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LOCAL GOVERNMENT REVIEW
Putting Research Into Practice



SPECIAL SECTION OF PM MAGAZINE,
DECEMBER 2017

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LOCAL GOVERNMENT CYBERSECURITY IN THE U.S.:

Survey Tells a Cautionary Tale

In this paper we discuss cybersecurity issues and practices of U.S. local governments as identified in the first-ever nationwide survey of cybersecurity among U.S. local governments. ICMA conducted the survey in collaboration with the School of Public Policy, University of Maryland, Baltimore County, in 2016.

The reported levels of cyberattacks, incidents, and breaches may not come as a surprise, especially given the media's frequent coverage of cybersecurity generally. On the other hand, the large percentage of local governments that don't know the frequency of attacks, incidents, and breaches should, in our opinion, be cause for concern. Assuming one is less likely to take cybersecurity measures when unaware of the potential and real threats, then these data strongly suggest it's time for local governments to become better informed about cybersecurity so that they can achieve higher levels of security.

While insufficient funds deter local governments in their efforts to achieve cybersecurity, the survey results also suggest to us that many local governments can readily improve security with some basic tactics, such as adopting security protocols and raising cybersecurity awareness among all staff, elected officials, and the public. Perhaps more importantly, local governments that create and support an organization-wide culture of cybersecurity are likely to attain a more secure environment that reduces the

risks associated with cyberattacks and breaches of security. The cost of preventing breaches is undoubtedly less daunting than the cost of recovering from them after the fact.

As local government CIOs (chief information officers) and CISOs (chief information security officers) have told us, hackers are mainly thieves who attack organizations online, including local governments, primarily to access PII (personally identifiable information).¹ PII can be social security number, date of birth, and the like, or information such as medical and financial information linkable to an individual. The hackers then sell the stolen PII to other thieves or use it themselves to attempt to impersonate the persons whose identities they have acquired to steal money, goods, services, and other sensitive information (such as the emails of presidential candidates and sensitive corporate information, such as patents and product design data).

Hackers then use this information for "social engineering attacks," such as phishing and spear phishing, that try to trick gullible individuals into opening attachments or links that contain malware that will then exfiltrate sensitive information from the infected computer system. In phishing and spear phishing attacks, hackers send phony emails that appear to come from reputable organizations or from senders known to recipients in order to trick the recipients into revealing confidential information.

METHODOLOGY

ICMA sent the survey to the CIO in 3,423 local American governments with populations of 25,000 and greater, and 411 responded, for a response rate of 12.0 percent. The results are reasonably representative, although larger local governments and municipalities are somewhat overrepresented, and there is also some regional variation. Beyond this, however, we can be confident of the survey results because the respondents who answered the survey were, for the most part, IT or cybersecurity professionals (83.1 percent) and local government managers (15.8 percent). In other words, knowledgeable, expert local government practitioners—who can be expected to “know their stuff”—responded to this survey. You can find a summary of the survey data at <https://icma.org/documents/icma-survey-research-cybersecurity-2016-survey>.

CYBERSECURITY PROBLEMS

Clearly the most important cybersecurity problem that organizations confront is the constant threat of cyberattack. Hacktivism is an increasingly prevalent motive for attack. It involves the disruption of official government websites and online services as a form of protest, in order to bring attention to certain issues. After the death of Michael Brown in Ferguson, Missouri, and subsequent protests, in 2014 the hacking group Anonymous used distributed denial of service (DDoS) attacks on various police department websites, state revenue sites, and the state’s official website.² Specifically, Ferguson’s official website crashed, phones in city hall were unable to function,³ the Ferguson Police Department website was hacked, and police dispatch audio recordings of the incident were released.⁴

With the assistance of the FBI, one member of Anonymous was convicted of using a DDoS attack on the St. Louis County Police Association’s website to overwhelm its bandwidth and cause it to crash.⁵ Additionally, Missouri public officials, including those in local law enforcement, such as the St. Louis County police chief, were doxed—that is, their (or a family member’s) PII was maliciously published online.⁶ Michael Roling, Missouri’s chief information security officer, explained how the state level IT department, by enacting certain controls in defense, was able to quickly slow the onslaught of attacks as they continued to occur periodically throughout the grand jury proceedings of the police officer involved.

These defense services came at the considerable cost of \$150,000. “We have the resources, but we’ve seen some local governments across the country that don’t have the funding or have no way of quickly procuring services to fight these attacks, and their services are knocked offline,” described Roling.⁷

For the purpose of the ICMA survey, we defined **attack** as *an attempt by any party to gain unauthorized access to any component of your local government’s information technology system for the purpose of causing mischief or doing harm*. We used Verizon’s definitions of *incident* and *breach* (2015 Data Breach Investigations Report). According to Verizon, an **incident** is “Any event that compromises the confidentiality, integrity, or availability of an information asset.” A **breach** is “An incident that resulted in confirmed disclosure (not just exposure) to an unauthorized party.”

A sizeable percentage of the responding local governments (44 percent) reported that they are under attack hourly or daily (26.0 percent and 18.0 percent, respectively; see Table 1). While just over half of local governments reported experiencing incidents, only 9 percent said that they experienced them hourly or daily (4.1 percent and 4.9 percent, respectively). The pattern for breaches is similar to that of incidents, although only 24.2 percent of respondents indicated they had had any breaches at all. Fewer still reported breaches occurring hourly or daily (2.8 percent and 2.2 percent, respectively).

TABLE 1 || Frequency of Attacks, Incidents, and Breaches

	Attacks n=366	Incidents n=367	Breaches n=363
Hourly or more	26.0%	4.1%	2.8%
At least once a day	18.0%	4.9%	2.2%
At least once a week	7.7%	5.7%	1.1%
At least once a month	6.6%	10.4%	0.8%
At least once a quarter	4.6%	13.4%	3.3%
At least once annually	3.8%	16.3%	14.0%
Other	5.7%	15.5%	34.7%
Don't Know	27.6%	29.7%	41.0%

The most troubling results, however, are found in the large percentages of local governments that do not know how often they are attacked (27.6 percent) and experience incidents (29.7 percent) and breaches (41.0 percent). Sizeable percentages of local governments also do not know if the frequencies of attacks, incidents, and breaches have changed over the past year (25.8 percent, 27.7 percent, and 35.5 percent, respectively).

