

State Data-Maturity Assessment

**HELPING DATA LEADERS TRACK AND EVALUATE THE PROGRESS
OF DATA STRATEGIES IN STATES**

A STATE CHIEF DATA OFFICERS NETWORK RESOURCE | MILDA AKSAMITAUSKAS



Acknowledgement

When I first started in my role as the chief data officer (CDO) at the Wisconsin Department of Justice, I spoke with attorneys, special agents, victims services specialists, database administrators, and a webmaster to learn more about the agency's data in order to present recommendations to the Office of the Attorney General. I was looking for a good data-maturity self-assessment tool for a government agency—a tool that included a nuanced understanding of data-sharing agreements, siloed grant funding, statutes prohibiting data sharing, and a 100-year-old law guiding public records. Disappointed that a good tool was not available, I ended up using a mix of several assessments geared toward private companies, adjusting some of the questions to apply to the government context.

As I turned stories about environmental law cases, forensic lab operation measures, and sexual assault prevention programs into detailed data-management recommendations and requests for investments in tools and training, I had to tell a convincing story to people who did not deal with data-quality issues on a daily basis. CDOs know this skill all too well; they are constantly tasked with explaining complex information succinctly and engaging leaders in dialogue. In a single conversation, a CDO has to answer questions about data matters, how the state or agency is performing in data collection and usage, and how a state or agency might compare its performance to others.

A data-maturity assessment tool for government can provide CDOs and data leaders with concrete information to measure their state or organization's strengths and weaknesses, and can also help identify areas for investment and improvement. This assessment builds on past work of the [Beeck Center for Social Impact + Innovation's](#) State Chief Data Officers Network—including [framing the CDO role](#)—and has been reviewed by current CDOs representing three quarters of U.S. states.

I invite state data leaders to take this assessment and use it to enhance their strategic and tactical plans. This is not a state ranking tool; it is the pathway up a mountain. And as you climb the first summit, you will see there are more mountains to climb.

Milda Aksamitauskas

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What You Need to Know

A data-maturity assessment is a tool that empowers states to identify strengths and weaknesses in harnessing data insights for informed policymaking and service delivery. By conducting this assessment, your state can:

- + Gain valuable insights into its data culture and practices;
- + Pinpoint areas for improvement; and
- + Prioritize investments in data-related initiatives.

This model examines five areas that all U.S. states commonly encounter—commitment, talent pipeline, data planning, data sharing, analysis, and sustainability—and benchmarked measures of state governments as they grow their data maturity.

This assessment does not produce a single score and is not intended to disparage states; rather, the purpose is for each state to gain a nuanced and comprehensive overview of their maturity level and determine what areas can grow further.

This model is intended to be used primarily by state level CDOs, or other data leaders seeking to:

- + Advance the use of data in their state;
- + Guide conversations with less technical leaders such as governors, policy directors, budget directors, legislators, or others in decision-making roles; or
- + Track year-over-year improvements in statewide data strategy.

The first iteration of the assessment model is designed to capture statewide data maturity, not that of individual departments or agencies, although departments or agencies are welcome to use the tool. This assessment also focuses on qualitative assessments of data maturity, unlike other technical data-management maturity assessments.

How to Take This Assessment

Review the whole document, including the self-assessment questions and options for answers. There are five categories and a total of 17 questions. We encourage states to select a team knowledgeable about the data policies and processes in your state to review the questions, discuss answer options for each question, and start collecting relevant documentation supporting your state's answers.

(Optional) Share your state's responses with the Beek Center. The State CDO Network looks forward to learning more about the maturity levels of states and sharing best practices with state CDOs. You can also email additional notes about your state's assessment to digitalservicenetwork@georgetown.edu.



Levels of Maturity

Below is an overall framework for the maturity measures and benchmarks for each level. States usually start their data journeys from initial awareness and emerging practices. The highest maturity level is an ambitious benchmark, challenging states to stretch their goals and become nationally recognized data leaders.

