

THE STATE OF PERFORMANCE ANALYTICS IN LOCAL GOVERNMENTS: AN INITIAL ASSESSMENT

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EXECUTIVE SUMMARY

The use of data and evidence for management has never been more important in the context of public agencies. Today, there is even greater pressure on local governments to use data and information to guide decision-making to a) increase efficiencies in operations, b) conduct more effective interventions to tackle problems, and c) develop innovations to address challenges and realize opportunities. Today there is a proliferation of information technology (IT) solutions that have opened up new avenues for public agencies to engage with data. Having robust performance analytics is an attainable goal for local governments. The word analytics is used to signify a move beyond just simply performance management or performance measurements which are more static in nature. Performance analytics, at its best, allows an organization to have real-time data of its resources, capabilities, and operations. It provides the ability to generate information that creates usable knowledge to drive real-time evidence-driven decision-making. While performance management has been a mainstay in the vocabulary of local government lexicon, the public discourse has little knowledge on how organizations are faring when it comes to their performance analytical efforts. In this report, we discuss our findings from an initial assessment of the state of performance analytics in local government. We conducted more than 28 interviews with local government professionals representing various functional roles from the city manager's office to finance, information technology, operations, and innovation, among others. In addition, we leveraged data from two previous projects – *Realizing the Promise of Big Data* and *Creating a Balanced Portfolio of Information Technology Metrics* – where we interviewed Chief Information Officers (CIOs) of local governments regarding performance metrics, data analytics, and evidence-driven management. We outline a maturity model to capture the state of performance analytics in local governments. Our maturity model is comprised of five stages – ad-hoc, reactive, appreciative, organized, and optimizing ad infinitum – that depict increasing sophistication in the execution of performance analytics with associated superior outcomes. We also outline what organizations should do to move up the maturity scale.

INTRODUCTION

Performance management is essential to the cohesive and systematic operation of an organization. However, performance management is often disjointed, ill-planned, poorly monitored or lacking proper leadership thereby limiting its potential impact. Organizations often report that performance management is conducted in a reactive manner driven by crises, failures, etc. Local governments continue to invest in a wide assortment of performance management initiatives such as dashboards, balanced scorecards, total quality management, and continuous performance improvement with the goal of increasing their level of evidence-driven decision-making in all facets of management and governance. In today's world of continuous budget reductions, performance management takes on an even more prominent role than ever before. Greater attention to transparency and efficiencies in operations is needed and organizations must continuously innovate to stay ahead of challenges and realize opportunities.

Over the last few years there has been a fundamental transformation in our ability to leverage data and deploy analytical tools. Today, the cost of collecting data continues to decrease and we have access to more devices, systems, and platforms from which to collect and draw data. There has also been a democratization

when it comes to access to sophisticated analytical tools. Accessing sophisticated analytical tools for cleaning, analyzing, visualizing, and interpreting data has become easier and affordable. As a result, there has been a surging interest in how local governments might advance the state of their efforts in performance management.

In this report, we provide an initial assessment of how local governments fare when it comes to performance analytics. Performance analytics, at its best, allows an organization to have real-time data of its resources, capabilities, and operations and the ability to generate information that creates usable knowledge to drive real-time evidence-driven decision-making.

METHODOLOGY

An invitation to participate was sent to select members of the Alliance for Innovation who expressed interest in participating in a performance analytics study in a previous project. An invitation to participate was also posted on the homepage of the Alliance for Innovation's website. Interested participants were asked to complete a brief survey that captured details on their 1) experience and interest in performance management, 2) performance management methodologies used within their organization, and 3) critical organizational challenges with regard to performance management. The respondents represented a broad spectrum of local governments (*i.e.*, major cities, mid to small sized cities, small towns, and counties) in both the U.S. and Canada.

We then interviewed over two dozen public managers. The primary focus of our interviews was on the state of performance analytics within the department of which the manager was responsible. We also queried managers on their knowledge of performance analytics across local government operations within their community and insights they had about performance analytics within the regional local government community. The managers interviewed represented a variety of occupations within local government operations ranging from city manager's office to information technology, finance, and organizational development. Each interview lasted approximately 45 minutes. Extensive notes were taken during each interview by a second member of the research team. The notes were analyzed and coded by key themes that emerged. Prior to each interview, we analyzed any secondary data (e.g. websites, press releases, strategic plans, memos, directives, etc.) that we could find about performance management activities for each community.