Although most local governments (88.8 percent) reported that external actors are responsible for attacks on their systems, nearly one-third (31.9 percent) do not know whether attacks were initiated by internal versus

external actors (see Table 2). One in five governments does not know if breaches to their systems occurred because of phishing or spearphishing attacks (20.5 percent; see Table 3). A majority of local governments (58.2 percent) said that they are not able to determine the types of attackers attacking their systems (see Table 4). Lastly, Table 5 shows that most local governments do not catalog or count attacks (53.6 percent); and about four in ten do not catalog or count incidents and breaches (41.9 percent and 39.9 percent, respectively).

TABLE 2 || Attack Initiated Externally or Internally

Average Internal		Average External		Don't Know		Total	
#	%	#	%	#	%	#	(n)
226	11.2%	226	88.8%	106	31.9%		332

TABLE 3 || Breaches Due to Spear Phishing Attacks

No Breaches (N/A)		Percentage Known		Don't Know		Total	
#	%	#	%	#	%	#	%
167	45%	128	34.5%	76	20.5%	371	100%

TABLE 4 || Knowing Who Is Attacking

Is your local government able to determine the types of attackers that attack your system?

Yes	No	(n)
41.8%	58.2%	368

TABLE 5 || Cataloging or Counting Attacks, Incidents, and Breaches

Attacks n=377		Incidents n=377		Breaches n=373	
Yes	No	Yes	No	Yes	No
46.4%	53.6%	58.1%	41.9%	60.1%	39.9%

These data strongly suggest that, on average, local governments in the U.S. are not doing the kind of job necessary to achieve high levels of cybersecurity.

BARRIERS TO CYBERSECURITY

The survey asked about barriers that might hinder local governments from achieving high levels of cybersecurity. Respondents ranked each barrier from “not a barrier” to small, modest, somewhat severe, or severe barrier; “don’t know” was also an option. Of 13 possible barriers (about support, training, staffing, cybersecurity awareness, end-user accountability, and the federated structure of local government), four barriers are immediately clear: Almost six in ten local governments (58.3 percent) said that **inability to pay competitive salaries** for cybersecurity personnel constituted a severe or somewhat severe barrier. Adding those who said “modest barrier” raises the response rate to 70.5 percent.

Next comes an **insufficient number of cybersecurity staff**, followed by **lack of adequately trained cybersecurity personnel**. The fourth highest barrier is lack of funds, with 52.3 percent reporting this as a severe or somewhat severe barrier, and increasing to 80.2 percent when adding “modest barrier” responses. Lack of money is directly related to the most serious barriers local governments face in their efforts to achieve cybersecurity, at least according to these local expert practitioners.

Funding constraints are also evident from another question (see Table 6). Of the five areas of cybersecurity investment, all but one had stayed mostly the same over the past five years. Investment in technology (hardware and software) was the one exception, with 58.8 percent of respondents saying investment had increased and only 6.6 percent saying it had decreased.

Local government respondents report that the following conditions are not barriers to achieving high levels of cybersecurity: lack of support from either top elected or appointed officials or local government department managers; the federated nature of local government; and the absence of end-user training.

ACTIONS TO IMPROVE CYBERSECURITY

Organizations have at their disposal a number of actions and practices that are known to help improve their levels of cybersecurity. We asked these local governments about 14 of those practices (Table 7).

Strikingly, for many of these actions, sizeable percentages of local governments responded that they **never** take them. These included, in order of frequency:

1. cybersecurity awareness training for citizens (71.4 percent never take them, with 20.6 percent saying that they do not know)
2. cybersecurity awareness training for contractors (61.9 percent never and 19.9 percent do not know)
3. cybersecurity awareness training for local elected officials (50.1 percent never and 13.8 percent do not know)

TABLE 6 || Cybersecurity Investment Changes Over the Past Five Years

INVESTMENT	n	Decreased Greatly	Decreased Slightly	About the Same	Increased Slightly	Increased Greatly	Don't Know
Technology (hardware, software, etc.)	347	2.3%	4.3%	31.1%	35.7%	23.1%	3.5%
Additional Staff	345	5.2%	6.4%	55.1%	20.6%	8.7%	4.1%
Higher Staff Compensation	343	3.2%	7.9%	63.0%	18.4%	1.5%	6.1%
Training for Staff	345	4.1%	8.7%	49.0%	25.8%	7.2%	5.2%
Policies and Procedures	345	2.3%	5.2%	47.8%	31.0%	7.5%	6.1%

TABLE 7 || Actions Governments Can Take to Improve Cybersecurity

ACTIONS KNOWN TO IMPROVE CYBERSECURITY	ACTIONS KNOWN TO IMPROVE CYBERSECURITY
Scanning and testing	Risk assessment
Technical security review	Cybersecurity exercises
Audit of cybersecurity practices	Forensic services after incidents or breaches
Cybersecurity staff training	End-user training
Cybersecurity awareness training for local government employees	Cybersecurity awareness training for local government elected officials
Cybersecurity awareness training for local government information technology personnel (not including cybersecurity personnel)	Cybersecurity awareness training for local government cybersecurity personnel
Cybersecurity awareness training for citizens	Cybersecurity awareness training for contractors

4. forensic services after incidents or breaches (42.9 percent never and 20.7 percent do not know)
5. cybersecurity exercises (40.8 percent never and 11.8 percent do not know).

When asked about other actions, by contrast, local governments appear to be doing a better job. The great majority (77.5 percent) undertake scanning and testing at least annually, and 38.2 percent scan and test at least monthly. Nearly two-thirds (63.3 percent) undertake risk analysis at least annually, and a similar percentage (63.5 percent) conducts technical security reviews at least annually. Nearly six in ten (59 percent) provide cybersecurity staff training at least annually, although one in five (20.9 percent) provide no such training.

CONCLUSIONS AND RECOMMENDATIONS

The portrait that these survey data present is one of local governments facing serious cybersecurity threats and appearing not to be fully able to provide the highest levels of cybersecurity. Although we have not yet verified this with more sophisticated statistical analysis of the data, we strongly suspect that less populous local governments

and those facing greater budgetary constraints are likely among those with the poorest cybersecurity capabilities and records. Another way of stating this is that small local governments are the most vulnerable. This said, however, if local governments, regardless of size, don't actively secure their IT assets, data, records, and especially their PII effectively and continuously, they can expect to have little or no cybersecurity.