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> State complies with minimum legal requirements for data sharing, standards, and reporting. <input type="checkbox"/> Siloed, agency-level work only. State sets limitations and restrictions by default. <input type="checkbox"/> No explicit value assigned to data. <input type="checkbox"/> State has no defined responsibility and oversight for data. <input type="checkbox"/> No central or standard decentralized knowledge of what data the state holds. <input type="checkbox"/> Very limited data literacy of staff. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data is used sporadically. <input type="checkbox"/> Data is seen as an IT, statistics, or administrative responsibility. <input type="checkbox"/> Use of or access to data is limited to specialized staff. <input type="checkbox"/> Lack of awareness about the unique value of data held across the state. <input type="checkbox"/> Stewardship roles around data are not well communicated. <input type="checkbox"/> Disconnect between state leadership goals and data activities or strategies. <input type="checkbox"/> Focus is only on high-profile data outputs. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data skills and use of data are valued in leadership roles. <input type="checkbox"/> Data governance at state level is discussed. <input type="checkbox"/> Staff engagement with data extends beyond IT or administrative roles. <input type="checkbox"/> Program and policy staff engage with specialized users to share or test data uses. <input type="checkbox"/> Agencies have a desire to improve data capability. <input type="checkbox"/> State has intentional strategies to break down data silos. <input type="checkbox"/> State has some external outreach and engagement around data. 	<ul style="list-style-type: none"> <input type="checkbox"/> Beginning to embed data policies and practices across state agencies. <input type="checkbox"/> Program and policy staff have access to data without reliance on specialized support. <input type="checkbox"/> State has an established process for regular review of data policies. <input type="checkbox"/> Data is consistently treated as a priority in strategies and budgets. <input type="checkbox"/> All staff and leaders engage with data regularly in some form. 	<ul style="list-style-type: none"> <input type="checkbox"/> State is consistently proactive on data projects, policies and strategies. <input type="checkbox"/> State-wide data strategies are implemented in a timely manner and updated regularly. <input type="checkbox"/> Strong engagement across state agencies and with external partners. <input type="checkbox"/> Clear understanding of needs and timely responses to emerging priorities. <input type="checkbox"/> All staff and leaders understand statewide capability to use data. <input type="checkbox"/> Future proofing data infrastructure and rapid response to risks.

Self Assessment

Below is the state data-maturity assessment framework listing the main categories, questions, and the specific benchmarks to meet one of five maturity levels for each question. The five components of the framework are:

- A. Commitment
- B. Data Talent Pipeline
- C. Data Action Plan
- D. Sharing
- E. Analysis

A. COMMITMENT: State has an ongoing commitment to establishing and empowering data leaders.

Advanced states have appropriated budgets allocated to support and sustain the CDO office. Three quarters of states have a formally established CDO role and a third of them have established a deputy CDO role. Six states allocate more than \$6 million annually for their CDO offices.

A1. Does your state have a formally established CDO or equivalent role? <i>CDO is a defined role that leads a comprehensive statewide data strategy and has a cross-cutting influence in state data-management and initiatives.</i>				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<input type="checkbox"/> No statewide data leadership role or responsibilities.	<input type="checkbox"/> CDO role exists, but is not established by a formal action. <input type="checkbox"/> Geographic Information Systems (GIS) team(s) exists.	<input type="checkbox"/> CDO role is established by administrative action. <input type="checkbox"/> Roles and responsibilities are defined. <input type="checkbox"/> CDO roles are established at an agency level. <input type="checkbox"/> GIO (geographic information officer) for the state is established.	<input type="checkbox"/> CDO role is established by legislation. <input type="checkbox"/> CDO roles and responsibilities are communicated and calibrated with other state-level positions such as chief information officer (CIO), chief information security officer (CISO), geographic information officer (GIO), etc.	<input type="checkbox"/> Statewide CDO role is defined in legislation and empowered to inform data strategy across all departments. <input type="checkbox"/> CDO has a strategic role, is well integrated with the GIO role, collaborates with CIO, CISO, human resources, and budget directors.

