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# Civic Data Trusts

An opportunity for participatory data governance

16 October 2020 | Timothy Kariotis

# Summary

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In many areas of life, from healthcare to education, there is increasing adoption of data-centric technologies. City, State and Federal Governments are increasingly adopting data-centric and algorithmic technologies, in what could be termed a shift to algorithmic governance. This shift poses challenges to the democratic principles of transparency, accountability and openness, as well as a risk to privacy. Smart cities, such as the proposed Sidewalk Toronto project, provide interesting case studies to explore some of the challenges in the adoption of data-driven technologies in civic spaces and by governments.

One of the potential ways to address concerns regarding algorithmic governance is to institute new approaches to data governance that privilege transparency, openness and accountability. Civic data trusts are one model of data governance that has been proposed in the context of smart cities. A Civic Data Trust would see an independent trustee manage the data collected in a smart city. The trust would make decisions on who could access and use data based on a set of principles aimed to benefit a specific set of beneficiaries. A core element civic data trusts would be participation by citizens in making decisions about how the data trust makes decisions. However, participation is not easy to accomplish, and there are a number of theories, methods, and approaches to participation, and more specifically, participatory governance.

Participatory governance requires spaces and opportunities for deliberation between community members and other stakeholders over specific concerns. In addition, processes and structures are needed to link the outcomes of these deliberations to decision making spaces. This issues paper explores some of the approaches to participation and participatory governance that could be applied in the design of civic data trusts for use in smart city data governance.

## 1. Introduction

We are living in the infosphere<sup>1</sup>, where data is becoming more available by the minute. This deluge of data provides opportunities to transform the way we live. However, the increasing availability of data brings with it concerns over its appropriate collection and use. This is especially the case for data collected in civic spaces. An onslaught of data misuses risks eroding trust in our data-driven world, and potentially stopping the flow of information where it is most needed.

‘Smart cities’ are one example where the collection and use of data in civic spaces are of concern and interest to many people. Smart Cities in the more popular sense of the term involves the adoption of information technology into the city landscape to support governments, citizens and businesses.<sup>2</sup> However, the idea of a city being ‘smart’ may also involve new opportunities for knowledge production and new forms of governance. Internationally, cities are trying to become ‘smart’.<sup>2</sup> There are also some smart-city testbeds, such as the recently discontinued Sidewalk Toronto project, that provide insight into the future of smart cities.

Smart cities projects have led to concerns being raised to the adoption of data-centric and algorithmic technologies by governments and the parallel outsourcing of transparency and accountability to private companies.<sup>3,4</sup> Further, our current approach to data governance, where notice and consent or anonymisation are used to manage privacy risk, provides little guidance as to ‘good’ civic data use.

Data trusts are one approach to addressing issues regarding transparency and accountability, as well as defining ‘good’ uses of data.<sup>5,6</sup> A data trust would see the establishment of an independent data steward for data collected by companies and organisation in the smart city. Decisions made by the data trust would need to benefit all stakeholders.<sup>7</sup> A civic data trust calls for participation of stakeholders from across society. However, participation is no easy feat and risks falling to paltry models of consultation.<sup>8</sup>

The idea of a data trust is not perfect and raises a number of questions. However, it is a good starting point to considering new approaches to data governance that go beyond the minimal protections provided by privacy and data protection regulation.

## 2. Algorithmic Governance & Smart Cities

Data is becoming increasingly central to our way of life. Many government services are now accessed via online portals, and government decision making is increasingly informed by data analytics. Predictive algorithms and machine learning are slowly creeping into the heart of government decision making and may be used to automate processes traditionally carried out by public servants. These shifts can be captured by the concept of algorithmic governance. Concerningly, most levels of government do not possess the capacity to implement data-centric technologies themselves, and thus tend to outsource this to private companies.<sup>9</sup> The unconstrained and exponential adoption of big data and algorithmic technology in civic life poses a threat to our democratic values.<sup>4,7,10</sup>

Smart cities are a good example of algorithmic governance as they represent the convergence of many sectors and stakeholders. They are also an example of broader algorithmic governance, where governments may outsource processes to data-driven algorithmic technologies provided by private companies.<sup>3,4,9</sup> This algorithmic governance challenges central tenets of democracy, such as transparency, accountability and openness.<sup>11,12</sup> Another adjacent issue to algorithmic governance raised in the example of smart cities is that of privacy. With the digitisation of city landscapes, questions arise as to how people maintain control over their personal information. Because people usually do not have the choice to interact with the urban landscapes in which they live, work and play, there is no opportunity for them to opt-out of data collection.

