounting functions stand to gain the most from process automation technologies, the auditing, debt management, revenue forecasting, and risk management functions consider analytics their most critical digital enabler.

For example, in 2011, the North Carolina Department of State Treasurer used data analytics to manage the state's pension risk. The department used analytics software equipped with risk and performance measurement models for fixed income equity, private markets, and hedge funds. This enabled the state to effectively manage a \$73 billion portfolio by evaluating and reducing investment risk.<sup>10</sup>

Another technology that takes automation to the next level and could benefit auditors specifically is cognitive technologies (also known as artificial intelligence, or AI). The technologies help to automate and speed up the contract review process, while AI-enabled workflow automation can streamline the confirmation process through a single digital interface. Cognitive technologies can also help auditors to more quickly uncover risks hiding within financial statements.<sup>11</sup>

## Security issues restrict cloud and social media adoption

Social media and cloud technologies have yet to gain traction as technology enablers of transformation. This may be due, in part, to security concerns, which are among the top three barriers preventing organizations from taking advantage of digital trends.

Only 15 percent of respondents consider cloud technologies a major enabler for their priorities. In fact, in a previous study conducted by NASACT, state financial management agencies cited *implementation cost and security risks* as impediments to moving financial systems to cloud-based technologies.<sup>12</sup>

In the recent past, however, financial management agencies have deployed cloud technologies not only to reduce cost but also to improve security. For example, the Office of Comptroller of the Currency (OCC), a part of the US Department of the Treasury, migrated to a cloud-based vulnerability assessment system. As a result, the OCC's cost per scan fell significantly, and the detection of vulnerabilities went up by 12 percent, improving overall security.<sup>13</sup>

Like cloud, social media is not seen as a significant enabler — nearly 80 percent of financial management agencies consider it only a minor enabler to achieving their priorities. However, there are some bright spots, with some agencies using social media to better serve citizens. For example, the Texas Comptroller's Unclaimed Property Division was recognized for its successful social media campaign, which generated unclaimed property claims since 2013 amounting to over \$5 million. "This is a great example of how government can use technology and social media to better serve taxpayers," said Texas Comptroller Glenn Hegar.<sup>14</sup>

## Audit of the future

"Audit of the Future," a recent Deloitte survey, showed that an overwhelming majority of respondents wanted auditors to use advanced technologies more extensively.<sup>15</sup> The confluence of emerging technologies such as digital technologies, big data, and AI has the potential to disrupt auditing in a number of ways. For instance auditors won't have to manually collect and check the data since the majority of labor-intensive activities can be automated. Increasingly, auditors will play the role of an advisor, using their deeper understanding of the business to exercise judgement and provide greater insights. Other likely changes include:

- **Analytics in auditing:** The combination of big data and machine learning can detect risks that a human eye could easily miss. For instance, patterns and connections that might never have been discovered in the past can be identified, analyzed, and visualized. Network analysis, used to analyze connections between individuals or entities, can help to identify entities engaged in fraudulent activities.<sup>16</sup>
- **Machine learning in auditing:** Machine learning can scan, verify, and confirm transactions without any human intervention, leaving auditors free to perform more vital tasks such as fraud detection and risk assurance.<sup>17</sup>
- **Cognitive intelligence:** Cognitive technologies could advance to a point where it would be possible for software to provide opinions to auditors.<sup>18</sup>



## Recommendations

**Seek diversity in digital technologies.** Digital technologies represent an opportunity for financial management agencies to achieve their missions and serve citizens better. Agencies could benefit by diversifying their adoption of technologies to target different parts of their mission, for instance, using analytics to help combat fraud and manage risk while adopting mobile and social media technologies to boost citizen engagement.

**Explore cognitive technologies to boost efficiency.** As automation and AI reduce the need for manual data collection and other labor-intensive tasks, auditors can focus their energy on delivering more strategic insights. Although these technologies are still in the early stages of adoption, investing in them can help financial management agencies work smarter and stay ahead of the curve.

**Start small, but start somewhere.** While adopting digital technologies can have a big impact on an organization, it also entails a significant change in the way work is done. Agencies may be apprehensive about implementing certain technologies due to associated issues such as security, change management, or workforce training. One way to mitigate that is to test new technologies with select teams through small pilots and then roll them out to the wider organization in phases.