The top three actions that survey respondents recommended for improving the security of their local governments against cyber threats are:

- greater funding for cybersecurity
- better cybersecurity policies
- greater cybersecurity awareness.

The next two most frequently mentioned actions are improved cybersecurity hardware and more cybersecurity personnel.

We certainly agree with those actions. We also believe that improving cybersecurity requires managers to create and maintain cultures of cybersecurity within their local governments. Managers need to lead this effort in cooperation with local elected officials, IT and cybersecurity

staff, department managers, and end users. Everyone must understand the importance of cybersecurity, must understand their individual roles in maintaining it, and must understand the do's and don'ts of cybersecurity practice. Likewise, everyone must be held accountable for their online behavior and actions. This is especially important because most breaches occur because of end-user mistakes, such as losing or having weak passwords or opening attachments or links that contain malware.

To create and maintain a **culture of cybersecurity**, local governments must adopt and implement relevant policies, procedures, and practices. These include but are not limited to:

- formal cybersecurity policies or plans
- formal cybersecurity risk management plans
- formal recovery plans
- rules regarding passwords
- formal policies around employee use of external and personally owned devices
- formal policies governing contractors and vendors who have any interface with the IT system.

In addition to these policies and practices, all end users (regardless of their location in the hierarchy) must receive appropriate cybersecurity training (not once but regularly) and must be held strictly accountable for their actions. For the most part, implementation of the policies and actions discussed here and in other sections of this paper can be undertaken without spending a lot of money.

Next we recommend actions that will require funding, but without which there is little hope of achieving high levels of cybersecurity:

- First, managers must ensure that their local governments have the proper cybersecurity technology (hardware and software) that is capable of (a) identifying, detecting, and cataloging attacks, incidents,

and breaches; (b) preventing most incidents and breaches; and (c) detecting the exfiltration of data and information.

- Second, managers must see to it that their local governments hire and retain the proper number of well-trained IT and cybersecurity staff. If the funding and staffing are not available internally, managers should consider outsourcing cybersecurity. Another option might be for managers to have their IT and cybersecurity staffs look into cybersecurity insurance. Other CISOs have told us that the mere act of applying for such insurance requires a risk management exercise that in itself will be valuable in identifying cyber weaknesses that can then be addressed.

In closing, we urge all local government officials to understand that cybersecurity is not, nor should it ever be, the sole or even primary responsibility of the IT and cybersecurity staff in their organizations. While technical staff are essential to cybersecurity, at the end of the day, elected and appointed officials have a significant responsibility for cybersecurity in their local governments—a responsibility that they should embrace and from which they should lead.



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ENDNOTES

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- 6 See endnote 3.
- 7 See endnote 2.



BY DAVID SWINDELL AND
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PURSUING INNOVATION IN Local Government

Survey results and interviews of thought leaders highlight organizational changes, use of performance measures, and infrastructure financing trends that suggest lessons for creating innovative organizations.

Organizational and service delivery improvements are perpetual goals of local government officials. The common phenomenon of organizational inertia, on the other hand, is a perpetual impediment to achieving these goals. With more than 22,000 municipal and county governments in the U.S., opportunities abound to learn from the successes and failures of those organizations experimenting with innovations.

One challenge to sharing this kind of learning is that there is no clear and shared definition of “innovation.” The focus has tended to be on the technological aspects of innovation, particularly in terms of telecommunications, big data, social media, and “smart” technologies. Furthermore, interesting cases of innovation are rarely linked to major themes in the management, public administration, or organizational psychology literature regarding how to encourage innovation in an organization.

This article embraces a broader concept of innovation that includes not only new technologies but also organizational changes and other modifications that may not be new to the profession but are new to a specific jurisdiction. Instead of relying only on case studies, we use data from a new survey of local governments on a range of innovations they have undertaken in recent years along with follow-up interviews of officials in the most innovative organizations, all informed by broader academic research.

We seek to identify specific practices these organizations embrace (e.g., internal consolidation and process changes) that encourage experimentation and a culture of innovation by focusing on general findings from the survey in three areas: organizational changes, performance measurement, and infrastructure financing. The results suggest opportunities and challenges for any local governments interested in changing their organizations.

METHODOLOGY

As part of the Enhanced Research Partnership with Arizona State University’s Center for Urban Innovation and the Alliance for Innovation, ICMA implemented the 2016 Innovations and Emerging Practices Survey. The survey went to 5,004 chief administrative officers of general-purpose local governments in the United States. The survey garnered a data set of 599 responses (an 11 percent response rate with a +/-3.9 percentage point margin of error). The results yielded a representative sample in terms of region of the country, size of jurisdiction, and type of local government (appointed CAO or elected).

The survey focused on five initial areas of inquiry: organizational change, performance data analytics, public engagement, regulating the shared economy, and infrastructure financing. Future iterations of the survey will repeat selected questions for tracking over time, while

others will be replaced with questions on additional areas of innovative practices.

Given the array of questions, we were able to construct a simple scale of innovativeness and rank the responding jurisdictions. We combined nine indicator questions (e.g., does your organization collect performance data) into an adjusted score. The more innovative practices a jurisdiction adopts (as measured by the indicator questions in the survey) relative to other jurisdictions that are not adopting them, then the more innovative it is. This captures both dimensions of innovation (new ideas to the field as well as new ideas in a given jurisdiction), regardless of the success or failure of the innovation(s). Thus, we ranked the jurisdictions and interviewed members of select jurisdictions' leadership to understand their innovations, how they encourage a culture of innovation, and what they perceive as the challenges to pursuing innovations. Highlights of our findings and observations about innovation follow.

