



Research Report
May 2016

Opening data in Quebec's municipalities: **Issues and level of advancement**

By

Daniel J. Caron, Ph.D., Professor, ENAP

Christian Boudreau, Ph.D., Professor, ENAP

NetGouv Open Data***Measure of the contribution and evolution of open government in Quebec***

This report is part of the *NetGouv Open Data* project whose purpose is to develop, implement and disseminate the results of a new measure of the usage of government data in Quebec and to assess how the measure promotes economic growth. The project aims to measure adherence to the new open government data approach within various departments, government agencies, and municipalities. The report also looks into internal collaboration with other departments and agencies, as well as open data planning and deployment.

Project Team – CEFRIO

Claire Bourget, Senior Director of marketing research

David Huynh Quan Suu, Project Authority in marketing research

Guillaume Ducharme, Director of Communications

Julia Gaudreault-Perron, Project Manager

Annie Lavoie, Communications Advisor

Scientific Team

Christian Boudreau, Ph.D., professor, École nationale d'administration publique

Daniel J. Caron, Ph.D., professor, École nationale d'administration publique

© CEFRIO, 2016. All rights reserved.

The information contained herein may not be used or reproduced by a third party without written authorization of the CEFRIO.

TABLE OF CONTENTS

1. INTRODUCTION.....	4
2. ISSUES	6
3. APPROACH AND METHODOLOGY	7
4. FINDINGS.....	8
4.1 CURRENT STATUS	8
4.2 OVERARCHING ISSUES	9
4.3 INSTRUMENTATION AND FRAMEWORK.....	11
4.4 NEW CULTURE OF INFORMATION	13
4.5 RISKS AND OPPORTUNITIES	13
4.6 LEVERS AND POTENTIAL SOLUTIONS.....	15
5. DISCUSSION AND CONCLUSION	17

1. INTRODUCTION

The movement toward more open and transparent government in the Western world touches on several dimensions of traditional governance. Preceded by initiatives such as access to information in a spirit of accountability, transparency is now perceived and built around initiatives that are larger in scope. Specifically, the sharing of information held by governments, beyond mere accountability, is now a key part of social expectations. In this vein, several organizations have made their databases available to citizens – individual and corporate – to enable them to see and use that data to conduct analyses or develop applications. It is common knowledge that public organizations collect a lot of information, which is often under-utilized due to a lack of time, ability or simply expertise.

This study was conducted as part of a larger project under the auspices of CEFRIO in 2015 and whose primary objective was to measure the level of advancement of departments, public agencies and municipalities in opening their data. Given that municipalities constitute a world unto themselves—in terms of operating rules, types of data, governance, etc.—, it was decided that they should be examined separately from departments and agencies, so as to ensure a better understanding of the issues that are specific to both environments. As part of this exercise and in a more specific manner, CEFRIO sought to develop a quantitative barometer that would provide an annual assessment of the progress made in opening data and issues related to opening such data. These related issues vary in nature and include technical aspects such as which formats are to be used when opening up data, process issues such as the frequency of updates, normative issues such as the quality of the data to be opened up, and more strategic aspects such as the economic and democratic benefits that result from data liberation.

The first steps undertaken in the project had as their objective to understand where the municipalities, departments and agencies were at in terms of their progress on these issues. The goal was to contribute to the development of a relevant questionnaire to be given to all of the municipalities and provincial public departments and agencies. This first part of the study was conducted in two stages, namely, with the departments and agencies, and then with four municipalities. During this first phase of the study, we decided that it would be helpful to expand the questions in order to gain information on other aspects that seemed to be central to understanding the current status on this issue. For example, it appeared important to better identify the political and organizational issues underpinning the opening of data as well as the levers or obstacles that help or hinder data liberation. It was with this in mind that we conducted this research with municipalities.

Overarching, the results show the municipalities have a solid knowledge of the issue. At the same time, this movement towards open data has been somewhat haphazard, with dissimilar leadership and methods, and a tendency to lack a well-defined operational framework. In other words, it remains a very recent field for most municipalities and there is still no operational framework to which they can refer to move forward with this type of initiative. Lastly, it is important to note that the research identifies specific aspects that were directly related to the municipal context.