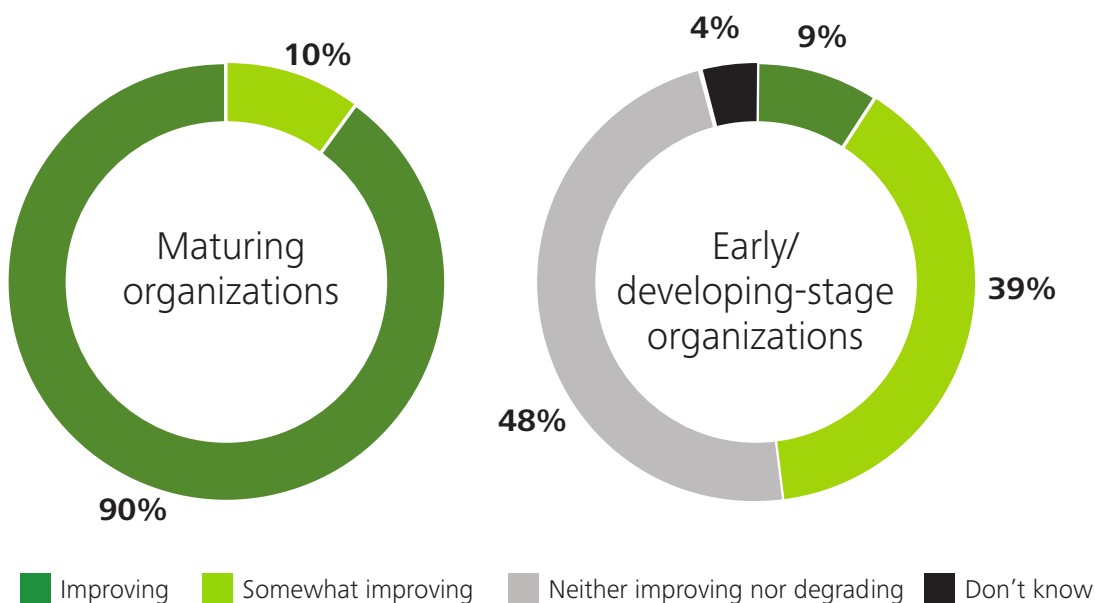
## IV. Innovation, collaboration, and transparency are the cultural norms for the more mature organizations

Digital transformation is as much about cultural change as technological change. An organization with a clear digital strategy and with all the necessary resources could still be missing a critical element to achieving digital transformation: a culture conducive to innovation and collaboration.

### Digital technologies boost innovation and collaboration in maturing organizations

NASACT respondents say that digital trends have a positive impact on innovation and collaboration in their organization. More than two-thirds of respondents believe trends and technologies are improving their organization's innovative and collaborative culture. While 100 percent of respondents from digitally maturing organizations agreed that digital trends and technologies have improved innovation and collaboration to some degree, only 48 percent of the respondents from early- and developing-stage organizations reported similar improvement (see figure 14).

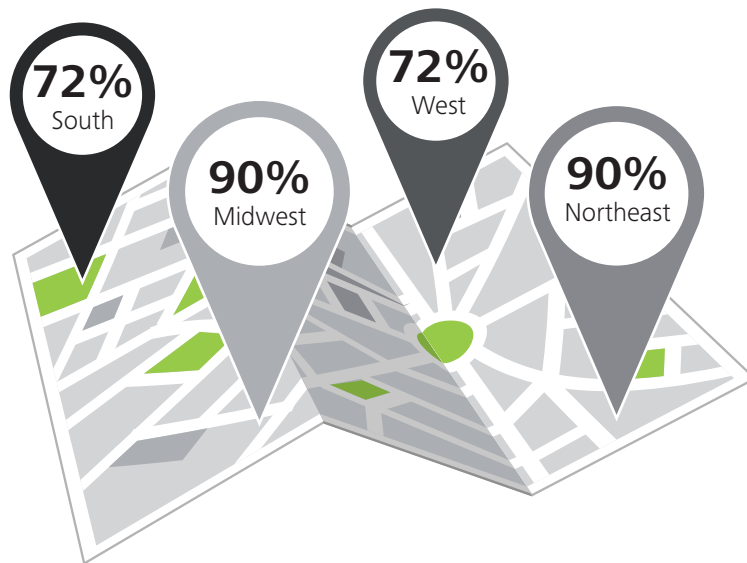
**Figure 14. Impact of digital trends on an organization's innovative culture**