We also drew on data collected from two prior research projects – *Realizing the Promise of Big Data* and *Creating a Balanced Portfolio of Information Technology Metrics* – where we interviewed Chief Information Officers (CIOs) of local governments on performance metrics, data analytics, and evidence-driven management.

We constructed a maturity model based on our analysis of the data. The goal of the maturity model is to outline a framework to guide local governments to a) understand where they are when it comes to performance analytics, b) benchmark themselves against their peers, and c) identify tangible pathways to improve the state of performance analytics within their communities. We shared the initial draft of the maturity model with three city managers (who did not participate in the interviews or surveys) for feedback. Minor revisions were made based on feedback received.

PERFORMANCE ANALYTICS MATURITY MODEL

The state of performance analytics varied considerably between communities. We found communities that had strong leaders who championed a culture in which data-driven decision making was central to how resources were allocated, initiatives were approved, and directed the tone of conversations during staff

meetings. We also found cases in which the notion of analyzing data in the context of performance management was seen as a negative and evoked fears of being used solely for punitive reasons.

We also found significant disparities when it came to the use of IT tools. A handful of communities were exploring how to deploy innovative IT tools for performance management. Unfortunately, most communities reported that they were struggling with their current systems (e.g. could not get data out of them) or had relegated themselves to managing data across multiple spreadsheets. The value communities felt they got out of their efforts in performance analytics was most often a function of the maturity of their operations.

Maturity models come in all flavors. They have proven to be valuable frameworks for a range of industries from quality management to software engineering, education, and innovation management. A maturity model should enable organizations to 1) benchmark themselves against peers in the industry, 2) identify plausible trajectories to increase the sophistication of their capabilities, and 3) allocate scarce resources to improve existing capabilities.

To enable us to develop a performance analytics maturity model we had to break down the concept into more manageable chunks. At its core performance analytics has four distinct components – data, analytics, assessments, and actions. The ability to access relevant data from a wide assortment of sources of interest is vital to have the right inputs. Analytics is the ability to analyze and mine data to discover patterns, associations, and trends, i.e. to generate information. Information then needs to be assessed within the relevant contexts (e.g. programs, initiatives, departments, etc.) to create actionable knowledge. Necessary actions must then be conducted within appropriate timeframes in the most optimal manner so that organizational performance goals can be attained. Executing actions will then lead to further generation of new data and the cycle repeats. We now discuss how local governments fare at each component of a given level of maturity. Our maturity model has five levels – ad-hoc, reactive, appreciative, organized, and optimizing ad infinitum.

AD-HOC LEVEL

At this level, the organization does not have defined and standardized processes for performance analytics. Individuals are left to their own devices and have the responsibility of managing information they believe is needed to perform their task. Not all data sources of interest to the organization will be accounted for, leading to poor data content, volume, and variety. Ad-Hoc level organizations report significant difficulty when it comes to extracting data from systems for analysis. The organization has limited (if any) internal IT capacity for data extraction and analysis. These communities analyze data using basic analytical methods and tools. The focus of performance data analysis is largely centered on annual budgeting exercises. Senior management has not made evidence-driven decision-making a priority. Organizations cannot link and/or align performance measures and metrics either across departments or between departments in accordance with the overall goals of the organization and community. Assessments are incomplete and are seldom shared with others in an effective manner resulting in poorly calibrated actions. Actions executed are often based on hunches. There is limited provision for feedback in order to monitor the effectiveness of the action.

Performance management is not a leadership priority. These communities face significant challenges when it comes to the basics of defining metrics of importance. Champions for performance analytics are normally found in budget and finance roles only. Data is not used for decision making purposes because it's never been part of the culture, with the only exception being during annual budgeting exercises. However, even in these cases there is limited accountability for targets. Culturally performance analytics is viewed as a negative which generates fear. The dominant feeling is that any effort in this space has punitive consequences. Working with data is viewed as stressful and fear around data is high. There is a high variance in terms of departments that care about metrics; much of this has to do with the unique characteristics of each manager. Internal silos and compartmentalization of data is common. Data is given in summary rather

than raw format and there are artificially imposed restrictions that prevent individuals from extracting raw data for their own analysis. Benchmarking performance is not possible.