ORGANIZATIONAL CHANGE

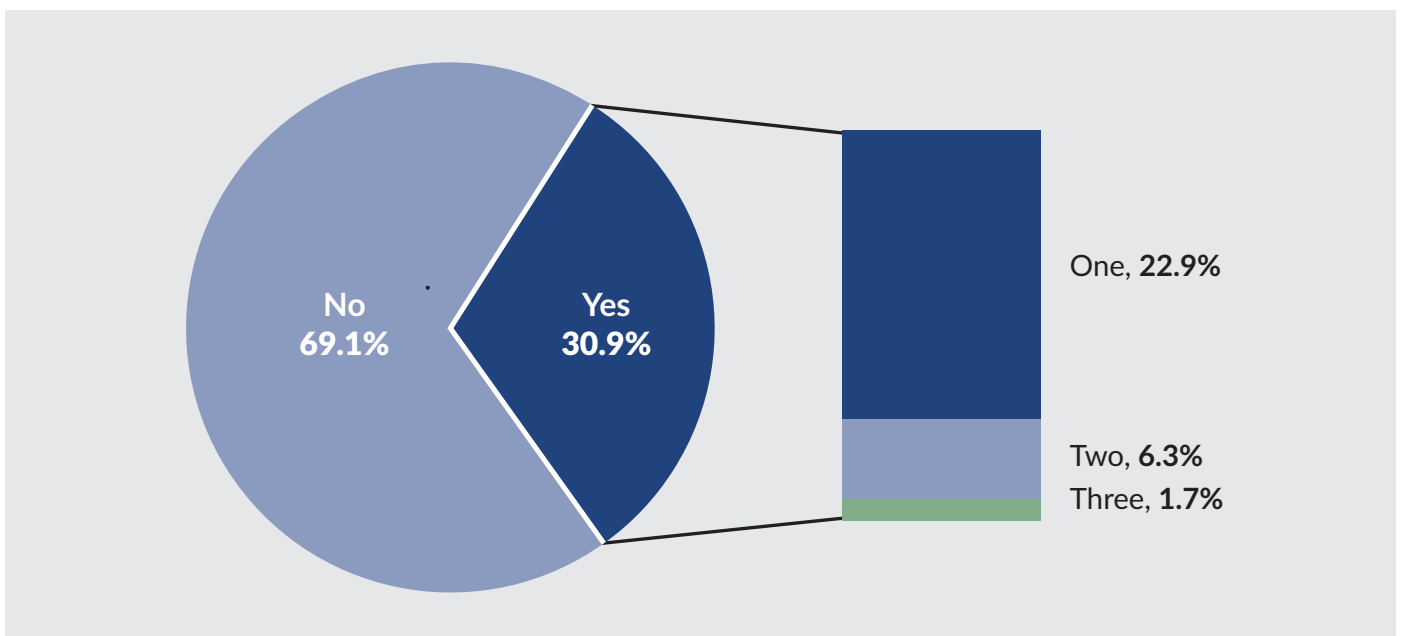
One of the most striking findings from the survey is the extent of changes occurring across the nation's communities. Almost one-third of all responding jurisdictions reported that they had undertaken at least one change in their organizational design or operations in the year prior to the survey, with several reporting more than one change. (See Figure 1.)

Of those jurisdictions reporting some type of structural change, 226 listed specific changes. These fall into nine general categories. Figure 2 illustrates the frequency of each. Most of the changes to the jurisdictions' organizational structures in the survey year relate to internal reallocation designs versus more outward-looking changes (e.g., outsourcing a service). These results indicate that local government organizations are far more dynamic than might have been expected in terms of adjusting to new realities and/or experimenting with new organizational arrangements.

Slightly less than half (47.5 percent) of local governments reported that they achieved success with their new practices in the three years prior to the survey. The sample communities reported 286 specific successes, which fall into 16 general categories. Structural reforms emerged as the most common, followed by service delivery improvements and collaborative service delivery arrangements. Interestingly, when asked about the unsuccessful initiatives they undertook in the three years prior to the survey, the same top answers emerge: structural reforms, service delivery improvements, and collaborative service delivery arrangements.

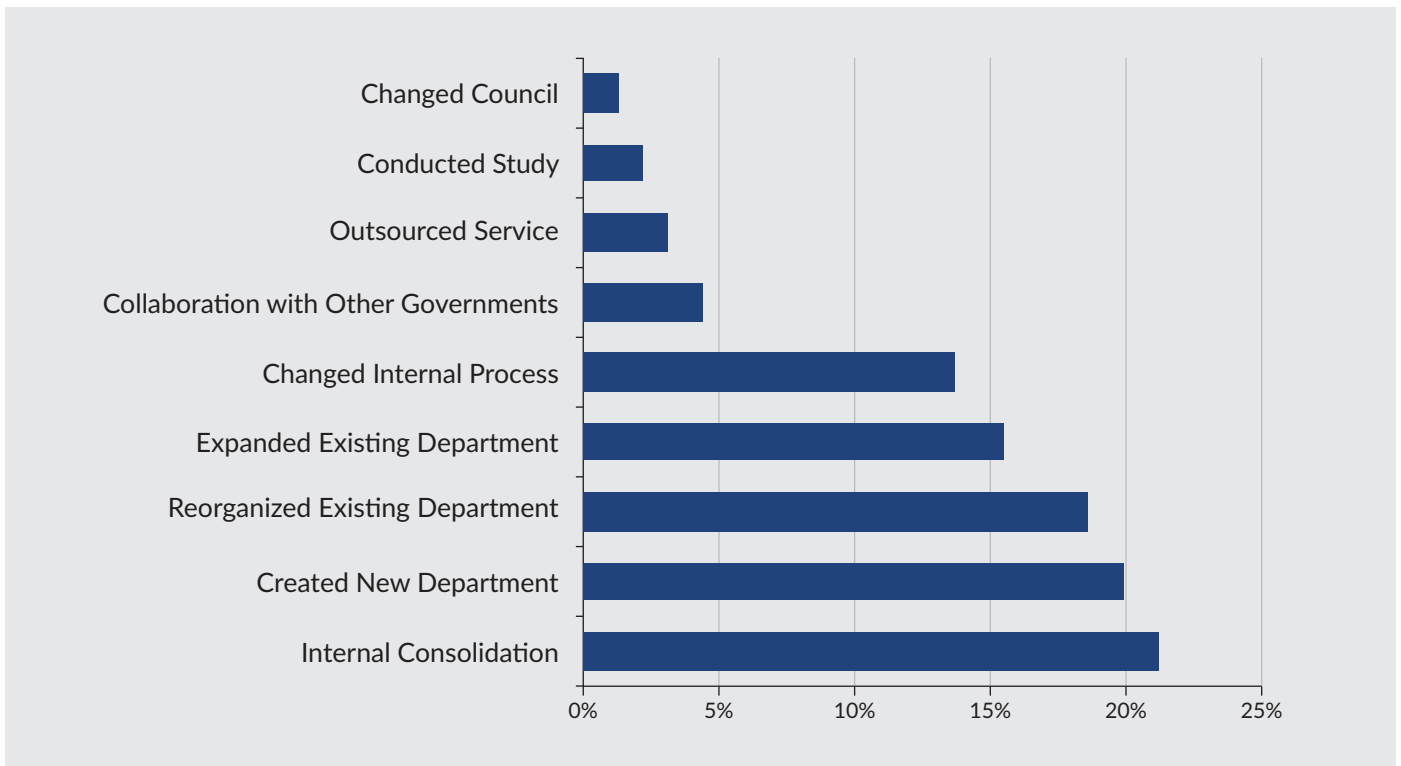
Finally, the survey asked respondents to identify the barriers they perceive as the primary cause(s) of unsuccessful initiatives. In general, the top barriers to success included staff resources, lack of good partners (for collaborations), and lack of public support. However, as Figure 3 shows, the factors behind the failed efforts vary