### Improved transparency and data sharing with the public

Most organizations are striving to increase transparency with citizens and engage them to achieve superior service levels. Seventy-eight percent of respondents say they are moving toward greater transparency and sharing more data with the public. While nearly 90 percent of respondents in the Midwest and Northeast report opening up access to financial data, the figure is lower in both the South and West regions (72 percent) (see figure 15).

**Figure 15. Organizations that have opened access to financial data to the public.**



The survey results reflect the growing push for states to increase transparency. Recent legislations such as the Digital Accountability and Transparency Act (DATA), which mandates that agencies divulge information on expenditures, have also encouraged governments to share more information with citizens. State governments have also been opening up their data — 24 states now have dedicated open data portals, while 39 states provide their data to Data.gov.<sup>19</sup>

According to the US Public Research Interest Group's report "Following the money," which measures transparency in each state, all 50 states operated websites to make information accessible to the public in 2015. In fact, all but two states let users search their online checkbook by agency, keyword, or vendor.

The State of Ohio was the only state to receive an A+ grade in the 2015 report with a perfect transparency score of 100. Ohio scored just 51 points the previous year, making it one of the lowest-ranked states in 2014. So what did Ohio do to climb up the ranks? It launched a website, OhioCheckbook.org, to increase transparency and let Ohio residents see where the state is spending their tax money (see inset box).



## The State of Ohio increases transparency through OhioCheckbook.org

In the fall of 2014, the Ohio Office of the State Treasurer unveiled a new website, OhioCheckbook.org. The site lets citizens see all expenses incurred by every state agency, down to the last penny. Eventually, the state hopes to provide data on every city, town, school district, and other local governing entity in the state — all 3,962 of them. The categories of data available on the site include top-earning government contractors, highest-paid officials, and revenue consumption by departments. True to its name, the site also lets citizens search by check number or voucher ID.

The site has been designed to be user-friendly, with features such as advanced search and filter options and a familiar context search functionality that suggests search terms based on past search queries. Every expense item can be filtered by a number of parameters including date, expense type, name of the vendor, program name, type of fund, and name of the agency. Citizens can also compare expenses incurred by multiple agencies over a period of time and share their findings on major social media platforms to further promote transparency.<sup>20</sup>

The state expects to recover its investment through reduced spending as a result of citizen monitoring and detailed accounting of expenses. “We believe it will pay for itself very quickly by virtue of forcing politicians and bureaucrats to think twice before they waste taxpayer money,” says Josh Mandel, Ohio’s state treasurer. “It makes public officials think twice before they go to a conference in Hawaii — when they could have gone to a conference in Cincinnati — and it makes them think twice before they stay at a five star hotel on the taxpayer’s dime.”<sup>21</sup>



## Recommendations

**Appoint leaders that can act as catalysts of change.** Many public agencies have appointed change agents, or “chief digital officers,” to drive cultural change in their organizations. These leaders can spread the culture of innovation and facilitate working collaboratively to develop digital services.

**Allocate time and space for innovation.** Allocate time and space to employees to brainstorm ideas, problems, and solutions. Even changing the layout of offices, such as moving to an open office setup or seating disparate teams together, can foster collaborative working and innovative thinking.

**Make data open and easily accessible.** Build comprehensive websites and portals where citizens can access and review detailed information on state expenditures. This can help build organizational transparency, engage citizens, and increase public trust.

**Use digital technologies to work collaboratively.** Use digital technologies to disrupt organizational culture by embracing mobility tools, internal collaboration software, and internal social media options. Improved communication made possible by digital technologies can go a long way in creating a work environment conducive to sharing and collaboration.

