Are Intelligent Automation & Blockchain Poised to Disrupt HHS?
Imagine when case workers in government health and human services (HHS) departments can spend more time engaging with citizens because sophisticated software applications, known as bots, busily work in the background to gather eligibility information and perform other routine tasks. Bots are part of a continuum of innovative technologies known as intelligent automation, and they aren’t the only changes on the horizon. Another emerging technology — blockchain — provides a decentralized way for parties to transact, and it may facilitate secure data sharing and improve financial controls throughout the HHS enterprise.

For now, these examples are more aspirational than real, at least in the realm of state HHS. Intelligent automation and blockchain are still maturing and many government HHS officials are deciding how, or even if, they may fit into their digital modernization plans. But for HHS agencies coping with growing demands and shrinking budgets, both may be tools for tackling bigger workloads and improving services without adding staff.

“It’s too early to say how we may implement either of these technologies, but I do see a need to disrupt current data management processes,” says Daniel Hallenbeck, director of the New York State Medicaid Data Warehouse. “Some of the use cases may be highly disruptive, but they may also provide significant benefits. We’ll need to perform a cost/benefit analysis to determine if the benefits would outweigh the cost of change.”

Audit, tax and advisory firm KPMG LLP partnered with the Governing Institute to profile the current state of intelligent automation and blockchain within HHS agencies and outline next steps governments can take to explore these options further. KPMG and other industry leaders are investing in these technologies and creating centers of excellence to assist government agencies with potential adoption.

Data for this report comes from a national survey conducted by the Governing Institute and KPMG of 189 government executives, including 67 senior HHS officials. In addition, discussion sessions were held with HHS officials in three states — Georgia, Ohio and Tennessee — to assess their familiarity with intelligent automation and blockchain, and uncover practical applications for these technologies. The Governing Institute also conducted telephone interviews for further details.

The result is a snapshot of where HHS departments stand in their exploration of these technologies, the potential use cases within HHS programs, and possible benefits and barriers governments may encounter as they move forward with pilots and early implementations.

Overall, the survey results reflect growing interest in intelligent automation and emerging awareness of blockchain. Nearly a quarter (23 percent) of HHS leaders described their interest in intelligent automation as high. Interest in blockchain, a much less mature technology, wasn’t nearly as high across HHS departments, but 18 percent said they were familiar with the category, and one HHS respondent’s department had already implemented blockchain.

Whether they’re actively investigating intelligent automation and blockchain or just holding early, informal discussions with peers, HHS executives are looking at potential benefits like improved data quality and accuracy, better citizen services and enhanced efficiencies. They’re also familiarizing themselves with possible hurdles, including new costs and security challenges.
INSIDE INTELLIGENT AUTOMATION

Intelligent automation is the continuum of technologies driving exponential transformation through automation of business processes and operations. It includes everything from automating the transactional parts of a business process to applying sophisticated technologies involving “cognitive machine processing” and elements of artificial intelligence. By using sophisticated algorithms engineered to learn and adapt processes over time, intelligent automation can improve efficiencies, enhance service delivery and strengthen customer service.

Some HHS departments have already started down the intelligent automation path, with about a quarter of the respondents in the Governing Institute/KPMG survey saying they have or are planning to implement intelligent automation technology or processes. Experts see intelligent automation adoption as part of larger IT modernization strategies. “Digital transformation is the ultimate goal, and intelligent automation is an essential component in that effort,” says Michael Caporusso, intelligent automation director at KPMG.

As discussions with HHS and technology leaders in three states showed, officials are at various stages of familiarizing themselves with intelligent automation and its potential. Some participants, such as Hugh Hale, CIO of the Division of TennCare, Tennessee’s Medicaid program, know the technology well and are engaging in ongoing conversations with their peers around its potential. Hale says officials in Tennessee are open to adopting new technology like intelligent automation and believes funding will be available if a strong business case can be developed. But others aren’t as far along. Some say they’re not discussing intelligent automation with peers or are having only informal talks.

Interest in intelligent automation likely will grow among HHS leaders in the months ahead as potential use cases and possible benefits become more clear. HHS executives involved in the Governing Institute/KPMG research were keenly interested in using intelligent automation to improve the quality and accuracy of their operations, as well as to achieve process improvements. Here are several common suggestions:

- **Automating time-consuming manual processes**
  Discussions and interviews revealed that governments may look to intelligent automation to make eligibility decisions faster and more accurate. Instead of requiring trained staff members to spend hours collecting, aggregating and validating eligibility data from various sources, automated systems may perform those duties behind the scenes at a quicker rate, with fewer errors and with a complete audit trail. Eligibility professionals then review the information and use their expertise and judgement to decide on the right course of action.

