

# Risk Management in the AI Era: Navigating the Opportunities and Challenges of AI Tools in the Public Sector

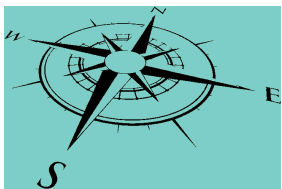
AI tools present both immense opportunities and challenges to good governance that should be considered and weighed carefully well before the adoption and implementation of the tools themselves.

... we distill our theoretical and empirical discussions of artificial intelligence tools in the public sector into recommendations for developing appropriate risk management processes. They are meant to help guide public managers as they consider, adopt, and implement AI tools to augment and automate tasks within their organizations. We base these recommendations on our analysis of existing federal policy, findings from the two case studies, and the existing academic research on innovation adoption in general and AI tools in particular. The recommendations are [documented as goals and objectives in this StratML rendition]

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## IBM Center for The Business of Government (CTBG)

### Description:

Through research stipends and events, the IBM Center for The Business of Government stimulates research and facilitates discussion of new approaches to improving the effectiveness of government at the federal, state, local, and international levels.

### Stakeholder(s):

#### Justin B. Bullock :

*Co-Author — Texas A&M University — Justin B. Bullock is an assistant professor in the Public Service and Administration department and a research fellow in the Institute for Science, Technology and Public Policy. Bullock earned his PhD in public administration and policy with a specialization in public management and public policy from the University of Georgia in 2014, as well as a master's in public administration and a bachelor's in business administration, also from the University of Georgia. Dr. Bullock has a number of interests at the intersects of public administration, public management, artificial intelligence, digital governance, and digital discretion. He is interested in the effects on governance, administration, and society of the rapid changes in decision making tools and data. He is also interested in what new opportunities, challenges, and questions these rapid changes pose for governance and society.*

#### Matthew M. Young :

*Co-Author — Syracuse University — Matthew M. Young is an Assistant Professor of Public Administration and International Affairs at the Maxwell School at Syracuse University. His research interests include public management, innovation and technology adoption and use by the public sector, and service delivery. Dr. Young's work on in the public sector technological innovation has been published in top public administration and*

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#### Daniel J. Chenok :

*Executive Director, IBM Center for The Business of Government*

#### Public Managers :

*This report provides public managers with a framework for managing the risks associated with the public sector's entrance into the AI era... This list [of recommendations] is not meant to serve as a standalone risk management strategy for public sector adoption of AI. Rather, we intend it to provide public managers with a starting set of basic considerations informed by the latest field research and practice to serve as a first step in developing an effective risk management framework for their organizations.*

### Vision

The risks associated with the public sector's entrance into the AI era are managed

### Mission

To guide public managers as they consider, adopt, and implement AI tools

## 1. Capacity & Analyses

*Commit to up-front and ongoing investments in management capacity and analysis related to both AI and existing organizational processes.*

### Stakeholder(s)

#### Public Managers :

*The field of AI is evolving too rapidly to expect nonspecialists to stay at the cutting edge, but public managers must familiarize themselves with the fundamental and general concepts and capacities in order for any risk management approach to succeed.*

#### Canadian Government :

*The Canadian government formalizes this approach in its 2019 Directive on Automated Decision-Making.*

#### Higher Education Programs :

*A second example is adding organizational capacity by hiring candidates from the rapidly growing set of data analytic specializations and dual-degree options in existing public administration and policy graduate programs. Higher education programs have broadly acknowledged both supply- and demand-side pressures for graduates with expertise not only in the traditional facets of public administration and policy analysis, but modern analytic techniques and data management practices.*

#### City of Syracuse :

*The case of the City of Syracuse's infrastructure investments exemplifies the value of this approach. By deciding to continue to staff and fund the innovation team initially established through nonprofit grant funding, Syracuse retained the in-house expertise necessary to identify and leverage the potential for the city to leapfrog to next generation, AI-enabling infrastructure.*

#### City of Bryan :

*The City of Bryan also highlights this approach through its ongoing partnership with world-leading engineers at Texas A&M University as they pilot and refine the use of self-driving trolleys in an iterative process that both researchers and City officials have committed to.*

#### Senior Personnel :

*At the same time, these skills are also a critical need for more senior, established personnel who represent the current generation of decision makers.*

### 1.1. Data & IT

*Assess your data and IT capacity.*

As part of this investment, consider dedicating resources—whether internal or contracted by a third party—to assess your current data and IT capacity, and determine what tasks or processes may be improved by incorporating AI tools.

### 1.2. Tasks & Processes

*Determine what tasks or processes may be improved by incorporating AI tools.*

### 1.3. Training

*Build internal capacity by seeking out AI training for current employees.*

### 1.4. Information

*Stay informed on the latest AI tools, their cost, and their reliability.*

## 1.5. Procedures

*Adapt existing risk identification procedures to AI adoption decisions.*

One example of this approach is the adaptation of existing risk identification procedures as a required element of any AI adoption decision. Many organizational decisions that predate AI have long required risk review and compliance checks from technical and/or legal experts. Investing in adapting these review processes minimizes duplication of effort and additional complexity from adding wholly novel routines...