## V. The lack of digital workforce skills represents a major obstacle to transformation

In 2014, the Alliance to Transform State Government Operations (Alliance) engaged a broad-cross section of government and private organizations (including NASACT) to identify pathways to transform state government.<sup>22</sup> A report from the Alliance highlights the central role of technology in transforming government and its implications on building the government workforce of the future.

The report argued that to attract the Millennial generation, state government needs to rethink the way it hires, manages careers, and offers flexibility to its employees. State governments also need to re-evaluate how they operate in the digital age and close the skills gap that state workforces face in competing for top technology talent. Our survey results reinforce these points and the scale of the challenge.

### Digital-age workforce and skills

A “tech-savvy” workforce is an integral component of an organization’s digital transformation strategy. This isn’t limited to just technical skills but also includes skills such as business acumen, willingness to work collaboratively, and an entrepreneurial streak in employees (see figure 16). NASACT respondents identified entrepreneurial spirit, agility, and user experience design as the three most lacking skills in relation to digital transformation.

**Figure 16. Skills necessary for digital transformation**



### Greater focus is needed on recruiting digital talent and up-skilling employees

It is critical for NASACT agencies to address the skills gap in their workforces by hiring, training, and retaining the best talent with the right mix of skills. This requires being proactive in identifying which skills they need and how to secure them. Our survey reveals that auditors find it difficult to find people who have strong skills in customer experience, whereas comptrollers specifically think that their workforce is missing the essence of an agile way of operating.

More than half the survey respondents report that obtaining the right workforce skills is challenging. But even among those who find it challenging, only about 47 percent report that their organization provides resources or opportunities to obtain the skills needed to take advantage of digital trends. Herein lies a point of action for NASACT agencies: identify the right skills, and find ways to quickly build those within the workforce.

## An innovative approach to talent management

The Consumer Financial Protection Bureau (CFPB) was formed to empower citizens to make informed financial decisions. The agency's primary function is to educate citizens about regulations and rights governing financial markets, products, and services as well as to supervise financial service providers for regulatory compliance. When it was formed in 2011, the agency needed to quickly ramp up its workforce skills, especially digital skills — software developers, graphic and user experience designers, data specialists, and cyber security professionals. One way they tackled these issues was to create a two-year fellowship program that sought the best web designers, developers, and civic innovators, and gave them an opportunity to design and improve the CFPB's existing products for citizens.<sup>23</sup>

In addition to the academy, the CFPB also worked on a three-pronged recruitment strategy. It reworked the language in its job descriptions to appeal to the target cohort it wanted to hire; it highlighted the opportunities to do challenging work; and it illustrated the actual projects that candidates would work on and their impact on society. This recruitment strategy was backed by an attractive compensation and benefits package along with the flexibility to work remotely after the first few weeks. The idea was to bring in the best talent in the market and engage them on projects for those two years.

The fellowship program attracted more than 600 applicants for its first cohort of 30 fellows.

## Leaders who understand digital trends and technologies invest in workforce development

While it is not necessary for today's government leaders to come from a technology background, they should at least understand what digital trends and technologies mean, and their implications for the organization. NASACT members exhibit a high level of confidence in their leadership's ability to understand digital trends and lead the organization's digital strategy. Seventy-three percent reported being confident about their understanding of digital trends and technologies.

Despite this belief, respondents were not as confident about their organization's overall readiness for digital transformation. Only 45 percent of the respondents expressed confidence in their organization's readiness to respond to digital trends. This low level of confidence could be attributed to the workforce lacking the skills needed to execute a digital strategy. Only 55 percent of the respondents say their employees have sufficient skills to execute that strategy.

It is important to note, however, that organizations with leaders who understand digital trends and technologies are almost two times more likely to provide organizational support to their workforce to help them build digital skills, compared with those without such leaders (see figure 17).

**Figure 17. Investing in workforce's digital skills**





## Recommendations

Hiring the right talent may require looking at new sources of recruitment. Attracting talent from the private sector requires offering something beyond compensation and benefits, and creating a workplace that helps this workforce thrive.

**Explore unconventional ways to bridge skill gaps.** Agencies can attract top talent for niche skill sets through recruitment tactics such as creating internship and fellowship programs, experimenting with competitions, crowdsourcing, and hiring for short-term assignment-based teams.

