Data Management for Local Government: Open Data Policies and the Coproduction of Public Services

PPPM 633: Public Management Final Report

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Introduction

In today's information age, data is easier than ever to produce, access, and analyze, and has great potential to inform decision-making in both the private and public sectors. The potential for data to enhance decision-making in the public sector has increased interest in the issues of data management and service delivery for local governments. While larger cities may have the resources to invest substantially in data management, smaller jurisdictions often struggle to manage the enormous amount of data available and to incorporate it into their policy-making process. Do better data management policies enhance decision-making, enhance service delivery, or increase public involvement in local governance?

This report examines the best practices in data management for local governments, specifically how data management policies, such as open data policies and citizen coproduction of services, may inform parking policy issues at the City of Eugene. The report will outline our research team's methodologies including a review of the body of literature for these topics, interviews with local government managers at the City of Eugene, and case studies of open data policies and citizen science policies of neighboring cities. The report will conclude with policy recommendations for the City of Eugene to incorporate effective data management policies and to improve decision-making on parking policy issues and beyond.

Methodology

The Public Management research team engaged in a variety of research methodologies to inform our recommendations for the City of Eugene. These included a literature review, interviews with local government officials, and case studies of nearby cities' open data policies. First, the literature review explores the body of knowledge on the topics of open data policies and the coproduction of public services. Next, interviews were conducted with two officials at the City of Eugene including leadership from the Transportation Planning team and Parking and Administrative Support Services. Finally, case studies were conducted on open data policies of the City of Portland and the City of Seattle. An additional case study was conducted on a citizen science data project produced by students at the University of Oregon regarding City of Eugene parking trends.

Literature Review

When the internet became widespread in the U.S. in the 1990s and early 2000s, many scholars of public administration predicted a far-reaching transformation in the way that governments interact with their constituents. However, research by Norris and Reddick showed that this predicted transformation did not materialize (165). Still, the research conducted by the duo confirmed that over 97 percent of local governments in the U.S. provided some form of electronic service "to provide citizen access to local government information" (170). Despite this reported desire to improve citizens' access to information, the top barrier reported by local governments to providing electronic services was limited financial resources, followed by a lack of IT staff (171). However, despite these outcomes, Norris and Reddick did report that "fewer governments are reporting barriers to adoption" in 2011 compared to 2004 when it came to implementing electronic and online tools to improve interaction with citizens (173).

This study by Norris and Reddick provides an interesting framework in the context of e-government, smart cities, open data, and coproduction of public data. A local case study that intertwines a number of these threads involves parking data for residential neighborhoods collected by undergraduates at the University of Oregon in the winter term of 2019. This survey contains a wealth of information that could be used to implement or alter local policies for the City of Eugene. However, with raw, primary data such as this, there is the question of how to most effectively use it in the context of public management. A literature review of the following topics in relation to this matter follow below. Some of the topics related to this issue can be divided into further subtopics, namely, open data policy, and the coproduction of public services.

Open Data

Janssen et al describe the benefits of having raw data from public organizations made open and available. Some of the benefits include generation of wealth from downstream outputs, provision of necessary information for policy-makers, and increased involvement of the citizenry, increasing public participation and adding analysis capacity for governments. The authors also note some of the barriers that prevent public agencies from adopting an open data model. These include institutional barriers such as risk-averse cultures

and poor quality of data. Finally, the article points to common myths associated with open data and government agencies. Myths include that publicizing data will automatically yield benefits, that all information should be unrestrictedly publicized, that every constituent can make use of open data, and that open data will result in open government.

On the topic of open data, Conradie et al worked with six municipal-level agencies in Rotterdam, the Netherlands, and explored the concept of data release to the public. A number of concerns about data release from the agencies were noted by the authors, ranging from the fear of false conclusions reached by the public to low priority by local government. The authors note that even the concept of data release is new for most local governments, and this may mean that there are no processes in place to handle data requests, which may cause issues. One specific item that the authors note in the move towards open data is that it may be helpful to identify agencies that hold data with non-personally identifiable data, such as "the location of objects in the public space,"—parking data is one such example—and move forward in developing processes to enable the release of this data.