A2. What funding does your state provide for the CDO office and data initiatives?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> No budget exists or the state uses ad-hoc funding approaches. <input type="checkbox"/> Senior leaders do not see data as important or valuable. 	<ul style="list-style-type: none"> <input type="checkbox"/> Individual efforts are funded through federal grants or other one-time funding mechanisms. <input type="checkbox"/> Leaders show some recognition of the importance of data to the state, but they do not see the value of engaging with it. 	<ul style="list-style-type: none"> <input type="checkbox"/> CDO office is staffed with core roles sufficient to implement a basic data strategy. <input type="checkbox"/> State leaders know data is important and are curious to learn about its potential uses and benefits. 	<ul style="list-style-type: none"> <input type="checkbox"/> CDO office is staffed with core roles sufficient to implement a growing data strategy, including dedicated legal support. <input type="checkbox"/> Collaborative relationship with enterprise IT. <input type="checkbox"/> Senior leadership teams model good data culture and agencies have funding for data roles corresponding to statewide standards. 	<ul style="list-style-type: none"> <input type="checkbox"/> CDO has a budget authority, established funding, and financial planning process in place. <input type="checkbox"/> Funding is appropriated through the state budget and costs are built into federal grants. <input type="checkbox"/> State proactively provides annual funds to agencies to improve data infrastructure in alignment with data strategy, in addition to providing enterprise tools. <input type="checkbox"/> Senior leadership teams continuously support a well-embedded, strong data culture throughout the agencies and champion statewide data governance.

A3. How actively is your state involved in data initiatives, collaborations, and partnerships?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> No data leadership at state level or at large agencies (health and human services, education, workforce, transportation, justice). <input type="checkbox"/> State leaders do not communicate data policies and principles or seek to embed them due to a lack of interest or dedicated resources. <input type="checkbox"/> State leaders do not see external data users as stakeholders useful in influencing data strategy. 	<ul style="list-style-type: none"> <input type="checkbox"/> Some agencies have data leadership positions, with ad-hoc and varying resources. <input type="checkbox"/> Data principles and policies exist but are not widely supported or understood. <input type="checkbox"/> Data leaders are piloting central data functions, but not yet scaling. <input type="checkbox"/> State engages in ad-hoc, one way external communication regarding data efforts. 	<ul style="list-style-type: none"> <input type="checkbox"/> All medium and large agencies in the state have data leaders with financial and staff resources. <input type="checkbox"/> CDO can provide guidance on data standards and policies statewide. <input type="checkbox"/> State has a widely supported data strategy, principles, and policies that are publicly available. <input type="checkbox"/> State establishes and shares data transparency, access, equity goals and initiatives publicly. 	<ul style="list-style-type: none"> <input type="checkbox"/> State data leaders have defined collaborative processes with agency data leaders, local data leaders, GIOs, open data managers across the state, etc. <input type="checkbox"/> CDO has authority to establish data standards and policies statewide and is able to centralize important data functions. <input type="checkbox"/> State is actively working to embed data strategy, principles, and transparency, access, equity and other data policies across the agencies. 	<ul style="list-style-type: none"> <input type="checkbox"/> State's CDO leads collaboration and data collection or reporting relationships with the federal government and other states. <input type="checkbox"/> State leaders use data alongside community input to provide robust, credible evidence to influence policy and decision makers. <input type="checkbox"/> Data principles and policies embedded and governed with clear visibility across agencies and to the public.

B. DATA TALENT PIPELINE: State is increasing capacity of public-service workforce to use data for decision making and operational excellence.

Advanced states are making changes to civil service classifications and job descriptions to include skills such as data engineering and data science, and have ongoing, statewide data-literacy programs.