**Invest in up-skilling.** One of the first steps to getting the workforce digital ready is to identify skill gaps and invest in up-skilling staff. Whether up-skilling is done through in-house training centers or external workshops, it's important to develop a feedback mechanism and iterate on training requirements, curricula, and delivery methods to find the ones that work. Agencies can also look for opportunities to partner with the private sector and create peer-to-peer learning communities for employees.

**Create a value proposition for the next generation of talent.** Millennials and younger employees value opportunities to make a positive impact through their work. One way to attract younger talent is to design a workforce strategy that specifically highlights and communicates the impact that the work of the agency staff has on the lives of citizens. Offering employees the flexibility to work creatively can go a long way in building your talent pool.



## VI. Digital transformation requires new procurement approaches

IT procurement in government today is a heavily documented and policy-driven process. An agency's requirement specifications typically consist of scores of documents: policy requirements, design requirements, and regulations, among others. These get converted into a contract statement, a request-for-proposal process follows, vendors bid, and a winner is chosen who then must deliver the system in a specified time period.<sup>24</sup> This process has significant challenges in an era of exponential technology change. The Standish Group, a consultancy that studies software projects, found that of all government and commercial IT projects in excess of \$10 million, 52 percent were challenged, and 38 percent failed. Only 10 percent of large-scale projects succeeded, according to their findings.<sup>25</sup> To be sure, the high failure rates can only partially be attributed to a rigid, slow-moving procurement process, but it's an important factor.

Today's procurement practices have evolved for a reason, primarily to minimize risk, ensure a level playing field, and to make sure that government delivers on its legal and policy needs. But for the promise of digital transformation to be realized, these goals must be met in a smarter, faster, and cheaper way. NASACT agencies responding to the survey say that significant changes are needed in the procurement process and consider "agile development" a critical ingredient to delivering digital services.

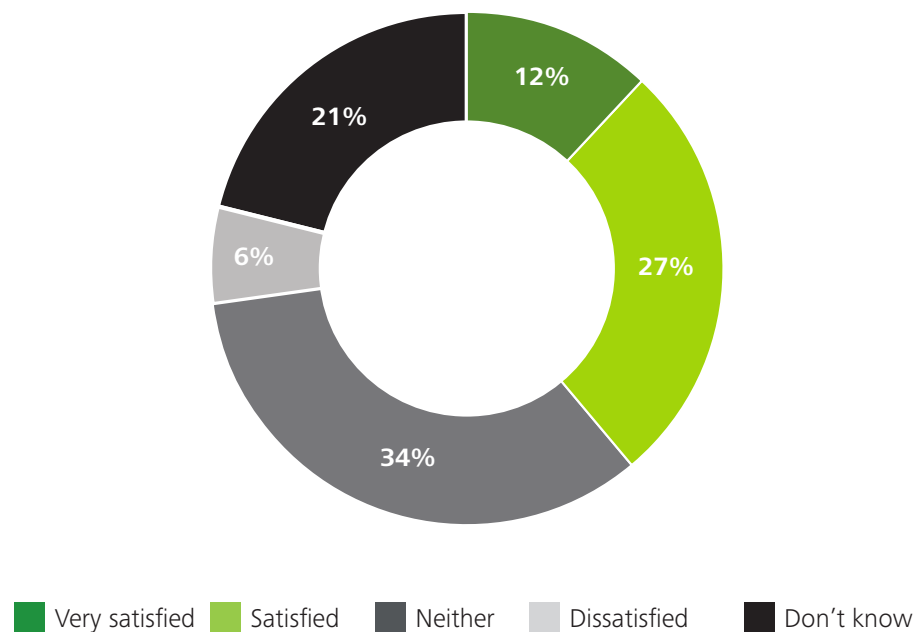
### Procurement processes are muzzled by regulations and lack of flexibility

NASACT respondents cite "rules/regulations" and "lack of flexibility" as the top two barriers to a better procurement process. "Onerous terms and conditions" and "procurement skill sets" follow these as significant barriers. "A lack of procurement skills" and "stringent rules and regulations" also contribute to project failures, according to survey respondents.