Coproduction of Public Services and/or Data

Similar to the issue of open data that some local governments are wrestling with at the moment, Bovaird writes about and presents case studies on the emerging trend of the coproduction of policy and service by public managers, along with users and community groups. Bovaird defines coproduction as the "provision of services through regular, long-term relationships between professionalized service providers (in any sector) and service users or other members of the community, where all parties make substantial resource contributions." The author identifies the range of professional-user relationships in the public coproduction space. On one end of the spectrum are traditional top-down approaches to policy making and implementation, and on the other end, the communities/users are the sole deliverers of service with no professional input in planning.

By looking at many case studies, the authors developed lessons in public service coproduction. Lessons include: "coproduction means that service users and professionals must develop mutual relationships in which both parties take risks," public accountability is at risk of being diluted, and there are concerns about

who gets to participate. The author provides two types of coproduction: governance drivers and logistical drivers. Governance drivers occur when service users and communities play a role in policy making, while logistical drivers occur when coproduction focuses on service delivery, rather than the creation of the service or policies guiding it. Bovaird identifies some limitations in coproduction, attributing them to differences in values, incompatible incentives, unclear divisions of roles, free-riders, burnout of users or community members, and undermining of the capacity of the third sector. The author concludes that coproduction of public services is often underestimated in its ability to increase the effectiveness of public policy.

Tulloch et al. assert the vast potential of citizen science, saying that "the popularity and scope of citizen science appears almost limitless." They note the mutually beneficial nature of citizen science, offering citizens an opportunity to contribute to scientific work, and scientists a cost-effective way to collect a great amount of data. Focusing on bird monitoring projects, Tulloch et al. examine the elements that contribute to a citizen science project's success. Key elements include: project leadership and coordination (in the form of regional coordinators), enhanced communication between researchers and volunteer organizations, clearly defined project goals, and publishing resulting data for free and easy public access.

Clark et al. build upon the importance of citizen involvement in data gathering and production in their examination of crowdsourcing, a strategy in which the public "is used as a source of labor, energies, resources, and ideas." The authors note that today's increasingly connected digital landscape allows for easier crowdsourcing than ever, and that these resources, though less stable than traditional bureaucracies, have the advantage of being more flexible than traditional data-gathering or data-producing public organizations. Interestingly, the key concepts identified by the authors for successful crowdsourcing often align with those identified by Tulloch et al. for citizen science, including the importance of having clear objectives, consistent engagement through project leadership and other investments, and nurturing relationships through communication and responsiveness. It seems that these qualities would be valuable in any project that turns to crowds of volunteers to collect data and generate ideas.

While most studies reveal benefits of open data policies for governments, there appears to be some reluctance to fully embrace open data on a large scale. This may be partially due to the fact that open data

requires clear policies and funding to collect it and make it available. Coproduction of public services may be one way to work in tandem with citizens to produce public and/or open data. Meanwhile, performance management in the public sphere seems to be in a position where it can take cues from the coproduction of public service for more meaningful metrics.

Key Findings

City of Eugene Interviews

To obtain a complete understanding of the operations of city parking and traffic management, our team interviewed Rob Inerfeld, City Transportation Manager and Jeff Petry, City Parking Manager. The interview process revealed that the city didn't have an open data plan, but they spoke of the city's recent adoption of a Vision Zero policy and accompanying online map, on which citizens can report issues with street safety issues, road hazards, and other issues they believe need addressing. The issue with Vision Zero is that the public hasn't adopted the platform—since Vision Zero began back in October 2016, they've amassed only 43 entries in total. Further research is required to evaluate potential relationships to describe the reasoning people have chosen to not use the platform. Overall, Vision Zero is the city's failed response to the lack of an open data plan.

Eugene Parking Data

In our interview with Rob Inerfeld and Jeff Petry, they revealed that the city of Eugene collects data for all on-street metered parking, as well as in parking garages managed by the city. However, the city basically has no data about on-street parking in residential neighborhoods, and residents have raised concerns that if housing density increases in Eugene, on-street residential parking will have no further capacity to handle the additional demands.

With these facts in mind, Professor Ben Clark at the University of Oregon assigned 140 undergraduates to collect parking data from six neighborhoods located around the university in the winter term of 2019. This yielded approximately 9,000 points of usable data. This collection of on-street parking data during morning

hours, afternoons and evenings, on weekdays and weekends, from residential neighborhoods showed that current parking numbers are nowhere near capacity. However, the question that remains is how the city should effectively use this data to inform policies and projects in the future.