B1. Is your state prepared to fund dedicated staff to implement a statewide data strategy?				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> No formal or stand-alone data-related job classifications exist. <input type="checkbox"/> Staff are not given sufficient support, time, or funding to incorporate data into their work. <input type="checkbox"/> Senior leaders have a very basic understanding of data and require specialized support to make use of data. This may be limited to working with data visualizations. 	<ul style="list-style-type: none"> <input type="checkbox"/> Specialization in data-related jobs is recognized via distinct job titles like “data scientist,” “data engineer,” and “data analyst.” <input type="checkbox"/> Most staff recognize data is part of the agency’s operation but are not aware of how their data connects to a statewide data strategy. <input type="checkbox"/> Leaders of some agencies are capable of using data analysis to make strategic decisions with some specialist support. 	<ul style="list-style-type: none"> <input type="checkbox"/> Specialized data-related job classifications are established statewide. Many types of job classifications include data stewardship responsibilities. <input type="checkbox"/> People across agencies are able to collaborate to implement data strategy goals. <input type="checkbox"/> Many agency leaders are capable of using data analysis to make decisions with minimal specialized support. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data-related job classifications are regularly updated based on changes in the industry. <input type="checkbox"/> Blueprints and guidance exist for agencies to implement data teams and best practices internally. <input type="checkbox"/> All senior leaders are confident in using data analysis without much support, and some are capable of using data in cutting edge ways. <input type="checkbox"/> Formal data roles and responsibilities exist including GIS, data scientists, data management, etc., in larger agencies. 	<ul style="list-style-type: none"> <input type="checkbox"/> All classifications are updated to include data stewardship roles and responsibilities. <input type="checkbox"/> State has many people with a range of data and analysis expertise in leadership positions, including at the most senior levels. <input type="checkbox"/> Senior leaders have regular data-analysis practices and are able to assess risk and opportunity of emerging data trends. <input type="checkbox"/> Formal data roles and responsibilities, with ongoing support, exist and are in use across many departments and agencies.

B2. Does your state have an ongoing, statewide data-skills training program and learning opportunities for staff?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> Training is ad-hoc and based on agency-level determination and funding. <input type="checkbox"/> State limits training or expertise in data skills to small groups, junior staff, or IT and administrative roles. 	<ul style="list-style-type: none"> <input type="checkbox"/> In addition to agency-specific, ad-hoc training, state offers training on specific state data tools regularly. <input type="checkbox"/> Some staff have data skills, but are not using them regularly or confidently. 	<ul style="list-style-type: none"> <input type="checkbox"/> State has a strategic approach to data training and literacy, offering tailored trainings appropriate for different data-related and non-related staff at little to no cost (e.g. management, analysts, and non-analysts). <input type="checkbox"/> Staff have the skills to adequately understand and make use of data systems and a variety of data tools. 	<ul style="list-style-type: none"> <input type="checkbox"/> Training programs exist, are regularly offered, and are part of the state's core requirements for all staff and leadership roles (cyber security, ethics, etc). <input type="checkbox"/> Job classifications with dedicated responsibilities for data management and data architecture have access to specialized support. <input type="checkbox"/> State aligns data training opportunities with wider data strategy (e.g. upskilling for new data systems or emerging trends). 	<ul style="list-style-type: none"> <input type="checkbox"/> Training programs include certification or other forms of employee recognition. <input type="checkbox"/> Agency staff are regularly trained and capable of implementing data strategy goals and responding to emerging trends.

C. DATA ACTION PLAN: State actively manages its data, knows what data is available, and has a data strategy and a transparent data-governance process.

Advanced states have a written data strategy, are involved in creating and updating statewide data inventories, catalogs, and individual agency data strategies, fund data quality programs, and implement data-architecture standards.

C1. Does your state have a statewide data strategy?				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<input type="checkbox"/> No statewide data strategy.	<input type="checkbox"/> Data strategy exists and is publicly available.	<input type="checkbox"/> Data strategy is publicly available and is updated on a regular, defined schedule.	<input type="checkbox"/> Data strategy is publicly available and is updated on a regular, defined schedule, and mechanisms exist to ensure state actions are consistent with the strategy.	<input type="checkbox"/> Data strategy is publicly available and regularly updated with opportunities for public comment and community input. <input type="checkbox"/> State's data strategy influences other strategies and annual action plans.
C2. How much is your state improving data-management programs and data-integration initiatives?				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<input type="checkbox"/> No data asset inventory.	<input type="checkbox"/> An inventory of data collection systems exists. The process for how to record data in the inventory is not described, supported, or monitored.	<input type="checkbox"/> Individual agencies have data inventories, but no statewide inventory exists	<input type="checkbox"/> A regularly updated, statewide inventory of data exists with basic legal or regulatory information.	<input type="checkbox"/> A comprehensive inventory of data exists and contains detailed metadata and identifies highest maturity and/or most used datasets.