### Satisfaction with technology vendors is low

Although NASACT executives report a relatively higher level of satisfaction (39 percent) with technology vendors than finance organizations at the global level (26 percent), their overall satisfaction with the technology vendor community is not great (see figure 18). The data indicate large differences in vendor satisfaction within functions and regions. About half of the comptrollers (45 percent) report being satisfied with their suppliers, but for auditors, vendor satisfaction is quite low (17 percent).

**Figure 18. Satisfaction with technology vendors.**



## Washington State procurement changes encourage agile IT

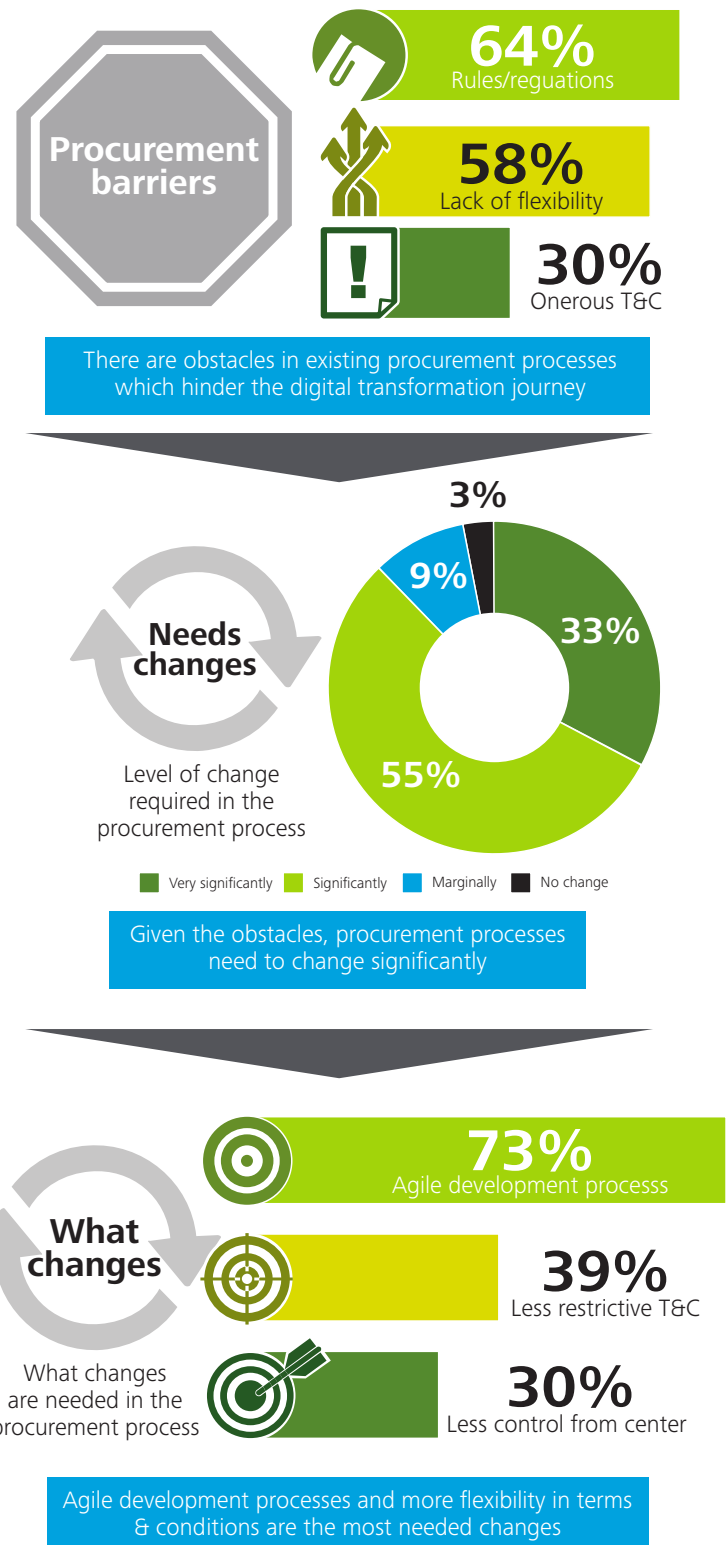
As a part of his IT reform initiative, Jay Inslee, the governor of the State of Washington, wants the state to embrace a lean management philosophy. The governor has pushed agencies to use proven private sector methods to procure technology systems with a firm focus on customer satisfaction. In line with the governor's mandate, the Office of the Chief Information Officer (OCIO) used this opportunity to push an agile development agenda within the state.