  The benefit comes from having intelligent automation target bottlenecks associated with determining benefits eligibility, screening providers and completing enrollment forms. Potentially, this shortens enrollment times for citizens from months to weeks, improving public health through better health outcomes. In addition, input errors and other quality issues likely will decline as automation replaces manual data entry. That also reduces the need to track down and correct input errors.

- **Augmenting contact center capacity**
  As intelligent automation matures, departments that move to more advanced stages of automation may use natural language processing to
WHAT ARE THE BENEFITS OF INTELLIGENT AUTOMATION WITHIN THE PUBLIC SECTOR?

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<tr>
<th>Benefit</th>
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quickly direct callers with eligibility questions to the appropriate experts, reducing phone time for citizens and staff members alike. To a growing degree, the underlying technology in these systems may even sense the anger or frustration levels of callers and escalate them to a manager when appropriate.

- **Recommending appropriate actions**
  Intelligent automation, for instance, may help HHS departments become more proactive by sending prompts to staff members with information about eligible but underserved populations entitled to Medicaid and other social services resources.

- **Automating IT support functions**
  Intelligent automation’s potential extends beyond human services to the IT systems that underlie those operations. Representatives from HHS IT departments are evaluating how intelligent automation can take over routine, time-consuming duties like resetting passwords, updating access permissions, validating network and systems upgrades, and automatically fixing common hardware and software problems based on pre-programmed solutions.

**Lingering Questions**

While the potential of intelligent automation is significant, government officials also see implementation hurdles. Forty-two percent of the HHS respondents in the Governing Institute/KPMG survey listed funding as a top barrier to implementing intelligent automation. Lack of knowledge and expertise came in as a close second.

The discussion sessions yielded more insights about funding, showing that intelligent automation will have to compete against a host of other IT and mission priorities. For example, Tennessee participants said implementing intelligent automation currently takes a backseat to the state’s Medicaid eligibility system, which is projected to pilot in late 2018 and go live in early 2019.

Notably, intelligent automation isn’t merely a technology project that replaces legacy systems with newer and more efficient digital resources. It represents fundamental change, such as how HHS organizations deploy full-time staff. “These technologies and the automation they enable are redefining what work actually is,” says Caporusso. “Instead of being responsible for often mundane, routinized types of work, people must develop or enhance skills for the non-routine elements of their jobs, such as being more customer focused.”

Digital assistants and other types of intelligent automation technology may spark fears of job loss among government workforces, but discussion group participants downplayed that possibility. Several viewed the technologies as tools to augment overloaded staff or provide more meaningful work to employees by relieving them of repetitive tasks, such as manually gathering data from a variety of sources to spot patterns that may indicate fraud. It will take early and ongoing communications to explain opportunities like these and alleviate employee apprehension.

Risk management is another important concern voiced by government officials. The same bots that may make workflow processes more efficient potentially create data-management risks without adequate internal controls that limit what information each bot is authorized to access and distribute.

Citing news reports about bots that began interacting in unexpected ways on a social media platform, Gregory Jackson, CIO at the Ohio Department of Job and Family Services, says he’ll need assurances that similar apps would be tightly governed before letting them interact with citizens. “There’s the potential that a bot would go down a path that we didn’t anticipate and publish information that a human representative wouldn’t consider appropriate,” he says.

To avoid such scenarios, triggers or exceptions must be in place to alert a human who can quickly intervene. To ensure these controls are in place “bots should be treated as virtual employees, with their own employee IDs and credentials for accessing systems,” Caporusso says.

HHS officials also are sensitive to how citizens in need of social services may react to being served by an automated system. “When
people need help, they don’t want to feel like they’re getting the runaround by a government agency,” Jackson says. “If they do begin to feel that way, the next call some will make will be to the local TV station or newspaper to complain about their experience.”

For intelligent automation to work, HHS officials say business staff and IT teams must cultivate closer ties to ensure the new technology meets mission goals. In the on-site meetings, one official put this succinctly: “We need the business to tell us what they are trying to achieve, and then we’ll help them get there.”

During that process there is a place where IT needs to take a stand — ensuring that modernizations are designed from the start to conform with security and data governance rules. Security is a concern with any large-scale technology initiative, and HHS officials are trying to fully understand the broad security implications of intelligent automation, including the need for better authentication processes, which will be necessary before intelligent automation is embraced more fully.

Formal meetings and steering committees can promote necessary conversation and help IT develop a deeper understanding of HHS requirements to determine the most effective use cases for intelligent automation.

**Next Steps**

As government officials decide how or whether to increase intelligent automation commitments, leaders should evaluate intelligent automation not as a discrete technology but how it fits into the larger modernization roadmap. Once initial research, internal discussions and meetings with third-party consultants are complete, pilot projects can help validate use case benefits and determine where intelligent automation can provide value.