<ul style="list-style-type: none"> <input type="checkbox"/> No standards for metadata, data categories, master data, or key data elements. <input type="checkbox"/> No formal data quality processes in place. No data quality improvement plan. <input type="checkbox"/> There is no team responsible for data architecture. Data architecture is not based on any standard. <input type="checkbox"/> Agencies typically rely on specialized individual knowledge to find data and make it available to those who need it. <input type="checkbox"/> State does not have or is beginning to build an integrated data system (such as longitudinal education system, job exchange, health information exchange). 	<ul style="list-style-type: none"> <input type="checkbox"/> All metadata definitions allocated to IT. IT continuously follows up with the business for metadata business definitions. <input type="checkbox"/> No standardized data quality processes in place. Issues are addressed as they are identified by users. <input type="checkbox"/> The agency is project driven and data-architecture teams disband after each project. Ad-hoc use of internal or third party standards. <input type="checkbox"/> State has a defined and documented process to link administrative data records, and data-sharing agreements provide a predictable process for such data integration. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Business metadata management is allocated to the businesses and technical metadata to IT. There is a recognized need for metadata management across projects and programs. <input checked="" type="checkbox"/> There is a recognized need for standardized data-quality processes. A data-quality strategy is formulated and data-quality targets are defined. <input checked="" type="checkbox"/> A data-architecture team has been defined and has taken responsibility for ownership of the conceptual, logical, and physical data architecture, data-architecture standards, and the oversight of the delivery of data systems. <input checked="" type="checkbox"/> Data standards and interoperability from statewide projects such as health information exchanges, longitudinal education data systems, and public health meaningful use registries are used by others. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> A clear metadata model exists, responsibilities are communicated and endorsed by leadership, and processes are in place to allow metadata sharing. Business, technical, operational, and security metadata have been defined and are integrated. <input checked="" type="checkbox"/> Standardized data-quality processes are in place and executed for measuring, monitoring and reporting data-quality performance against data-quality targets. <input checked="" type="checkbox"/> Data-architecture team provides oversight on multiple projects and enforces data-architecture standards. <input checked="" type="checkbox"/> Data is available to those who need it through efficient, structured, well-communicated routes. Most data can be accessed without specialized support. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Data-quality processes are continuously refined to incorporate lessons learned and new leading practices. <input checked="" type="checkbox"/> As business needs and technologies evolve, the data-architecture team adapts to accommodate the changes. A leading industry or government standard has been adopted and the current data architecture completely complies with the standard. <input checked="" type="checkbox"/> State actively maintains and updates metadata in tandem with changes to the data for all known data sets. <input checked="" type="checkbox"/> A public access layer of the data inventory supports transparency around data assets that require limited access. <input checked="" type="checkbox"/> State is a leader on data standards and interoperability projects, participating in the development of new and improved standards with high-value use cases.
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<ul style="list-style-type: none"> <input type="checkbox"/> No standards for metadata, data categories, master data, or key data elements. <input type="checkbox"/> No formal data quality processes in place. No data quality improvement plan. <input type="checkbox"/> There is no team responsible for data architecture. Data architecture is not based on any standard. <input type="checkbox"/> Agencies typically rely on specialized individual knowledge to find data and make it available to those who need it. <input type="checkbox"/> State does not have or is beginning to build an integrated data system (such as longitudinal education system, job exchange, health information exchange). 	<ul style="list-style-type: none"> <input type="checkbox"/> All metadata definitions allocated to IT. IT continuously follows up with the business for metadata business definitions. <input type="checkbox"/> No standardized data quality processes in place. Issues are addressed as they are identified by users. <input type="checkbox"/> The agency is project driven and data-architecture teams disband after each project. Ad-hoc use of internal or third party standards. <input type="checkbox"/> State has a defined and documented process to link administrative data records, and data-sharing agreements provide a predictable process for such data integration. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Business metadata management is allocated to the businesses and technical metadata to IT. There is a recognized need for metadata management across projects and programs. <input checked="" type="checkbox"/> There is a recognized need for standardized data-quality processes. A data-quality strategy is formulated and data-quality targets are defined. <input checked="" type="checkbox"/> A data-architecture team has been defined and has taken responsibility for ownership of the conceptual, logical, and physical data architecture, data-architecture standards, and the oversight of the delivery of data systems. <input checked="" type="checkbox"/> Data standards and interoperability from statewide projects such as health information exchanges, longitudinal education data systems, and public health meaningful use registries are used by others. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> A clear metadata model exists, responsibilities are communicated and endorsed by leadership, and processes are in place to allow metadata sharing. Business, technical, operational, and security metadata have been defined and are integrated. <input checked="" type="checkbox"/> Standardized data-quality processes are in place and executed for measuring, monitoring and reporting data-quality performance against data-quality targets. <input checked="" type="checkbox"/> Data-architecture team provides oversight on multiple projects and enforces data-architecture standards. <input checked="" type="checkbox"/> Data is available to those who need it through efficient, structured, well-communicated routes. Most data can be accessed without specialized support. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Data-quality processes are continuously refined to incorporate lessons learned and new leading practices. <input checked="" type="checkbox"/> As business needs and technologies evolve, the data-architecture team adapts to accommodate the changes. A leading industry or government standard has been adopted and the current data architecture completely complies with the standard. <input checked="" type="checkbox"/> State actively maintains and updates metadata in tandem with changes to the data for all known data sets. <input checked="" type="checkbox"/> A public access layer of the data inventory supports transparency around data assets that require limited access. <input checked="" type="checkbox"/> State is a leader on data standards and interoperability projects, participating in the development of new and improved standards with high-value use cases.
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			<ul style="list-style-type: none"> <input type="checkbox"/> State has a defined and documented process to link administrative data records and a centralized technology platform available to agencies. <input type="checkbox"/> State is collaborating with research partners and other states on data standards and interoperability use cases. 	
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C3. How comprehensive are your state’s defined and adopted data-governance processes?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> State relies on agency-level leaders to set ad-hoc rules on data governance in their purview. <input type="checkbox"/> State centrally collects and uses data for specific administrative purposes only when required. <input type="checkbox"/> Data is not governed in a consistent way across the state. 	<ul style="list-style-type: none"> <input type="checkbox"/> Formalized data governance exists within individual agencies or programs. <input type="checkbox"/> High-level data-governance policies and standards are in place statewide but not widely understood or implemented. <input type="checkbox"/> Multiple data owners have been identified who manage, but aren’t responsible for, critical data across agency systems. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data governance is defined by an administrative policy, and defined roles, responsibilities, and areas of accountability are being developed. <input type="checkbox"/> Agencies sometimes collaborate to share data using formal data-sharing processes, interacting with agency-level governance. <input type="checkbox"/> High-value datasets have assigned stewards and conform to agreed data standards. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data governance is defined by policy and authorized in statewide legislation or executive order. <input type="checkbox"/> A clear, hierarchical data-governance model exists, responsibilities are communicated and endorsed by leadership, and processes are in place to request data from both enterprise and functional levels. 	<ul style="list-style-type: none"> <input type="checkbox"/> Governance structures and processes exist in state agencies and are coordinated statewide via a state CDO office. <input type="checkbox"/> Data governance is treated as a core competency across strategy, people, process, technology, and control. <input type="checkbox"/> Statewide data-governance framework is subject to continual review, monitoring, and refinement.