Step Up the Maturity Ladder: Local government communities at the ad-hoc level need tangible case studies, tools, and technologies to build momentum and educate people around performance analytics to increase the maturity of their efforts.

REACTIVE LEVEL

At this level, the organization has put in a basic performance analytics function. Often, these programs are launched as immediate reactions to external pressures. External pressures could come from a city council, the community at-large, etc., and many times these are due to an event that has drawn negative attention to the state of a given program. Local governments at this level have begun the process of developing analytical capabilities. The impetus for this effort is normally external pressures from outside stakeholders. The domains in which performance analytics efforts are being considered are those that already deal with high-levels of structured data, hubs within the organization (e.g. police and fire departments). Within silos, efforts are underway to build a performance analytics competence. Technology and knowledge capabilities on performance analytics are limited. Within the hubs that have begun to define processes around performance analytics efforts are limited due to the lack of good data.

Data cleansing efforts take up a significant amount of effort. In addition, when it comes to analytics, the focus is on rudimentary analysis and preparing of reports to meet requirements imposed by external entities. Hubs see value in the concept of building an internal dashboard to track metrics on which they are being evaluated on. The generation of ad-hoc reports is still challenging and takes up significant resources. There is limited IT support for analytics. While reports are shared, it is less common for units to share raw data and allow credentialed individuals to do their own analyses. In terms of assessments, analytics are often not used. Actions are mostly focused on putting out fires as there is limited interest in using analytics and assessments for long-term strategic planning. Limited benchmarking is possible. Feedback from actions is limited as well, and much of the time is not received in a timely manner to foster sufficient corrections and innovations. One of the challenges that local governments at this level report is the inability to translate internal data into terminology that matters to the general public. Across the organization, a culture of fear exists when it comes to sharing data with internal and external stakeholders. Overall, senior management has still not made evidence-driven decision-making a priority. Leveraging data outside of the hubs is based on how altruistic or benevolent people are. Most employees have limited time and resources to invest in analysis due to pressures to complete the daily job.

Step Up the Maturity Ladder: Local government communities at the reactive level need tools to scale their local performance management efforts. Case studies on how to build a culture where evidence-driven decision-making is valued are needed to increase the maturity of their efforts.

APPRECIATIVE LEVEL

Local governments at this level understand the value of creating an evidence-driven data culture. These communities have enacted programs to change the conversation around data and have explored various analytical tools. Local governments at this level have looked at their strategic plans to uncover output metrics of value when it comes to performance analytics. While silos still exist when it comes to data sharing, active steps are being taken to breakdown silos and increase communication and collaboration across units. These communities have begun to consider how they might invest in performance analytics by looking at hiring and/or re-assignment of staff, building collaborative alliances with external organizations, and/or hiring consultants. There is an increased effort to have conversations based on data and the value of data in terms of driving operational and strategic outcomes. Employees recognize the value of going beyond reports and actually getting their hands dirty with analytics. There is also a recognition of sharing data and visualizations

with the community to promote interactivity with data on key metrics. Efforts are underway to build clearly scoped out methods which are community-focused. In addition, instead of collecting metrics for a whole slew of activities these organizations have undertaken deliberate efforts to scale down the quantity of metrics to focus on quality metrics that signal progress in the community. A conscious effort is underway to support data champions as well as trying to remove variances across departments for their data and analytics management efforts. Leadership is vested in transforming the culture to one that values and appreciates the importance of data-driven decision-making. Cultural change is a priority for leadership when it comes to engagement with data and analytics. In addition, efforts are underway to find local stakeholders who can add value to the current performance analytics already in progress.

Step Up the Maturity Ladder: Local government communities at the appreciative level need case studies on best practices and training to bolster their analytical capabilities.