Smart cities have been defined many times over, though no one definition stands out, potentially due to the multiplicity of meanings given to the ‘smart’ in smart city. Albino, Berardi and Dangelico<sup>11</sup> outline how ‘smart’ is used to capture both the adoption of information communication technologies into city infrastructure, as well as the intensification of cultural and creative spaces that facilitate knowledge sharing.<sup>2</sup> From an information communication technology perspective, a smart city involves the addition of a ‘digital layer’ between the traditional infrastructure (e.g. roads) and services layer (e.g. transport services) of a city. In the case of the smart city, data is seen as a way to make more

efficient policies to meet the growing role of cities, with less available funding. This might include improving the management of infrastructure, the tailoring of services or the provision of new data-driven services. However, it must also be noted that different countries have a different role for cities and city governance. In the United States cities play a large role in policing, provision of healthcare and welfare, whereas in Australia these responsibilities sit with State and Federal Governments.

There are a few ‘test-bed’ smart city examples internationally that provide insight into different approaches to address data concerns in the smart city. One prominent and somewhat controversial example is that of Sidewalk Toronto, explored below.

### 2.1 Case-Study: Sidewalk Toronto

Sidewalk Toronto was a project aimed at revitalising the Toronto Waterfront. The project was a partnership between three levels of the Canadian government and Sidewalk Labs (a sister company of Google).<sup>13</sup> The Sidewalk Toronto project was believed to be a revisioning of the industrial Toronto Waterfront as a futuristic neighbourhood with a digital layer of data collection from a variety of sensors across the city.<sup>14</sup> Though much consultation was undertaken with the local community, it has been argued that the community had limited influence on the plans for Sidewalk Toronto.<sup>13-15</sup> This led to much backlash from the local community, especially over the issue of privacy and data governance. Further, there were concerns about how the data collected in the neighbourhood would be used, and for whose benefit.

Sidewalk Labs proposed a data trust as one way to address the concerns regarding the collection and use of data from Sidewalk Toronto. However, there was a number of issues with the proposal, including: a focus on data collection rather than data use;<sup>10</sup> the issue of defining who should be the key beneficiary of the data trust; deferral of data privacy decisions into the future; and more broadly the lack of public participation.<sup>13</sup> In early 2020 Sidewalk Labs announced they would no longer pursue the Toronto project.<sup>16</sup> Sidewalk Labs cited the financial turmoil raised by COVID-19 as their reasons for not continuing the project.

Sidewalk Toronto was unique because it was planned as a smart city that would be built nearly

from the ground-up. However, most cities will develop over time to include ‘smart’ technologies. Depending on the definition of ‘smart city’, one could identify a number of cities that are ‘smarter’ than others. The risk for many cities and citizens is that ‘smartness’ will creep into the city over time, with less public scrutiny than that which occurred with the Sidewalk Labs project.

### 3. Data Trusts

Data trusts have risen to prominence in the past few years as a potential solution to the issues raised above regarding the collection and use of data that increasingly underpin the functioning of our society.<sup>5,7</sup> This has been helped along by Sidewalk Labs proposing a data trust as a solution to address concerns regarding the collection and use of data in Sidewalk Toronto. There are a number of different data trusts models that have been proposed. However, a more general model is provided below.

The data trust model sees those who hold data assets, placing them into a trust. The trust must manage the data asset in a way that benefits a certain group (the beneficiaries). The trust is overseen by a trustee who is an independent person or people. Finally, those wishing to use the data, including those who initially collected it, would receive licenses from the data trust to use the data.<sup>17</sup> Collection and use of the data would follow privacy law and principles established by the data trust. A considerable amount of different terminology and models of data trusts have arisen over the past few years. The core concepts are outlined in Table 1.

<b>Trustees</b>	Trustees are independent individuals or an independent organisation who manages the trust.
<b>Beneficiaries</b>	Beneficiaries are those that trustees make decisions in the best interest of, regarding data access and use.
<b>Trustors/ Settlers</b>	Trustors or settlers are the data holders who decide to have their data held in a data trust. This could be a company, such as Sidewalk Toronto, or it could be individuals.

Table 1: Elements of a Data Trust<sup>5</sup>

The data trust model is really a framework for a new form of data governance. The current, broadly practised model of data governance is described by Mills<sup>18</sup> as a Laissez-faire model. In the current model of data governance, individuals trade their data for access to products and services. The data collectors use the collected data for their own means or sell it to third parties. The only constraints on the use of data are external regulation, such as the European Union's General Data Protection Regulation (GDPR). However, though the GDPR provides protections for those whose data is collected, it doesn't necessarily facilitate the 'good' use of data. The other issue with the current model is that it tends to rely on what is called 'notice-and-consent.' Individuals are provided notice of how their data will be used (usually in the form of terms and conditions) and then consent to their data being collected and used. Beyond this notice and consent, users have little say in how their data is used.

### 3.1 Data Trust Models

There are many different models of data trust. In the context of smart cities, the most relevant are the civic data trust and civic digital trust.