		<ul style="list-style-type: none"> Senior leaders meet regularly to discuss data governance as a shared initiative across their areas. 	<ul style="list-style-type: none"> Responsibilities and roles for data-governance processes and data stewardship are clearly defined across the state. Performance of the senior leadership team includes consideration of progress toward data- interoperability objectives. 	<ul style="list-style-type: none"> Delivery of the objectives in the data strategy is reviewed and reported on as part of routine data governance, and goals are adjusted over time to continually drive improvement.
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D. SHARING: State has an established, clear, and predictable process for data sharing.

Advanced states have umbrella data-sharing agreements or data trusts to simplify and expedite data sharing across the agencies and with external stakeholders

D1. Does your state have either a standard data-sharing agreement or an “umbrella” agreement?				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> Data-sharing agreements exist between agencies for discrete projects. State engages in data sharing only if it is mandated to do so. 	<ul style="list-style-type: none"> Data-sharing agreements have a common template that is used statewide and exist between multiple agencies. State leaders perceive data sharing more as an administrative task, not a strategy. 	<ul style="list-style-type: none"> Data-sharing agreements are statewide and exist between multiple agencies, and are cataloged and accessible to agencies so it is transparent what data is shared among state agencies. 	<ul style="list-style-type: none"> Data-sharing goals are included in the statewide data strategy. Master data-sharing agreement is in place or in development on a statewide level. 	<ul style="list-style-type: none"> Data sharing both inside and outside of government are core goals of the data strategy. Data-sharing authority established at a statewide level and within agencies is institutionalized and executed.

		<ul style="list-style-type: none"> ■ Data sharing is a codified strategic goal for some state agencies, and leaders implement specific administrative policies to simplify data sharing. 	<ul style="list-style-type: none"> ■ State agencies and leaders advocate for legislative or executive policies that facilitate statewide data sharing. 	<ul style="list-style-type: none"> ■ Data-sharing agreements are cataloged and actively reviewed to ensure strategic goals are met.
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D2. How comprehensive is your state’s open-data program?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> □ Open data is available but distributed across websites of different agencies. 	<ul style="list-style-type: none"> □ Some open data is available in a machine-readable format through a single state website. □ Central data team follows an open-data policy or program strategy, whether or not it is being implemented. □ Individual agencies have strategic plans that help prioritize data for publication. 	<ul style="list-style-type: none"> ■ Open data is regularly updated. The most frequently requested data are easy to find via a single state website. ■ Agencies coordinate with a central data team to plan data for publication. ■ State provides agencies with guidance for publishing data. 	<ul style="list-style-type: none"> ■ Application Programming Interfaces (APIs) exist, and are developed in consultation with stakeholders for high-value datasets. ■ State has a position(s) dedicated to supporting the open-data program across agencies. ■ Open data is part of the statewide data strategy. 	<ul style="list-style-type: none"> ■ State has a process to actively measure the use or impact of open data. ■ State has an open-data program with a statewide open-data manager and agency-level open-data stewards. ■ State’s open data is interoperable with local and federal open-data standards.

D3. At what level does your state make data available and understandable for different users (for example, community members interested in a map vs. university data scientists asking for an API)?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> Data staff manually prepare data when requested. <input type="checkbox"/> Much of collected state data is not available for analysis by agencies outside the collecting agency and is not shared. <input type="checkbox"/> State occasionally engages data users to better understand issues like data needs or privacy issues. 	<ul style="list-style-type: none"> <input type="checkbox"/> Data staff manually rework data for presentation in written reports for different internal and external audiences. <input type="checkbox"/> Not all state agencies have the same capacity to share data. <input type="checkbox"/> External users are engaged only in high-profile areas. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> State enables some internal users to interactively explore and report on the data available, however, the users may need substantial technical expertise or support from data specialists to do so. <input checked="" type="checkbox"/> State is beginning to build relationships with a wide range of high-impact external users to learn about their needs. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> State enables most internal users and some external users to interactively explore, analyze, and report on the data collected by the state. <input checked="" type="checkbox"/> State establishes and maintains relationships with external users and works to understand their needs. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> State carefully analyzes different audiences from the beginning when planning data form and medium of final presentations. <input checked="" type="checkbox"/> State shares and presents data so that it is easily and quickly interpreted without specialized support. <input checked="" type="checkbox"/> State consistently responds to external user needs as appropriate. <input checked="" type="checkbox"/> State demonstrates leadership on data standards, interoperability, and real time data exchanges to improve usability of data.

E) ANALYSIS: State provides skills, knowledge, and tools to enable data analysis.

Advanced states invest in data tools and data-integration efforts to encourage use of data in solving problems and making decisions..