ORGANIZED LEVEL

Local governments at this level have a systematic and defined program underway that is focused on performance analytics. Most communities have focused their data analytical efforts on a specific challenge (e.g. understanding urban mobility or innovation in economic development). Senior management professionals are champions of these efforts. Dedicated units and/or teams exist that are focused on performance analytics. Leadership sets the tone by championing and investing in an evidence-driven culture. Teams are in place, perhaps even a small department, dedicated to the task of implementing the program. This is made possible by a management team and elected council that have recognized the value of data and made it a priority to use during deliberations and decision-making. Conversations consistently take place amongst leadership regarding data and they have championed its use. However, it should be noted that the organizational culture which values data is not dependent on any single leader as it is embedded within the organization itself. There is a focused effort on training employees to think more creatively about data and how to use data to complete their assignments in a more effective and efficient manner. Sources of data, important for decision-making, are clearly identified. Data is shared between units that need it and adequate security is in place to ensure that data is safeguarded from those that should not access it. Metrics of interest are clearly identified. The strategic plan of the community is used as a framework to identify metrics that can be used internally to measure performance and those metrics that need to be reported to the community. In addition, there is clear alignment between key performance indicators of units, the goals of the unit, and the aspirations of the community as laid out in the strategic plan. The emphasis is on building outcome-focused metrics that go beyond capturing outputs and inputs. Local governments at this level know how to track performance through a multitude of indicators. Taxonomies of metrics of various flavors are present. For example, some have classified their metrics into three categories – core, fundamental, and strategic. There is organizational capacity within IT units to support analytics and performance initiatives. Data is not feared, but embraced at all levels of the organization and by Council. Data driven conversations enable managers to identify root causes of challenges and work on solutions that require collaboration across departments.

Step Up the Maturity Ladder: Local government communities at the organized level need case studies on best practices, training to bolster their analytical capabilities, and peers to begin benchmarking their efforts and outcomes when it comes to performance analytics.

OPTIMIZING AD-INFINITUM LEVEL

Local governments have a fully functional performance analytics role that is consistently evaluated and enhanced through continuous improvement. Data sharing protocols allow for the exchange of data across departments. Analytical technologies and knowledge is available to discover latent relationships among data elements that enables the community to take an evidence-driven approach to tackling complex social challenges. A clear set of key performance indicators exist that capture not only the outputs of interest but also the outcomes they influence. A robust data-focused community engagement strategy exists that drives civic participation and co-production of innovation. Local governments at this level take a deliberate approach to evaluating the state of their performance analytics processes. On a routine basis data audits are conducted to ensure that data quality standards are being met. Organization-wide workshops and conferences promote the exchange of ideas on analytical tools, methods, and outputs. Experimentation with different methods to communicate metrics towards various ends is conducted. Feedback processes are in place for senior leaders, department managers, and the dedicated team/unit responsible for performance analytics to hear from internal and external constituents. Local governments at this level strive to reduce the cost and time taken to run analytics on-demand, i.e. to go beyond standard reports released at pre-defined time intervals. There is also a focus on making open data of value not just to the community, but engaging with it internally, i.e. across departments, programs, and initiatives.

Stepping Up the Maturity Ladder: Local government communities at the optimizing ad-infinity level need innovation partners that can help them push the boundaries of what is possible through performance analytics. These communities also need networks to learn from the experience of others at this level.

IMPLICATIONS

This report has outlined a performance analytics maturity model for local governments. A significant portion of the local governments we studied were caught between the reactive and appreciative levels. Smaller communities were more likely to be at the ad-hoc level due to resource constraints. In cases where local governments were at the organized level of maturity, they faced severe challenges getting their data management programs standardized and were investing significant effort to identify and focus on a manageable set of metrics.

It is imperative for the local government community as a whole to make performance analytics a serious priority. Our findings point to the fact that while most local governments recognize the value of managing performance, they have not made much progress on creating tangible solutions to advance it within their organizations. Organizations should develop their internal performance analytics capabilities before they seek to engage with external stakeholders on data focused efforts (e.g. open data projects). Unless performance analytics is made a priority and is supported through strong leadership and resources, chances are high that most local governments will falter when it comes to advancing their communities.