FIGURE 1 || Changes to the Organization in the Last Year



Note: n = 572.

FIGURE 2 || Types of Organizational Changes



Note: n = 226 responses (some jurisdictions listed multiple changes). Numbers are percentages of responses.

depending on the type of initiative. This means that organizational leaders need to be aware of the type of barriers that they will need to address in order to increase their likelihood of success. The results focusing on organizational changes illustrate, among other things, the continued need to provide assistance to jurisdictions undertaking these kinds of innovations in their organizations.

EXAMPLE 1: How Durham, North Carolina (population 252,803), encourages a culture of innovation

Durham is a mid-size council-manager city located in the vibrant Research Triangle area of North Carolina, and is also home to Duke University. In June 2015, the city launched a new strategic plan with one of its main goals to “[P]rovide professional management that encourages a culture of innovation, collaboration, and transparency to deliver quality services through an exceptional workforce.” One aspect of Durham’s new innovations is to initiate an “Innovation Team” with the goal of improving public services through collaborations between departments. Additionally, the city has launched its “Idea Starter” program. This is a structured effort to allow staff to test their innovative ideas and see if they are worth scaling up. This serves as capacity building through the development of prototypes. Durham currently has four

finalists in the piloting phase of its projects before a winner is announced for a full-scale project. Durham is teaching employees that their ideas can be funded and that they can successfully have an impact on the operations of their organization.

PERFORMANCE MEASUREMENT

Scholars and professional government advocates have championed the utility of performance indicators as a critical tool for determining service quality and informing performance management decision making. Many county and municipal governments have made performance measurement and benchmarking a norm in their organization, and a few have even taken those efforts further by using the performance information in service delivery decisions. However, even after decades of encouraging organizations to integrate performance measures into their standard operating procedures, the survey results indicate that this is far from being a common practice. Two out of every five jurisdictions (41.7 percent) report collecting some form of performance data, meaning about three out of five jurisdictions (58.3 percent) are not. Usage varies by jurisdictional characteristics. For instance, only one-third of jurisdictions below 50,000 in population (33.7 percent) report that they collect performance data, while 86.9 percent of larger

FIGURE 3 || Barriers Specific to Each Type of Failed Initiative

UNSUCCESSFUL INITIATIVE	MOST COMMON BARRIER TO SUCCESS
Structural reforms	Staff resources
Service delivery improvements	Lack of effective equipment
Collaborative service delivery	Staff, equipment, and elected officials' support
Technology as a communication tool	Lack of public understanding/support

jurisdictions report collecting such data. Jurisdictions with city or county managers are far more likely to collect performance data than their elected counterparts.

While this level of adoption of performance measures is less than might be expected after such a long effort to normalize it, significant barriers to further progress are apparent. For instance, the survey indicates that more than one in three of the organizations' chief administrative officers (37.2 percent) are not even taking advantage of information sources to learn about performance data and analytics. Figure 4 illustrates the perceived barriers among those jurisdictions that do not collect or use performance data. Future efforts to increase usage among non-user communities should focus on low-cost and less intensive data collection options that are more easily acquired today than in years past.

EXAMPLE 2: How San Diego, California (population 1,406,630), implements performance management

San Diego is the eighth largest city in the U.S. and has a mayor-council form of government. As a large city, it maintains an extensive budget and service delivery system. As noted in Mahoney and Newton's LGR article in the June 2017 issue of *PM* magazine,¹ San Diego has been leading efforts to adopt various smart city technologies such as their LED streetlight upgrade.

In addition, the city has recently undertaken a reorganization and created the Performance and Analytics Department to house the city's data analytic and performance management efforts (in addition to several other responsibilities). The department launched an open data portal to provide information to the public and increase transparency in their operations. The department is also "...responsible for strategic planning and performance monitoring efforts citywide in conjunction with the budget decision-making process to optimize city operations." San Diego's website also maintains dashboards the public and council can access to see how the city is performing relative to the performance goals specified in the city's strategic plan.