Open Data Policy Case Studies

To learn more about open data policies, we examined two nearby cities with open data policies: Seattle and Portland. According to the Seattle website, their Open Data Program has four goals: to increase residents' quality of life; increase transparency, accountability, and comparability; promote economic development and research; and improve internal performance management. The data is divided into several categories, including city business, community, education, finance, land base, permitting, public safety, and transportation data. The city also takes the concept of open data a step further than many by offering data that's presented in formats beyond the traditional table presentation, such as maps, dashboards, and animations, and by providing meaningful context to data. By acknowledging the potential drawbacks of offering dry data or data that lacks context, Seattle attempts to address some of the open data pitfalls identified by Janssen et al and Robinson et al. Seattle's open data policy includes a tenet of "open by preference," which asserts that city data will by default be made available to the public unless there is a privacy or security reason to keep it private. Based on this principle, city departments are asked to consider which data they will make available to the public when planning new projects. By building this consideration into a Seattle employee's process, the city attempts to address the concern of open data implementation raised by Conradie et al.

Looking at Portland, the city adopted an Open Data Ordinance to establish an Open Data Policy and Open Data Program in 2017, citing the many benefits that open data will offer the city. Although there may be a large quantity of data available to the public, the city doesn't appear to have spent as much time developing the presentation of the data, thus making it less browsable and less accessible. Datasets are accessed through an outdated web page entitled "Maps, GIS, & Open Data," with an apparent focus on maps and GIS information, to which other types of open data come second. By clicking on an obscure link in a menu on the webpage, members of the public can access "CivicApps.org Open Data," which reveals itself to be the unlikely home of all other datasets. On the CivicApps page, the savvy reader can find datasets by sorting through a

primitive filter feature, but the searchability and navigation features of the website are limited, and it's difficult to find data without having a specific dataset in mind. The datasets appear to be largely raw shapefiles and CSV files—the tabular data that Seattle has declared itself as having evolved past. It appears that Portland has committed itself to the implementation and integration of open data in its city government, but hasn't yet reached the level where data is easily accessible and findable by all.

Recommendations

Increase Engagement with Availability of Resources at the University of Oregon

The City of Eugene can increase its capacity to manage data effectively by leveraging opportunities to coproduce data and engage meaningfully with citizen science programs. The parking data collected by the University of Oregon undergraduate students, examined in this report, can serve as a model to gather information where the City may not have the resources to engage fully. Many resources exist at the University of Oregon, including students that have a passion and curiosity for government, transportation, data analytics, and many other areas that are of interest to the City. One resource for local governments at the University of Oregon is the Oregon Policy Lab. The Oregon Policy Lab uses access to academic research and best practices, the expertise of UO faculty, and the curiosity of students to conduct research projects and add capacity to local governments in Oregon. Our team recommends exploring future data management and citizen science projects with the Oregon Policy Lab, among other resources at the University of Oregon.

Create an Open Data Policy

We further recommend that the City of Eugene adopt an open data policy. This will further enhance the opportunities for co-production and crowdsourcing by allowing the public to have access to the vast wealth of information collected by the city. The political/social, economic, and operational/technical benefits of open data are well-documented (Janssen et al., 2012). However, effective management of open data is key to ensuring its usefulness (Janssen et al., 2012, Robinson et al., 2008, Conradie et al., 2014). To ensure that the city's open data policy is strategic and effective, we recommend following guidelines that have been developed by

experts in the field. "The eight principles of open government data," as written by 30 open government advocates from a diversity of backgrounds, define effective open data as: complete, primary, timely, accessible, machine processable, non-discriminatory, non-proprietary, and license-free. Additionally, the open data policy should include elements of the factors that emerged from Tulloch et al. and Clark et al.: clear objectives, consistent engagement through project leadership, and an emphasis on nurturing relationships through communication and responsiveness (2013, 2017). Following these guidelines will help the City of Eugene to avoid many of the pitfalls of open data that have been identified by researchers such as Conradie et al.