After having described the issues, approach and methodology, section 4 of the study provides a summary of the data collected in the form of findings. The goal is to present the various points of view and issues raised in the interviews. Section 5 follows with a discussion about the points raised and section 6 explores potential solutions.

2. ISSUES

Open data issues with municipalities are somewhat different than those with provincial agencies and departments. For at least three reasons, these issues place municipalities in a position that is both less restrictive from the perspective of being obliged to open their data in comparison with departments and agencies, and very interesting to citizens in their daily lives. First, while departments can provide data that is of great interest to researchers or other groups with respect to, for example, large scale provincial works, or research on themes such as education, road accidents or health, data held by municipalities affects the day-to-day lives of the citizens of those municipalities. This could include mobility, crime, leisure activities, culture and other themes that are specific to the provision of municipal services. All municipalities possess significant quantities of data simply by virtue of the fact that their missions place them on the frontline in providing services. Such proximity to citizens and the very nature of the services that are provided make municipalities not only significant holders of data, but above all, holders of data that is of great interest to citizens, and data that has great potential for the development of applications. Second, unlike departments and agencies, municipalities are not under the jurisdiction of a central authority vis-à-vis their operations. They have to comply with the *Cities and Towns Act*, their charters and other laws and regulations that do not affect their day-to-day operations with respect to these data issues. In that sense, they enjoy a good deal of autonomy as to deciding whether or not to open their datasets. Also, and as a result, there are no general guidelines that frame the opening of data in the municipal world. Each municipality is free to participate and each municipality is free to determine its own level of effort, if any. This, as we shall see, can present an advantage or a disadvantage.

Third, and lastly, the value and worth assigned to data in light of the very nature of municipal data also raise issues of proximity. These issues are principally related to confidentiality and security.

3. APPROACH AND METHODOLOGY

This study unfolded in two stages. We began by reviewing the obligations of municipalities with respect to data and information-sharing under the *Cities and Towns Act* and the Access to Information and Privacy Acts. Then, we looked at what was being done elsewhere in North America in terms of open data at the municipal level. Lastly, we conducted two sets of interviews in four municipalities. The first set of interviews was held with the municipal open data project leads in four municipalities. The second set of interviews was held with 16 representatives from various municipal services in the following four municipalities: Montreal, Laval, Quebec City and Sherbrooke.

4. FINDINGS

This section presents the results of the study in the form of four broad findings. Answers were analyzed and summarized in order to draw out key messages and discrepancies where these were significant.

4.1 CURRENT STATUS

The interviews conducted revealed three themes with regard to the overarching current status of open data in municipalities. First, the still precarious nature of data liberation in municipalities appeared to be a relatively generalized situation. None of the interviews allowed us to identify an organization that had fully achieved data liberation, in the sense where it would be reflected by the presence of fresh and adequate resources, the existence of well-articulated and sufficient policy instruments and by a firmly rooted open data culture within the administration. What came through clearly was more indicative of a willingness and intent, which is nonetheless very positive with respect to openness of data.

[translation] *"We want to be completely transparent. Our objective, ultimately, is to have all data that is of a public nature made available as soon as possible."*

"The goal is ... to consider that, by default, the data is open, and from there, manage any exceptions."

Second, most respondents agreed that the work accomplished thus far was still very preliminary and that organizations needed to continue to develop their understanding of the potential offered by opening up data for their citizens. For a number of stakeholders, open data is a wide-ranging subject and further reflection is required in order to gain a better understanding of many of its attributes such as the what, how, goals, benefits, required framework, resources needed and internal operating model. These questions keep coming up in various forms and remain a concern for leaders of open data projects.

[translation] *"At the moment we're kind of in the trough of a wave. There was the launch ... in 2011 ... then in 2014, nothing much happened; there has been relatively little activity in the community."*

Third, the momentum toward the end of the 2010s has waned and stakeholders acknowledge that there has been a loss of enthusiasm for a number of reasons that are raised by the report in the sections that follow. Nonetheless, answers can be grouped into two categories. First, there are the questions related to framework. These include questions about vision, the existence of enabling instrumentation for sectors that must free up data such as a guide, guidelines, etc. Then there is the whole matter of resources, roles and responsibilities within an organization, which emerge rapidly once the work of data liberation expands. As there are no resources allocated for these projects in most cases, services must first devote their resources on priorities identified before venturing into new projects. There are also legal, administrative and economic repercussions, both internal and external, that remain unknown and which raise still more questions. Questions of confidentiality, of potential security risks (e.g.: infrastructure or police data) or even what use the data will be put to are only a few examples of unresolved issues.