INFRASTRUCTURE FINANCING

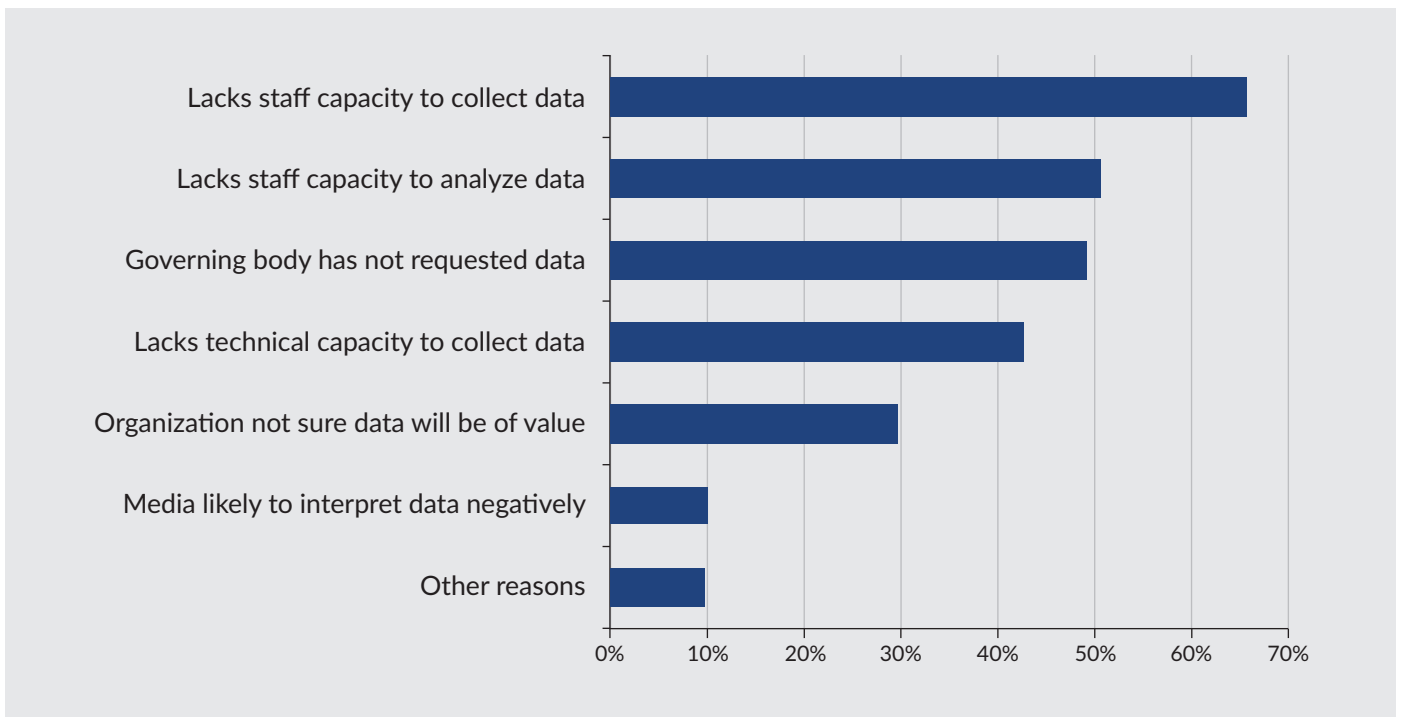
Another significant challenge facing local governments addressed by the survey is the accrued deferral of new physical infrastructure and maintenance of existing stock. Short-term deferral decisions can make sense in certain fiscal situations. Demands to address these deferred costs are escalating. Meanwhile, most jurisdictions are limited in their ability to consider opportunities to invest in innovative smart city infrastructure due to limited access to needed financing and capital. Approximately two of every five jurisdictions say their infrastructure is adversely affecting their community and that they need additional financing simply to maintain current quality levels of existing infrastructure. Targeted investments in select smart city technologies (e.g., smart street lights, smart water meters, etc.) can help communities update their infrastructure in a cost-effective manner while also leveraging data they can tie to performance analytics systems.

One in five jurisdictions indicates it has no additional debt capacity for meeting infrastructure needs, which was most often the case for communities of less than 10,000. Respondents in jurisdictions with the most severe infrastructure needs were also more likely to report expected opposition from citizens for new infrastructure debt.

General obligation (GO) bonds are the most common method of financing long-term debt in local governments. More than half of the responding jurisdictions reported that they have issued GO bonds, with larger jurisdictions more likely to issue such debt. The most common alternative to GO bonds is tax increment financing (TIF), followed by public-private partnerships.

One of the most promising newer tools getting attention among a growing number of local governments is the "green bond." While this tool is not currently widely utilized by local governments, the market for these debt instruments is currently looking for more to buy from local governments. This is a promising tool for many infrastructure projects involving various sustainability, resiliency, and/or carbon-reduction characteristics.

FIGURE 4 || Reasons for Not Collecting Performance Data



Note: n = 321 jurisdictions not collecting performance data. Numbers are percentages of responses.

EXAMPLE 3: How Purcell, Oklahoma (population 5,884), is using technology cost effectively to improve infrastructure

Purcell is a small community in central Oklahoma with a council-manager form of government. It has launched the installation of automated electric and water meter readers with a customer portal (i.e., smart meters). Purcell is trying to track outages and is working to improve its response and maintenance times using smart meter tablets. Purcell is becoming one of the leaders in this area in terms of its technology use, which is particularly noteworthy as a small community.

LESSONS LEARNED

The survey and interview data provide an indication of the array of innovations underway, as well as the challenges confronting those organizations that might want to pursue their own innovations. These challenges include organizational and cultural barriers, such as organizational resistance to change, resistant political environments, exposure from social media (opening innovations to uninformed criticisms), the responsibility of managers to insure a reasonable return on investment in new ideas, and inflexible budget cycle timelines.

The data highlight the need for concrete guidance to help local officials experiment and encourage their organizations to be less risk averse in order to improve performance. While the literature is filled with general recommendations for leaders, Thoreson and Muse’s article in the May 2012 issue of *PM* magazine² offers one of the few specific guides. They examined the traits of leaders and how those traits link to innovation, suggesting that visionary, inclusive, proactive, and organization-centered leadership is key to an innovative culture. The management literature also suggests that leaders in innovative organizations engage in participatory decision making, have clear plans, anticipate the environment, and put the needs of the organization over themselves.

The 2016 innovations survey, interviews, and literature yield these specific lessons that can further help leaders move in this direction:

1. **A culture of innovation is important but must be structured in practice.** Examples include cross-departmental teams specifically designed to identify innovation opportunities, or monthly innovation roundtables open to as many employees as practical.
2. **Incentivize employees to buy into and participate in the innovation culture** with rewards, including money, lunches, gift cards, recognition awards, extra

vacation time, a percentage of the savings generated by an innovation, or some combination of these.