At the urging of the OCIO, the Washington State legislature created an innovation exemption allowing the OCIO to approve any procurement activities less than \$100,000 that were innovative in nature. This enabled state agencies to procure and adopt new technologies more quickly. The procurement policy encouraged experimentation and expanded the pool of vendors to include less established companies with a track record of agile development.<sup>26</sup>

## Agencies need a less restrictive procurement process that supports agile

Nearly half of the NASACT respondents view managing the procurement process as a significant challenge. The most important change according to survey respondents would be for procurement rules to accommodate an agile development process, followed by less restrictive terms and conditions and a more decentralized process. Here, too, auditors and comptrollers differ in their views on how procurement should change. Auditors say the most important change to procurement is adopting an agile development process, while comptrollers say making procurement less restrictive is the most critical.

**Figure 19. Procurement barriers and changes required in existing procurement process**





## Recommendations

**Simplify the procurement process.** Make procurement processes simpler to attract vendors with the right solutions, not just those who know what will help them qualify for a bid. Employ strategies to reduce vendor selection time, and allow for shorter contract periods.

**Use a modular approach.** Rather than trying to find ways to make mega digital transformation projects run faster, procurement innovators focus on small batches of requirements. Target smaller problems aimed at reducing cycle times at each step through software development in small modules.

**Retain flexibility and agility.** The digital age makes flexibility and agility a priority. Try using a “bake-off” style approach that involves short-term sprints and teams from multiple contractors. By keeping deliverables smaller can help agencies can keep their options open and change priorities on the fly.

**Promote collaboration.** Allow room for collaboration among vendors. Open up the procurement interfaces and APIs for the government’s procurement platforms so vendors can integrate their services easily.

**Develop procurement talent.** Create processes and frameworks that help procurement officers procure agile-based contracts. Invest in building a group with the right mix of skills that specializes in vendor selection and procurement life cycle management.



# Six key questions for NASACT agency leaders to consider

The lessons drawn from our research suggest that NASACT leaders should consider six questions to help accelerate their digital transformation. This is not exhaustive, but certainly a starting point for NASACT leaders to start (or continue) their digital transformation journey.

## 1. Do we have a clear and coherent digital strategy that addresses the key elements of digital transformation?

The importance of having a clear and coherent digital strategy is apparent. NASACT agencies can benefit from having a roadmap that addresses the key elements of digital transformation: culture, leadership, workforce, and procurement. But the strategy needs to be accompanied by a mechanism to track and measure progress against the digital goals.

## 2. How are citizens and service users going to be part of our digital transformation?

A key tenet of digital delivery is to start with the user. Yet our survey suggests that many NASACT agencies are not engaging citizens in service design and lack user-centered design skills in their workforces. Exploring inherently user-centric agile development methodologies could be helpful.

## 3. Are we maximizing the potential of all available digital technologies to achieve our agency's mission?

Our survey found agencies rely heavily on select digital technologies such as analytics to achieve their priorities. Agencies can gain from diversifying their technology portfolio to target different mission goals.

## 4. What have we done to strengthen the innovative and collaborative culture of our organization?

Our research suggests that as organizations mature digitally, they learn to increasingly employ digital technologies to reinforce a culture of innovation and collaboration. Even designating space and time for groups to collaboratively work on solutions, ideas, and challenges could go a long way in building a culture of innovation.

## 5. Have we looked at our talent pool and planned where our skills are coming from?

Our survey tells us that currently many NASACT agencies do not have the right skills to take advantage of digital transformation. Digital strategists need to develop a plan that pinpoints what workforce capabilities they need and how they are going to secure them.