In short, the feedback gathered generally showed an attitude that tended to be closer to cautiousness rather than suspicion or resistance, even if some resistance was found in certain quarters.

Lastly, the opening of the www.donneesquebec.ca portal revived momentum for the open data initiative in a concerted manner. As of May 20, 2016, there were five municipalities that had contributed a total of 407 datasets to the site. This study did not enable us to analyze or compare the various datasets that were freed up. The portal provided a good deal of information on the datasets that had been opened up such as the category of information, the history of updates or the applications available for a given dataset. This information will allow for a longitudinal analysis that is both quantitative and qualitative of the data that has been made available to citizens through the portal.

Cities	No of datasets on the site ¹
Montreal	217
Quebec City	52
Laval	19
Sherbrooke	37
Gatineau	82
Total	407

4.2 OVERARCHING ISSUES

- **Most people are very familiar with the concept of open data.**

All in all, there were no problems understanding the concept and issues related to data liberation. The overwhelming majority of respondents, no matter their role within the organization, understand the difference between access to information, transparency through accountability with documents with “statistical” content, and open data. Most were able to clearly explain the meaning of open data. In fact, that understanding often led respondents to wonder about the appropriate level of maturity their organization should reach before they should open up data. In addition, the research showed that for most participants, the open data project was new, in its early stages, and that a number of questions and issues needed to be addressed in order for it to make headway in their organization. For those who were less familiar with the concept and characteristics of open data, the main reason for this was because they had not been exposed to “raw” databases, or were unclear about how citizens might make use of these. However, those who were familiar with the concept were able to rapidly identify datasets in their organization and how those datasets could be put to use by citizens.

¹ www.donneesquebec.ca website consulted on May 20, 2016.

- **Internal leadership and governance are in their early stages.**

In most cases, the research showed that open data projects are handled by a few individuals in municipal governments. These individuals drive the project and provide strong leadership. However, this concentration of leadership around one service or a few people is often considered to be a necessary, albeit insufficient condition for the conduct of business. This situation generally ends up posing problems. From the moment these “champions” or project drivers start acting solely on their own initiative, it quickly becomes difficult to encourage other parts of the organization to get involved with and contribute to the open data project. There are many reasons for this, but as a result of the leadership having sought to be more natural rather than “coercive,” the multiple priorities faced by most administrative units quickly end up relegating open data projects to a lower priority status.

[translation] *“In fact, I am kind of an evangelist on the topic ... an open data evangelist; we can see that open data can be a force for change, that it can bring considerable advantages to citizens while promoting transparency in government ... but it depends on more than one person”*

On a number of occasions, the term “open data evangelist” was used. Such symbolic terminology attests to the efforts and socialization work that are needed to bring the project to a successful conclusion. There are a number of reasons for this need. First of all, data liberation is often misunderstood in business circles. Second, data liberation requires sustained attention and relatively in-depth knowledge of the characteristics of the data available that is to be freed up. The time available to reflect on these questions becomes a key element in the success of the enterprise.

- **Resistance, uncertainty and questions**

[translation] *“... and I won't hide the fact that there has been resistance. Whether it's founded or not, I won't necessarily make any judgment ... Well, some of the resistance is perhaps more cultural, I would say, within our organizations”*

Although resistance to data liberation was not a dominant theme that emerged from the study, it did show up in certain places and for various reasons. Of course, and we will explore this further below, questions were frequently raised as to the relevance of liberating data. Who was going to use it? To what end? What are the real costs compared with the benefits expected by the City? Will future cross-referencing of various databases put the confidentiality of some information at risk?

Will the data really be used? How would we know? All of these questions came back frequently in the sub-text of the answers. Such questions are fairly normal for most people who are used to managing projects and making choices under tight finances. They reflect issues of efficiency and effectiveness shared by all organizations. But the main “true” resistance, if any, is related to the ownership of data. Databases are often the primary tool of some units, through which their contribution and added value to the organization is transmitted.