**Civic Data Trusts:** Civic data trusts have been promoted as an appropriate model of trusts for smart city data, as they ensure participation is part of the governance model.<sup>17</sup> McDonald<sup>17</sup> puts public participation at the core of the civic data trust saying, "Civic Trustees and the licensed commercialising company will have a fiduciary duty to develop participatory governance processes that keep each other in check." This is also confirmed by Barter et al. <sup>19</sup> that "[t]hrough the development of the civic digital trust, there must be citizen representation at all stages."

**Digital Trust:** Barter et al.<sup>19</sup> and Clement<sup>14</sup> advocate for the idea of digital trust. The digital represents the fact that more than just raw data may be included in a trust. A trust could also be responsible for the physical infrastructure that collects data, the software used to process the data, and the outcomes of the analysed data. Thinking about the example provided by Sidewalk Toronto and the digital layer they've proposed. This digital layer will be composed of software, sensors, algorithms and data, all of which could be under the purview of digital trusts.

## 4. Participatory Data Governance

There are still a number of unanswered questions regarding data trusts, especially in the context of the smart city. Open Data Institute<sup>5</sup> has raised the issue of data maturity, in that though there are large amounts of data available, there is not necessarily the capabilities in the community to share and make use of this data. The issue that this paper is concerned with is mechanisms for participation. Though the data trust model proposes to increase participation of those whose data is collected, there has been limited discussions on how this participation will come about.

The current hegemonic approach to data governance in society tells us little about what could be considered a 'good' use of data. Organisations are only provided with a legal framework to act within, which tends to focus on what 'not' to do with data. Legal frameworks provide minimal, not maximum protections for citizens.<sup>20</sup> Data trusts provide a new model of data governance that can sit alongside legal considerations to guide the phenomenal increase in data collection and use our society is experiencing. However, data trusts are still a new idea, and even the term 'data trust' is contentious because of mental models around legal trusts, and even the idea of 'trust' that is raised. Further, any decisions made by data trusts will be political and contentious, and thus there is a need to involve citizens in the working of the data governance models.

### 4.1 Participation

"Participation is a transformative concept. It is a way of life, a way of seeing the world and a way of being in the world."<sup>21</sup> This quote from Ledwith and Springett<sup>21</sup> make the point that participation is more than just a method or project plan that can be picked up and implemented. There are many different types of participation, which include a normative element. Arnstein<sup>22</sup> and Pretty<sup>23</sup> have both provided seminal typologies of participation that explore the difference between tokenistic and transformative forms of participation. Tokenistic forms of participation tend to happen when the end goal is already known, and participation is used to legitimise the end goal or help meet the end goal. This can take the form of consultation, placation and manipulation.<sup>22</sup> Transformative forms of participation include citizen control,

delegated power and partnerships.<sup>22,23</sup> These latter forms of participation see the process as more important than the outcome, with influence over decisions being given to participants and institutions playing more of an enabling role than a leading role.<sup>24</sup>

## 4.2 Participatory Governance

Participatory governance has been a core element of international development work to promote the deepening of democracy and improved provision of public services. However, participatory governance is also being seen as a remedy for some of the challenges facing modern democratic states with the move from government to governance.<sup>25</sup> Participatory governance has included decentralising decision making, increasing citizens in the policy process and the design of public services, and empowering citizens to engage in democratic processes.<sup>26</sup>

A key challenge in any participatory endeavour is grappling with power differentials. There are many ways power can play out in participatory methods, including the framing of the space for participation, who participates, assumptions about the issues being addressed, expectations as to the process of participation, the roles people are allowed to take on, and the agency provided to different actors.<sup>24,27</sup> The Sidewalk Labs example provides insight into the power imbalances at play in data governance.

Participatory governance can be found in a number of forms around the world, ranging from neighbourhood governance councils to models of participatory budgeting.<sup>25</sup> Fung and Wright,<sup>25,28</sup> reflecting on a number of examples of participatory governance, provide three principles including:

- Participatory governance structures need to coalesce around practical concerns.
- Though experts play a role in addressing issues, legitimate spaces for ordinary citizens to formulate solutions must be provided.
- Deliberation is central to participatory governance. Deliberation means contemplation, discussion and arguing over potential courses of action, not necessarily to reach consensus, but to find solutions that can be accepted by the group.

Drawing on these examples, Fung and Wright<sup>25</sup> also outline the benefit of using already established intuitions as the basis for participatory governance. Thus, by reforming the power of institutions, broader power dynamics can be shifted to allow for participatory spaces. A core element of participatory governance and, more broadly, of democratic government, is the idea of deliberation defined by Cohen<sup>29</sup> as “reasoning together among equals.” One example of a participatory process – or more specifically a model of deliberative democracy – that could be adapted for making decisions around data governance, is the participatory budgeting approach.