3. On the other hand, **be sure there are no penalties for introducing an innovation and failing** (though after-action reports of failures are useful).
4. **Model innovative thinking from the leadership**, especially in terms of talking openly about innovations that failed. Encourage discussion of failures perhaps through a program like the Alliance for Innovation's "Fabulous Flops," where failed efforts are dissected but the attempt is celebrated.
5. **Structure time for creative idea generation and sharing of ideas** among employees and across departments. Organizational leaders must illustrate to council and the public that this ultimately increases productivity and is not wasted time. Management also needs to encourage an environment in which criticism is not taken as a personal attack.
6. Many of the successful innovative organizational leaders we interviewed **highlight the value of developing small-scale pilot programs** or tackling big changes in smaller stages to facilitate incremental

steps that will increase the likelihood of a positive return on investment from any new ideas.

7. Most literature and practices **favor positive reinforcement of openness and sharing** in order to tap the intellectual talent of employees across the board. In addition, some officials have structured incentives more formally by including innovation as a criterion on employee annual evaluations.



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LGR

LOCAL GOVERNMENT REVIEW
Putting Research Into Practice

DECEMBER 2017 SPECIAL SECTION

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POWERFUL STORYTELLING:

Leadership Narratives from UK Local Government Chief Executives

“Science, once the great explicator, garbles life with complexity and perplexity. Who can listen without cynicism to economists, sociologists, politicians? Religion, for many, has become an empty ritual that masks hypocrisy. As our faith in traditional ideologies diminishes we turn to the source we still believe in: the art of the story.”

– Robert McKee, Screenwriter

Storytelling is not typically found in the conventional repertoire of managerial leadership in local government, but we expect it will soon form part of the new orthodoxy. As Robert McKee argues, while many traditional forms of authority are declining, the power of the story remains. Many might even argue that the outcomes of recent elections in the U.S. and Europe are an indication that the ability to communicate with straightforward emotion eclipses bureaucratic discourse.

This article does not deal with political leaders but, rather, explores the narrative and storytelling practices of a group of senior public administrators, namely, local government chief executives in the United Kingdom.

What is clear from our research is that managing a local government is a complex business. Robert Chia, research professor in management at the University of Glasgow, talks of the “blooming buzzing confusion” of managerial life, and in local government this is conducted in full political glare. In the center of this heat, noise, and motion, appointed council chiefs are expected to plan services and ration resources, implement policy and manage performance. One way that they do so is by telling stories.

We found that storytelling forms an important part of the way in which appointed council chief executives lead, learn, persuade, establish credibility, network, and form relationships. In this article we present our findings across four main themes:*

- Inviting an emotional connection with public service
- Making sense of organizational realities
- Provoking reflections on practices and assumptions
- Managing political relations with council leaders.

METHODOLOGY

Our research design is rooted in long-term engagement with local government chief executives. Our wider professional and personal interactions with the network enabled us to undertake this study. In particular, Bennett’s previous role as a director of the Society of Local Authority Chief Executives (SOLACE) gave us the opportunity to launch the study.

*The themes are drawn from a coded analysis of transcripts of our interviews. Full details of the coding methodology can be found in Orr and Bennett (2017; see endnote 2).

Our empirical method stems from work undertaken between 2008 and 2015 during which the authors jointly interviewed 80 local appointed council chief executives in different types of UK councils, including unitary authorities; county, metropolitan, and district councils; and London boroughs. The organizations of these executives spanned different geographic locations across all four nations of the UK.

Our approach to data exposure was not to produce a scientific claim to representativeness but to ensure that a plurality of organizations was included. Our meetings were purposeful conversations (Alvesson, 2003)¹ with research participants whom we recognize as co-creating the encounter. We invited interviewees to respond to a range of story-, narrative-, and leadership-themed questions about themselves and their council, colleagues, profession, and practices, such as “Do you recognize storytelling as part of your day-to-day leadership practice?” and “How and why do you use stories?”

LEADING THROUGH STORIES

This article presents a concentrated overview of some of the key findings of our research, which is discussed in more detail in the *Public Administration Review* (Orr and Bennett, 2017)² We let the stories speak for themselves, along with practitioners’ explanations of their own practices. That is, we not only examine how chief executives use stories, but also explore why they do so.

THEME 1: INVITING AN EMOTIONAL CONNECTION AND COMMITMENT TO PUBLIC SERVICE

The Dinghy Story

“People say local government doesn’t have any power. I don’t buy that. We have incredible power in the eyes of local people. I remember when the city flooded, the whole town center was under five feet of water. As chief executive I was out on a dinghy with three other council workers, with lifejackets and council badges. And a woman was hanging out her window in distress, with her crying baby. We pulled up below, and Andy who was at the front of the boat stood up and stretched up his arms and said ‘It’s OK, hand us your baby down.’ And she did.

“The mother trusted us because we were from the council. That’s the level of trust people give the council—that someone will hand over their baby to us. Don’t underestimate the power and legitimacy of local government.”

The opening vignette is a story Bennett heard a chief executive tell his senior colleagues and, at other times, new recruits in developmental sessions. It offers a rallying call, a reminder of the importance of their collective efforts. It shows the importance of council workers and

invokes their special relationship with the public. The drama of the story—the rescue of a babe in arms—produces an emotional response and casts the role of local government in a warm light. It provides a counterpoint to any gloom about the esteem of councils. The storyteller is worried that staff have developed an unhelpful sense of local government’s decline. The story emphasizes the importance of relationships: team work, trust, and the council’s standing in the eyes of the public. Even the council’s logo is a signifier of reliability. Finally, the story features a chief executive showing himself to be proud of working with others, on the front line, at a time of crisis.

What Do Chief Executives’ Reflections Tell Us About This Practice?

Our interviewees spoke often about how stories lend themselves to talking about the mission of their organizations. Stories can be harnessed in the service of the public. One chief executive explained the idea in this way: “The purpose is to win people over to altruism . . . connecting people with a higher purpose.” Another chief executive explained how stories create an emotional and motivating connection: “Leadership requires storytelling. It requires empathy, it requires imagination and pictures. . . . without that, we can’t manage people. We can get their compliance, but we can’t ever get their commitment.” His explanation of his practice captures how stories allow chief executives to project empathy, to connect emotionally, and to encourage commitment to shared goals in ways that traditional authority models cannot achieve.