**BLOCKCHAIN GAINS MOMENTUM**

Blockchain technology is designed to create permanent and unalterable records of transactions within a network by distributing so-called digital ledgers among network participants. When network members conduct a transaction, it is recorded in sequence in the digital ledger and the individual transaction “blocks” are linked together into a chain. Since the system relies on references to other blocks that are cryptographically secure within the ledger, proponents contend that it is almost impossible to manipulate the information.

Because blockchains establish a single version of the “truth” that is shared in near real time with network participants, the technology potentially creates the conditions to enable faster, more accurate and efficient processes. Although blockchain is perhaps best known as the distributed ledger technology supporting bitcoin, it is not itself a cryptocurrency. Blockchains may be public — such as the platform behind bitcoin — or private, which are only open to individuals or entities that are invited to join the network. There also are hybrids that combine public and private blockchain networks.

The idea is intriguing to government officials. Tennessee’s Hale indicated familiarity, and several CIOs said they had begun investigating and researching the technology. However, while there are signs of early interest, our in-depth discussions found that most participants are taking a wait-and-see approach to blockchain. Some say they are having informal discussions with other internal stakeholders on the issue. But several participants pointed to the lack of current real-world examples within government and HHS departments to serve as models for blockchain implementations.

The Governing Institute/KPMG survey found that officials who are aware of the technology see potential benefits in several areas. Thirty percent of the HHS respondents expect blockchain to be most beneficial for data sharing, while 18 percent are eyeing benefits for public records management and 15 percent see possible payoffs for compliance and regulation.

Another 15 percent hope blockchain can improve identity management, an area that aligns with insights that arose in the group discussions and interviews. Those participants saw a link between more accurately determining the identity of constituents eligible for government services and
WHERE DO YOU THINK BLOCKCHAIN WOULD BE MOST BENEFICIAL WITHIN YOUR JURISDICTION?

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<tr>
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<td>None/no benefit</td>
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ACTIONS ARE HAVING INFORMAL DISCUSSIONS ABOUT HOW TO USE BLOCKCHAIN

WHERE DO YOU THINK BLOCKCHAIN WOULD BE MOST BENEFICIAL WITHIN YOUR JURISDICTION?

- **Data sharing and storage**: 30%
- **Public records management**: 18%
- **Cybersecurity**: 9%
- **Financial management**: 9%
- **Compliance and regulation**: 15%
- **Identity management**: 15%
- **Asset management**: 3%
- **Taxes**: 0%
- **Property management**: 3%
- **Voting**: 1%
- **Other**: 1%
- **Vehicle registration**: 1%
- **None/no benefit**: 0%

reduction in fraud that results from misused services. “There’s a significant perception among legislators that the whole Supplemental Nutrition Assistance Program (SNAP) program is fraught with fraud,” says Jackson. “We don’t believe that’s entirely the case, but their perception is so strong that they’re now asking us to consider doing more to make sure that the people who are using the program’s EBT [electronic benefit transfer] cards are the people cards have been granted to.”

As a result, Jackson is interested in whether blockchain might be part of an enhanced solution to authorize transactions, improve the overall integrity of the program and provide reporting transparency to demonstrate integrity to legislators, regulators and others.

In the discussions with HHS officials, there was a desire to explore how blockchain could tighten the management of payments to third-party contractors, such as daycare providers. As with SNAP, opportunities for misuse exist if government can’t accurately track the number of children being checked into facilities and how long they stayed, and then tie the data to contract payment terms. “We’ve had issues in this space because we’re essentially taking the daycare center’s word that each child actually showed up,” Jackson says. “So we’re wondering if it may be possible in the future to replace swipe-card technology with something that’s based on blockchain to shore up the integrity of the program.”

Georgia’s Venkat Krishnan, CIO at the Department of Human Services, also ponders if blockchain could prevent fraudulent use of EBT cards, which are used to conduct nearly $2.5 billion in annual transactions in his state. It’s currently possible for unscrupulous businesses and citizens to defraud the program, in part through purchases of unapproved products. Interest in Georgia is being spurred by recent work to develop an enterprise master person index as part of the state’s integrated eligibility project. Among other things, Krishnan wants to know if blockchain can help provide a master identity or “golden key” that verifies individuals across the enterprise of HHS departments and programs. This could enable the state to deliver more coordinated services and better understand service costs.

In addition, a master identity could strengthen detection activities across Georgia’s multiple but disconnected fraud units within HHS agencies and elsewhere. Officials wonder if blockchain could enable the state to develop a holistic record or criminal history for fraud suspects that could be securely shared across the various agencies to provide a complete picture of individuals who commit benefits fraud.