## 1.6. Performance Management

*Incorporate recognition of AI training and education into performance management and personnel reviews.*

One approach to meeting this need is incorporating recognition of ongoing professional training and education on both the technical and managerial implications of AI into performance management and personnel review programs. This training could include executive education programs or even Massively Open Online Course (MOOC)-style asynchronous online options, but integrating whichever approach is deemed best to performance plans where appropriate for the position will help align managerial and employee incentives around developing internal capacity to understand and manage AI-related risks.

## 2. Tools & Tasks

*Manage risk by maximizing goodness of fit between tool and task.*

### Stakeholder(s)

#### Canadian Government :

*As with the adaptation of risk review processes, the Canadian government's Directive on Automated Decision-Making is a clear example of how to put this recommendation into practice. It identifies four discrete levels of impact arising from the use of AI in administrative decision making, ranging from those that have little likely and/or brief and reversible impact on the rights, well-being, and economic interests of individuals and communities, to those that will create irreversible, permanent impacts. Each impact level is then assigned a minimum standard of review from internal and external experts and review boards. In practice, this approach is interdependent with both the preceding and following recommendations.*

#### City of Bryan :

*Organizations must have both internal expertise and knowledge of and relationships with external experts for such review processes to be effective. The case of the City of Bryan self-driving trolleys also highlights a process of risk management and maximizing goodness of fit between tool and task. As the self-driving trolleys are being iteratively tested and improved, their routes throughout the city are kept short, do not cross major roadways, and maintain a low speed. This way, the trolleys—even in the case of a driving error or software malfunction—are operating at such a slow speed that it would be unlikely that the passengers or other vehicles would suffer serious injury. As the trolleys are further tested and developed, their routes will be expanded as well as their general benefits to the residents of the city.*

Avoid the temptation to integrate AI tools into existing or new processes as a method of virtue signaling how future-ready your organization is.

### 2.1. Consequences

*Consider the consequences of a task that is being considered for automation.*

Take the time and effort to seriously consider the consequences of a task that is being considered for automation.

### 2.2. Pilots

*Pilot AI tool augmentation with tasks that are routine, repetitive, and contain quality data.*

Manage upfront risk by looking to tasks that are routine, repetitive, and contain quality data as pilot cases for AI tool augmentation.

### 2.3. Effectiveness & Efficiency

*Estimate the improvements in effectiveness and efficiency from implementing AI tools.*

Estimate the improvements in both effectiveness and efficiency from implementing AI tools into existing or new processes ex ante, weigh them against the corresponding risk costs, and use robust sensitivity analysis to challenge every modeling assumption involved.

### 2.4. Privacy, Ethics & Liberty

*Consider privacy, ethical, and personal liberty concerns.*

Carefully consider all privacy, ethical, and personal liberty concerns with the use of data and the deployment of AI tools.

### 3. Relationships

*Leverage existing relationships and foster new ones to share knowledge.*

**Stakeholder(s)**

**Research Universities :**

*Both of the local governments profiled in this report’s case studies made direct and substantial use of this approach through their coordination with local research universities.*

**City of Bryan :**

*The City of Bryan worked closely and iteratively with experts and world-leading engineers from Texas A&M University, from project ideation through implementation.*

**Texas A&M University**

**City of Syracuse :**

*In the case of the City of Syracuse, its Office of Accountability, Performance, & Innovation collaborated with Syracuse University’s School of Information Studies and College of Engineering and Computer Science, as well as private technology vendors, in identifying and planning for future uses of its developing Smart City and 5G Wireless infrastructure as part of the city’s “Smart Surge” initiative.*

**Local Governments :**

*Smaller local governments that do not have a geographic or historic affiliation with a college or university could look to establish new connections with the alma maters of their senior leadership. They should also look for opportunities to solicit national-level partners across the public, private, and nonprofit sectors that are motivated to extend their expertise beyond major metropolitan centers.*

**State Governments :**

*The reciprocal of this example is also true: federal and state governments should engage with local and regional officials not only in disseminating risk management strategies, but in their development. The breadth of variation in initial conditions, capacities, and constraints across localities make them a tremendous asset for reducing uncertainty. This can be achieved by improving policymakers’ ex ante understanding of both what needs to go right and what can go wrong as AI implementation becomes more diffused and commonplace.*

Don’t bowl alone: Leverage existing relationships and foster new ones to share knowledge. The details of prior successes—and failures—of peer governments, organizations, and agencies with using AI tools are the most valuable asset for public managers looking to minimize their own risks with similar projects.

#### 3.1. Professional Associations

*Use professional associations to share knowledge.*

Consider using existing professional associations (e.g., ICMA, etc.) to create working groups, email lists, and other channels for knowledge sharing.

**Stakeholder(s):**

**Professional Associations**

**ICMA**

#### 3.2. Partnerships

*Draw on existing partnerships and pursue new ones.*

Draw on existing partnerships and pursue new ones with those outside the public sector in industry, academia, and related nonprofits. Use the knowledge gained through these networks to avoid needless risks.

**Stakeholder(s):**

**Industry**

**Nonprofits**

**Academia**

#### 3.3. Contracts

*Carefully negotiate contracts with AI tool providers.*

Carefully negotiate contracts with private providers of AI tools, be aware of their records of accomplishment, their respect for citizen privacy, and the ability to retain levels of expertise and manageability in house.

**Stakeholder(s):**

**AI Tool Providers**

**Administrative Information**

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