Performance Analytics Maturity Model					
	Ad-Hoc Level	Reactive Level	Appreciative Level	Organized Level	Optimizing Ad-infinity Level
Data	<ul style="list-style-type: none"> • Not all sources of data interest accounted for • Poor data content, volume and variety • Organizations report significant difficulty in extracting data from operational systems for analysis as limited internal IT capacity exists for data extraction and analysis 	<ul style="list-style-type: none"> • Lack of good data; data cleansing takes a significant portion of available time/efforts • Inability to translate internal data into terminology relevant to the general public • Limited IT support • Data not collected in a timely manner 	<ul style="list-style-type: none"> • Quality over quantity in terms of data and metrics • Efforts being put towards translating data into terms which the community can understand, visualize and interact with 	<ul style="list-style-type: none"> • Data sources for decision making are clearly identified to avoid unnecessary data collection; emphasis is put on building outcome-focused metrics which go beyond simply capturing outputs and inputs • The value of data is recognized by a management team and elected council which have made using data a priority during deliberations and in decision-making 	<ul style="list-style-type: none"> • A focus is put on making open data of value available to the community • Data is engaged with internally across departments, programs and initiatives
Analytics	<ul style="list-style-type: none"> • Organization does not have defined/standardized practices • Basic/traditional analytical methods and tools used to analyze data • Inter-departmental links in performance measures and metrics cannot be completed with accuracy 	<ul style="list-style-type: none"> • Organization has begun the process of developing analytical capabilities • Limited technology and knowledge capabilities exist with regards to performance analytics • Organization has a basic performance analytics function developed often as a reactionary measure to negative attention 	<ul style="list-style-type: none"> • Organization has begun programs to change the conversation around data and have begun to explore various analytical tools • Organization has begun to look at strategic plans to uncover output metrics of value with regards to performance analytics 	<ul style="list-style-type: none"> • Organization has systematic and defined program underway focused on performance analytics • Most organizations focus their analytical efforts on addressing a specific challenge (i.e. understanding urban mobility or innovation in economic development) 	<ul style="list-style-type: none"> • Organizations have a fully functional performance analytics role which is consistently evaluated and enhanced through continuous improvement • Analytical technologies and knowledge is available to discover latent relationships among data elements which enables the organization and community at large to take an evidence-driven approach to tackling complex social challenges
Assessments	<ul style="list-style-type: none"> • Incomplete assessments • Seldom shared with other organizations • High variance internally between departments • Inter-departmental links in performance measures and metrics cannot be completed with accuracy 	<ul style="list-style-type: none"> • Incomplete but in process • Limited interest exists in using analytics and assessments for long-term strategic planning • Siloed efforts are underway to build performance analytics competence 	<ul style="list-style-type: none"> • Increased effort to use data for driving operational and strategic outcomes • Push for data to be assessed for use in decision making and for sharing with the general public 	<ul style="list-style-type: none"> • Internal data collection and assessment techniques are consistent with one-another, making inter-departmental sharing possible and useful • Data is assessed such that it can be shared in a comprehensible manner with community members, while safeguards have been put in place to guard data from those who should not access it 	<ul style="list-style-type: none"> • Data sharing protocols allow for the exchange of data across departments • A clear set of key performance indicators exist that capture not only outputs of interest but also the outcomes they influence • A robust data-focused community engagement strategy exists which drives civic participation and co-production of innovation
Actions	<ul style="list-style-type: none"> • Poorly calibrated actions are taken based on data gathered • Actions are based on general guesses (data are not used for decision-making) • Individuals are responsible for tracking their own information • Data used primarily for annual budgeting exercises 	<ul style="list-style-type: none"> • Individuals generally have limited time and resources to invest in completing analyses • Actions are focused on putting out fires 	<ul style="list-style-type: none"> • Actions are being taken to reduce silos and increase communication and collaboration across units • Consideration has been given as to how organizations might invest in performance analytics by hiring and/or re-assigning staff or external entities (consultants) • Individuals understand the value of going beyond reports to get their hands dirty with analytics 	<ul style="list-style-type: none"> • Dedicated teams/departments have been created to implement performance analytics program • Focused effort being put forth to train employees to think more creatively about data and how to use it to complete assignments in a more effective and efficient manner • Data-driven conversations enable managers to identify root causes of challenges and work on solutions that require inter-departmental collaborations 	<ul style="list-style-type: none"> • Audits are conducted on a regular basis to ensure data quality standards are being met • Active approach is taken to evaluating the state of an organization's performance analytics processes • Organization-wide workshops and conferences are held to promote the exchange of ideas on analytical tools, methods and outputs • Experimentation with different methods to communicate metrics towards various ends is conducted

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