Enhanced information sharing represents another potential use case. Blockchain may be a mechanism to enforce security and privacy requirements associated with shared data and provide an audit trail as data flows among multiple organizations. Because HHS departments have data-sharing agreements in place with multiple departments, this use case might apply to several areas:

- **Exchange of medical records and claims information**
  “Sharing medical records is a challenge because of the number of individual organizations involved, the privacy aspects of the data and the need to share information in a timely manner,” says Malik Faizullah, director of data and analytics at KPMG. “Blockchain is well suited for
that because it can bring all the players into a single ecosystem for sharing records. We’re seeing government organizations outside the U.S. starting to use it for this purpose."

U.S. agencies are starting to think about similar applications. "I’ve begun to look at blockchain for creating a master patient index and to assist with data interoperability within a health chain," Halenbeck said. "Right now the data is in disparate systems, and pulling data together in a meaningful way is something that we have to work to achieve every day."

- **Child support collection**
  With a court order, human services agencies often can deduct child support payments directly from employee paychecks. But managing this process is difficult. Pay rates and support amounts change frequently (and therefore often are inaccurate). It’s also difficult to track where employees actually work when they are employed by large businesses with multiple locations. Blockchain may be able to automate this process and make it more accurate and timely.

- **Driver’s license suspension**
  Departments also may suspend a citizen’s driver’s license for failure to pay child support. But it’s often difficult to coordinate license suspension and reinstatement with state motor vehicle departments. In particular, there’s a need to quickly reinstate driving privileges once a citizen is current on payments. One possibility is for blockchain to speed up these processes and keep them in sync through enhanced data-sharing capabilities.

### Barriers to Blockchain

Potential challenges must be addressed before government officials make a solid commitment to blockchain. In these early stages of blockchain development, a lack of knowledge about the technology is the most cited barrier by HHS executives. Other significant holdups include funding concerns and questions surrounding how to procure the technology. Another sign of how early government is in the blockchain analysis process is the 40 percent of survey respondents who admitted they’re not yet at the point of even knowing what the potential adoption barriers may be.

Among those who offered an opinion about barriers, more than 13 percent saw outdated infrastructure as a problem. Georgia’s Krishnan and others in the discussion sessions cited similar concerns, saying they would have to investigate how blockchain could be integrated within their department’s existing technology investments.

Georgia participants also noted that blockchain adoption would ultimately require the state to develop internal skills necessary to support and sustain the technology. Initially, those capabilities could be provided by a contractor, but executives saw a long-term need for HHS agencies to become self-sufficient.

Executives in Tennessee and Georgia aren’t taking blockchain’s security capabilities at face value, saying they’ll need to explore this area in depth and gain a better understanding of blockchain’s underlying security technology before committing to real-world deployments. Specific concerns centered on maintaining data integrity and securely sharing data across all authorized blockchain users.
Next Steps

Several participants noted that current conversations about blockchain are IT-driven instead of business-driven, adding that this eventually needs to change. IT executives involved in this research want to avoid blockchain being seen as “technology for technology’s sake.” Instead, they want to ensure multiple parties believe it’s the right tool for addressing specific business problems. Reaching that point requires further engagement between IT and business leaders to give the latter a clear understanding of blockchain’s potential.

Organizations will have to formulate strategies for helping non-technical stakeholders understand blockchain. In fact, a pilot project in New York City shows that the technology foundation of blockchain appears to perform successfully. The biggest challenge is getting stakeholder buy-in, “because there’s so little familiarity with what blockchain is,” says Michael Jabbour, CIO in the city’s Department of Social Services Office of Informatics and Information Technology. “People want to understand how data is shared and what the impact will be on them. So we’re focusing on documenting our implementation decisions and how stakeholders are responding to those pieces. This is also part of creating that stakeholder trust.”

Another factor is the immaturity of the market for blockchain solutions. Multiple discussion session participants said they likely would prefer a blockchain service rather than implementing such a platform themselves.

“I don’t believe blockchain is technology that the state would invest in and deploy itself,” Jackson says. “It’s something that we would likely want to consume.”

To explore this possibility, he plans to initiate conversations with providers of EBT ecosystems for SNAP services. “We may say to them as we approach the time to renew our contracts, that we’re considering giving extra points for blockchain capabilities in our next RFP or re-compete,” he says. “We want providers to start thinking about blockchain and possibly investing in it.”

LOOKING TO THE FUTURE

It’s too soon to tell how intelligent automation and blockchain will impact the way HHS departments serve citizens, manage internal operations and care for the sensitive information they’re trusted to protect. But with an eye to transforming many inefficient legacy processes and addressing the realities of limited resources, progressive government officials aren’t waiting to educate themselves about these two potentially game-changing technologies. Some HHS departments are engaging in informal discussions with IT and business stakeholders, others are investigating potential use cases. Some are even considering incentives for encouraging outside contractors to address these innovations in future RFPs. Look for interest in both technologies to rise sharply in the months ahead, and if cost/benefit analyses play out favorably, for HHS to be among the leaders in intelligent automation and blockchain adoption.