## 6. Are the existing procurement processes in our organization suitable to procure digital solutions?

Our survey shows the big changes NASACT agencies want in the procurement process — agile development, less restrictive terms and conditions, and a more decentralized procurement model. Any procurement reform that NASACT agency leaders undertake should consider these issues.

# Appendix

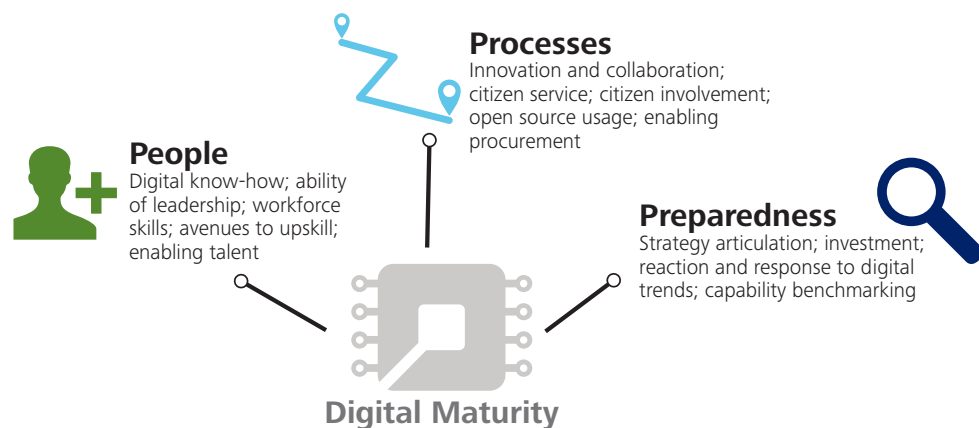
## Digital Maturity Estimation Framework

We adopted a holistic approach to estimate an organization's digital maturity based on 20 questions from our survey. These questions were grouped into three broad categories—People, Processes, and Preparedness—areas we identified as important determinants of an organization's digital maturity.

Each question was mapped to a Likert scale of 1–5—where 1 reflects the least and 5 the highest score on the maturity scale. The digital maturity of each respondent was calculated as the average score of all questions. The maturity level cut-off scores used in the analysis were: Early (0–3), developing (3.01–4), maturing (4.01–5).

This framework was constructed using data from more than 1,200 public sector organizations globally (including the 33 NASACT members). However, since there were only three organizations among NASACT members that fell under the early-stage category based on these criteria, we have combined early- and developing-stage agencies into a single group while comparing with maturing organizations. This is done to maintain a significant and comparable group size.

**Figure 20. Digital Maturity Estimation Framework.**



## About survey questions and data

- Fifty percent of the survey questions were sourced from the 2015 MIT Sloan Management Review and Deloitte digital business study. The remaining questions were framed and added to the survey to assess specific NASACT areas such as financial management, procurement, co-creation, and use of open source technology.
- A total of 33 responses were received from the NASACT members. The survey was deployed between January and March 2015. The NASACT responses were compared with responses from financial management organizations outside the United States. Of the 92 global responses, 20 were sourced from the 2015 MIT Sloan Management Review and Deloitte digital business study.
- To know more about the 2015 MIT Sloan Management Review and Deloitte digital business study, please refer to the report, "[Strategy, not technology, drives digital transformation.](#)"



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## About NASACT

The National Association of State Auditors, Comptrollers and Treasurers is an organization for state officials tasked with the financial management of state government. NASACT's membership is comprised of officials who have been elected or appointed to the offices of state auditor, state comptroller or state treasurer in the 50 states, the District of Columbia, and the U.S. territories. NASACT has a headquarters office in Lexington, Kentucky, and a second office in Washington, D.C. The Association:

- Plans and manages training and technical assistance programs and handles numerous requests for information each year from state auditors, comptrollers, treasurers, and other government officials, as well as the private sector.
- Monitors and responds to federal legislation and agency developments that have an impact on state government and acts as a liaison to federal regulatory bodies and Congressional committees on issues of interest to members.
- Uses its expertise to respond to technical standards-setting bodies, helping to ensure the highest levels of government transparency, accountability and integrity.

For more information visit: **[www.nasact.org](http://www.nasact.org)**.



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