E1. How much does your state invest in providing data analytical tools to state staff at various agencies?				
Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> Agencies or individuals procure data tools as necessary on an ad-hoc basis. <input type="checkbox"/> Data tools are used to meet agency-level operational requirements. <input type="checkbox"/> Analysts frequently spend time creating custom datasets to meet user needs due to inadequate analytical capability of tools. <input type="checkbox"/> State reviews data tools when there are digital service failures with a substantial negative impact on services (e.g., app or website is not working). 	<ul style="list-style-type: none"> <input type="checkbox"/> There are documented pathways to procure data tools and platforms that can be completed within a reasonably short period of time. <input type="checkbox"/> Most often data has to be exported from state data systems in order for analysis to be conducted in other tools. <input type="checkbox"/> Some agencies use analytical data tools (e.g., R, SAS) for basic data processing or descriptive statistical analysis. 	<ul style="list-style-type: none"> <input type="checkbox"/> Statewide user groups or communities of practice are organized around specific tools (i.e GIS, business intelligence, cloud data warehouses, etc.) <input type="checkbox"/> Some business intelligence tools may be disproportionately complex for the needs of the small, lower-maturity agencies. 	<ul style="list-style-type: none"> <input type="checkbox"/> Standard data-sharing, analysis, and visualization tools are made more readily available and supported to agencies to enable cross-training and skill development. <input type="checkbox"/> Agency-level analysts are able to produce effective, efficient outputs with tools aligned to their agency's needs. 	<ul style="list-style-type: none"> <input type="checkbox"/> Agencies can use analytical and data governance platforms (collections of tools, technologies, and processes) across the enterprise to enable the secure sharing, integration, and analysis of data. <input type="checkbox"/> Agencies use tools for delivering batch analytics and real-time streamed data. <input type="checkbox"/> State data leaders collect use cases for emerging tools to understand business cases. <input type="checkbox"/> State leaders invest funds into new data tools and technologies to meet data strategy goals.

E2. How much does your state invest in research, evaluation and data-driven decision making practices?

Lowest INITIAL AWARENESS	Low EMERGING PRACTICE	Medium LEARNING	High MANAGING	Highest MASTERING
<ul style="list-style-type: none"> <input type="checkbox"/> No documented use of data-driven practices or performance management. <input type="checkbox"/> Leaders in the agency have limited belief or experience in using data for research, analysis and evaluation. <input type="checkbox"/> State leaders do not understand the link between poor data management and risks to public services. 	<ul style="list-style-type: none"> <input type="checkbox"/> State publicly measures and reports data on performance goals. <input type="checkbox"/> Research and evaluation initiatives are selected and executed by agencies and sometimes there are statewide initiatives. <input type="checkbox"/> Agencies have taken ad-hoc steps to understand how data-management practices support public-service outcomes. <input type="checkbox"/> Data initiatives are carried out without explicitly linking to public-services outcomes that the data supports. 	<ul style="list-style-type: none"> <input type="checkbox"/> State provides centralized guidance for agency leaders to use data for performance management and decision making. <input type="checkbox"/> Leaders understand and communicate publicly about how good data management, evaluations of programs and research activities support public-service outcomes. <input type="checkbox"/> State resources are allocated for research, analysis, evaluation activities. 	<ul style="list-style-type: none"> <input type="checkbox"/> State agencies invest funds toward solving problems within programs that consistently do not achieve desired outcomes. <input type="checkbox"/> Leaders include updates to data-management practices and research and evaluation outputs in policy decisions to ensure that data directly supports positive outcomes. <input type="checkbox"/> Agencies use shared data from other agencies to inform internal performance goals and policy decisions. 	<ul style="list-style-type: none"> <input type="checkbox"/> Leaders have a clear understanding of the link between data management and public-service delivery outcomes. They proactively work to ensure that data initiatives are connected to the policy implementation. <input type="checkbox"/> Agency leaders use analytics and evidence to support decision making for all high priority activities. <input type="checkbox"/> State proactively works with cross-government networks and communities of practice to ensure data sharing does not compromise ethical use of data.