THEME 2: MAKING SENSE OF ORGANIZATIONAL REALITIES

The Naked Story

“I remember one Sunday morning I was in the [club-house] changing rooms, totally exhausted, after a morning on the bike with the club. Just out of the shower when my mobile rang. It was Tony Craddock [senior government figure and local MP; not his real name]. I answered, stood there dripping wet. He told me what was on his mind. . . . I spoke discreetly with him, as best I could, for a couple of minutes, assured him we’d deal with it. There I was, butt naked, on the phone to the minister, surrounded by 15 other guys from the club, from all walks of life, all getting changed and exchanging the usual banter. You’ve got to be ready for that kind of thing at any moment. This is the kind of organization we are.”

We see the chief executive “off duty,” immersed in locker room chatter and enjoying what should be some down time. Instead, the story suggests how a chief executive is always “switched on” and reachable, even when stripped, literally, of the day-to-day trappings of leadership. Through the telling of the tale, the chief executive is enabling col-

leagues—in this case, his senior managers—to understand the reach of the job. The story also communicates the idea of an organization that is accountable, scrutinized at the highest political levels, and expected to be able to act to fix things. The chief executive is framing an understanding of organizational realities—this is how it is.

What Do Chief Executives' Reflections Tell Us About This Practice?

The concept of the storytelling organization is firmly embedded in the chief executives' views of their role and setting. As one chief executive reflected, "Storytelling is enormously powerful. When you ask people about the council, staff and councilors and residents will describe it in stories, not in philosophical constructs. We understand an organization through the stories that we tell."

Or, as another reflected, "I'm very aware of the value of storytelling. In my current role, you are required to be the 'narrator in chief,' both to the organization and to the wider world." In this case the chief executive sees himself not as the commander in chief at the top of the hierarchy, but the narrator in chief, someone who must lead by constructing and sharing a view of the world in which the organization exists.

Our interviewees emphasized their leadership role in helping staff to interpret the turbulent environment of local councils. Many of our participants agreed on the power of stories to resonate more persuasively than other kinds of management data. As one put it: "How many times do you see a really good presentation of all the facts laid out before a committee, then one person comes along with a story, and the argument is lost? The story just undermines every single fact—the human-interest story just does it."

THEME 3: PROVOKING REFLECTION ON PRACTICES AND ASSUMPTIONS

The Bench Story

"When I first arrived, I met a woman sitting on a bench crying, waiting to get in the building because it was shut from nine to ten o'clock because the staff were stressed—they'd done a staff survey. The fact that we had sent people notices seeking house re-possession . . . was not considered a high enough priority for us to open our doors.

"I tell this story when I'm reminding people why is it we do what we do—'let's stay focused on our customer.' But it's an event that moved me, that taught me something about where the business was at. It moved me and it taught me something. So I share that story because it might teach other people something."

In this story the chief executive talks about the potential of stories to help colleagues rethink their understanding of their roles. He observes that such stories may not represent grand managerial visions. They may even seem

mundane, yet they can be profoundly challenging. The telling of this story is not a one off, but something that the executive does frequently. The story has an unsettling purpose: It invites staff to question the extent to which their practices privilege the workforce over service users.

What Do Chief Executives' Reflections Tell Us About This Practice?

One chief executive offered a philosophical explanation of how he tries to re-shape the assumptions held by staff. He deconstructs opposing points of view, re-presents them, and offers an alternative, more in line with his own agenda:

"I've always thought that to convince someone of anything you probably need to articulate their truth in a way which is probably better than they could. So you'll try and identify the truth of the other, whatever it is, articulate it for them, and then say why it's wrong and why there's another truth that's better. . . . But if you just say 'No, I believe in this, er . . . just follow me,' you've got no chance. I think you've got to understand where people are at, and you've got to try and articulate that and say why where they're at isn't good enough."

This analysis is a wholesale critique of the traditional hierarchical model of leadership: You cannot just tell people what to do. Instead, the chief executive describes his experience of putting himself in relation to others and of trying to generate a joint critique of practice and a shared way forward. His aim is for colleagues to agree with the need to change. But there is an appreciation that arriving at a mutual understanding is an emergent process accomplished in a network of perspectives. Unsettling some assumptions along the way is seen as a necessary part of the job.

THEME 4 - MANAGING POLITICAL RELATIONS WITH COUNCIL LEADERS

The Homer Story

"A senior director and I wrote a book that we sent to the publishers in February. In May, after the elections, this guy, Homer, became deputy leader of the council, and although he had very little formal education, he was very astute. So we started feeding Homer ideas, involving him in discussions, and he was a very quick learner. In July our book was published, and we gave Homer a complimentary copy. He came back to us a few days later and said he was 'very pleased to see that we'd picked up his ideas!' We'd sent the book to the publishers in February, long before Homer was on the scene, but he genuinely believed that they were his ideas and that we'd used them in our book! I tell that as a story about how although visible leadership is very important, so is invisible leadership. Sometimes people will only be led if they think it was their idea in the first place."

This is a vivid story about relations with politicians, one which the chief executive uses in staff development settings. He recounts the tale to demonstrate the subtle art of leadership influence. In the story the chief executive is seen developing the strategic awareness of the political leader through talk and reading. The story suggests how ideas emerge and are co-produced.

WHAT DO CHIEF EXECUTIVES' REFLECTIONS TELL US ABOUT THIS PRACTICE?

In managing political relations with council leaders, the importance of wider organizational narratives comes to the fore in the chief executives' reflections. As one chief executive explains, "This is not something you want to be ostentatious about, but you're also 'doing the narrative' back to the politicians. When I arrived there was no habit of the chief exec going to political groups to talk about what the challenges were. And we've been doing a lot of that . . . and the focus is the narrative—getting them [council leaders] to realize where they are, where they've been, where they're going."

In this reflection we see the chief executive talking about the importance and mechanics of influencing the political narrative. The process must be partly hidden from view, because to be too open about it would doom it to failure. In these accounts, chief executives emerge as co-authors, sounding boards, co-developers of strategy, challengers, and co-interpreters of political vision.

FINAL THOUGHTS

Our research suggests that chief executives are not in positions of hierarchical control over the discursive domain. Stories fulfill wider roles as part of the timeless dynamic of everyday social encounters. A multitude of stories and storytellers are at large at any one time (Orr, 2014).³ A different image for the managerial leader therefore emerges. Rather than seeing heroic decision makers in full control of the levers of power in their organizations, we see the complex interrelationship between chief executives and others. Leadership is not given by a title or an office but emerges from the interdependence of those relationships.



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