Invest resources to develop a co-production program

Coproduction is almost in action with the City of Eugene Vision Zero website in place except it lacks stakeholders in place to effectively bring the desired change and proper infrastructure. Based on the literature, coproduction appears to be the piece that's missing in launching a more accessible platform and an effective marketing campaign for the program. The cornerstone to establishing these stakeholders is to identify who the city is interested in working with and then assigning staff to reach out to and develop a plan with these stakeholders. Coproduction requires that management establish a willingness to gamble on things that may or may not work and having the fortitude to keep going until something does work. The city recently hired a Data Scientist which is moving in the right direction to implementing an open data platform, but management should also have built into the budget some funds that could cover additional employees if necessary. Equity should be at the forefront of all platform design to allow for ADA access, ability to access from diverse interfaces, and finally ease of use should be focused on making sure the platform is accessible in a way that isn't time consuming or overwhelming to the user. Currently the City of Eugene website doesn't accommodate accessibility to the website which ensures some people won't use it. Also, the diversity of access interfaces is lacking currently and should be widened to include email, phone, and text at the very minimum. The city is just getting started in this project to bring this Vision Zero platform to the citizens and local businesses, but the management should embrace the fact that they're not there yet and there's still lots of work to do and lots of

stakeholders to partner with to bring this idea to life in a manner that serves all residents in an equitable and meaningful way.

Conclusion

To examine the topics of open data and data coproduction, our team completed a comprehensive literature review of scholarly articles, assembled case studies of open data policies in Seattle and Portland, as well as examining a citizen science project done through UO to gather parking data in the city of Eugene, and interviewed two experts in parking and data management at the city of Eugene. As a result of this research, we have three recommendations for the city of Eugene: 1) Create and implement a strategic open data policy following the guidelines established by our research, 2) enact citizen science projects such as the parking study completed by UO, and 3) partner with UO to employ their students in pursuit of these goals. In following these recommendations, the city of Eugene will enjoy the benefits of the new era of data management.

References

Ammons, D. N., Coe, C., & Lombardo, M. (2001). Performance-Comparison Projects in Local Government: Participants' Perspectives. Public Administration Review, 61(1), 100–110.

Bovaird, T. (2007). Beyond Engagement and Participation: User and Community Coproduction of Public Services. *Public Administration Review*, *67*(5), 846–860.

City of Portland. (2019). Portland, Oregon: Maps, GIS, & open data. Retrieved from https://www.portlandoregon.gov/28130

City of Portland. (n.d.). Smart City PDX: open data program. Retrieved from https://www.smartcitypdx.com/open-data-program

City of Seattle. (2019). Seattle information technology: About the open data program. Retrieved from http://www.seattle.gov/tech/initiatives/open-data/about-the-open-data-program

Clark, B. Y., Zingale, N., & Logan, J. (2017). Intelligence and information gathering through deliberative crowdsourcing. Journal of Public and Nonprofit Affairs, 3(1), 55-78. doi:10.20899/jpna.3.1.55-78

Clark, B. (2019, May). PPPM 633, Public Management, Week 9. Lecture.

Conradie, P., & Choenni, S. (2014). On the barriers for local government releasing open data. *Government Information Quarterly*, 31, S10–S17.

Janssen, M., Charalabidis, Y., & Zuiderwijk, A. (2012). Benefits, Adoption Barriers and Myths of Open Data and Open Government. *Information Systems Management*, *29*(4), 258–268.

Norris, D. F., & Reddick, C. G. (2013). Local E-Government in the United States: Transformation or Incremental Change? Public Administration Review, 73(1), 165–175.

Sanderson, I. (2002). Evaluation, Policy Learning and Evidence-Based Policy Making. Public Administration, 80(1), 1–22.

The annotated eight principles of open government data. (2007, December 8). Retrieved May 31, 2019, from https://opengovdata.org/

Tulloch, A. I. T., Possingham, H. P., Joseph, L. N., Szabo, J., & Martin, T. G. (2013). Realising the full potential of citizen science monitoring programs. Biological Conservation, 165, 128–138. https://doi.org/10.1016/j.biocon.2013.05.025

Vision Zero | Eugene, OR Website. (2016). Retrieved June 11, 2019, from https://www.eugene-or.gov/3239/Vision-Zero