## 4.3 Participatory Budgeting

One example of participatory governance that might provide insight for our data-driven future smart cities is that of participatory budgeting. Participatory budgeting sees community members invited to work with government officials to establish proposals for budgeting through a process of public deliberations and voting.<sup>30,31</sup> Participatory budgeting has been implemented in a number of municipal governments internationally such as Porto Alegre (Brazil), New York City (USA), City of Reykjavik (Iceland). Participatory budgeting can be a year-round project in many of these cities, with multiple spaces for deliberation to occur and decisions to be discussed. If smart cities were managed at the municipal level, there would be potential for applying similar participatory budgeting processes.

Applying this to a data trust could see community members deliberating and voting on reasonable uses of data that the trustee would then implement. Further, if we consider the idea of a civic digital trust, which also has a role in managing digital infrastructure, a participatory approach could be taken to investments in digital infrastructure. However, this may require a stage of data maturity that many smart cities may not have reached, as discussed by Open Data Institute<sup>5</sup> in their report into three data trust pilots in the United Kingdom. Further, it must be said that participatory budgeting did not happen overnight. Many of the participatory budgeting approaches in Brazil developed out of political, social and economic struggles over a number of decades.<sup>18</sup> It raises questions as to whether there is a ‘recipe’

for participatory approaches that could be applied in any context.

## 5. The Path Forward

Reflecting on the evidence and examples of participatory governance raises a number of themes that need to be addressed in the design of civic data trusts. First is that the data trust is not able to stand alone and will need to be situated within a process and supported by public and private institutions. Participatory budgeting is a political form of participation, in that it has emerged in many contexts out of a political struggle for greater citizen involvement. This struggle has shaped the process and approaches to participation and enabled the sustainability of such efforts. Those interested in participatory data governance and data trusts should take a long-term view of such strategies – and not imagine that implementing a data trust model overnight will lead to success.

The broader process within which data trusts will be situated must address issues of deliberation and how collective decisions will be taken by communities. Abers<sup>32</sup> and Rinik<sup>33</sup> discuss this balancing act between addressing practical concerns of ‘ordinary people’ and individuals, as well as broader collective challenges. The question that needs to be asked is how participation in civic data trusts can benefit individuals to warrant their effort in being involved. It may be that, as the Open Data Institute<sup>5</sup> has outlined, we are yet to reach a stage of data maturity. This may apply to individuals if people are yet to see the direct implications and potential benefits of controlling data. It could also be that, because the tools create value from data are still solely held by powerful stakeholders.<sup>33,34</sup>

This issue of data maturity raises a broader issue of the need to create opportunities for citizens to improve their data literacy, while also connecting ideas of data and data-driven technologies to the real work concerns of citizens. In the example of participatory budgeting, the government informs the citizens and provides the necessary materials to support decision making. However, when we look at how governments make decisions on algorithmic governance, in many cases, they are done through public-private partnerships or through outsourcing. Eubanks<sup>9</sup> raises the issue that many governments may have limited understanding of how many algorithmic processes

operate, let alone being able to provide citizens with an enabling environment to discuss these decisions. There are numerous efforts underway to try and make data-driven and algorithmic governance more explainable and interpretable. However, this does not necessarily open up a space for critique as to the explicit and implicit purpose, objectives and assumptions in the choice to use these technologies in the first place.

Drawing on both the idea of the ‘digital trust’ and participatory budgeting, three key spaces for participation could be developed in the implementation of a civic data trust. The trustees should include elected citizens who receive training and resources to participate. A participatory process should be used to help establish the principles and frameworks that the trustees use to guide decision making. Finally, consideration needs to be given about how citizens might access and use data held by the trust. Much could be learnt from the *Open Data*<sup>35</sup> movement as to the opportunities for providing citizens access to data about their community. A data trust could enable citizen involvement by requiring those who contribute and use data in the trust to also support the development of digital tools for citizens to make use of the data.

Finally, the elephant in the room is data ownership. This is not the place to get into a deep philosophical or legal discussion about data ownership. Others, such as Mills<sup>18</sup> and Evans,<sup>36</sup> have written on this topic. However, we should not allow the issue of data ownership to distract us from the need for new forms of data governance that address the issues raised by algorithmic governance.

In conclusion, though futuristic smart cities may seem far way away, ‘smartness’ is creeping into our cities every day and we can’t wait for a complete algocracy to overtake our democracy before we start thinking of solutions. Data trusts provide one starting point for rethinking data governance. Data trusts may have applicability in other sectors too. However, the foundational concept of an independent data steward may be implemented differently in practice across different contexts. If we are to move beyond the minimal protection provided by law and regulation, we need to consider tailored data governance solutions and accept there may never be a one-size-fits-all model.

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