This question therefore remains an element of concern. Such data ownership is present in many places. Certain individuals are of the view that the liberation of their databases will render their work less necessary and fear that others may soon be able to perform the work at a lower cost. Here, it is not a matter of large-scale use by average citizens wishing to view information. Rather, it is the use by specialized firms that have the technical means to perform the work carried out by the municipal services with the data in question. This concern is more overarching in nature and is consistent with concerns related to new business models that are emerging in the digital world.

- **Organization of work and resources allocated for data liberation have not led to the creation of new structures or dedicated budgets.**

Work on opening up data is generally carried out through the creation of multisectoral committees. Various municipal services are called upon to provide feedback at all levels of the at times fraught process of opening the data. Very few new resources are allocated towards open data projects. In all municipalities in which new resources have been allocated, those resources enabled the creation of new key positions for the promotion and facilitation of committees that study the issue of open data. Generally speaking, open data projects are entirely absorbed into existing units (e.g. IT services) and must operate within established budgets. There were mixed views as to the effectiveness of this model. Some were of the view that this new niche should be given more structure, while others believed that successful projects would have a demonstration effect on the organization and would generate sufficient interest to become a priority in various municipal services.

In the meantime, the “owners” or producers of the data lack access to these few resources, which remain centralized and do not allow them to benefit from support to “prepare” the datasets for being opened up. The organizational logic employed and observed in municipal organizations is similar to that of access to information, where one need only identify documents and make them available without modifying them. However, in the case of open data, the process becomes more complex and often requires updates, verifications, denominationalization and various treatments to render it useable. Put another way, opening data goes beyond mere liberation and generally requires reworking. Given resources that are either absent or limited, this slows down the rate at which datasets can be opened up.

4.3 INSTRUMENTATION AND FRAMEWORK

- **In most municipalities, the instrumentation used to provide a framework for open data is practically non-existent and, where it does exist, it is often obsolete or in its infancy.**

Although efforts have been made to put in place instruments that are able to assist in data liberation, few instruments are currently effective. Views are mixed as to the need for an open data strategy and policy. However, this point of view is more reflective of those who are in charge of open data projects within an organization and remains a minority view. When we asked those tasked with freeing up the data, they were unanimous about the need for solid and dependable instruments to guide the process. Most of these managers believed a strong framework was needed for data liberation so as to ensure that it was carried

out properly, that is to say that the data liberation follows shared and consistent principles within the organization.

- **The research showed that most organizations lack a clear and shared strategy within their organization. This is an emerging matter.**

Open data projects are often shouldered by a few individuals who would like to see the matter progress within their organization. These individuals usually have support from elected municipal officials, which,

[translation] *"We don't have unlimited resources ... do we develop tools that are going to be useful for organisations that open up data? Or simply for those who will make money off of it, and that ultimately, it won't be of any use to us."*

in fact, is considered to be essential. However, mandates are not always clear, as with objectives pursued in terms of timing, the type of data to open, etc. At best, strategies are still "emerging" in most cases. Two reasons explain this. First, operational and budget pressures on all municipal services result in the matter being relegated to the bottom of the list of priorities. Second, a number of people mentioned the need to proceed with "baby steps," given the uncertainties about the process. Several

respondents remained uncertain about the useful outcome of opening data for the municipality. As a result, they mentioned the need to provide a better framework, collectively, as an organization, for the process of data liberation.

- **The research showed that most municipalities still lacked any formal or well developed policy on open data.**

In the view of some, there was no need to procure such instruments, and preference should be given to the creation of projects, which, through their success, would serve as a catalyst. Conversely, the lack of a clear policy on open data and instruments that could be used to guide the process, of common standards or analysis grids, make it difficult for projects to get off the ground. For units that hold data, this causes two types of delay. The first is related to the perception that the lack of policy also reflects a certain lack of prioritization at the municipal level. The second is related to the fact that everyone then becomes responsible for creating their own tools to analyze and assess the 'what' and the 'how' of the data liberation process.

As resources allocated for data liberation are generally drawn from existing budgets and expertise in the field is rare, the research showed that for many, the existence of a policy and policy instruments would help move the process forward. Moreover, where there was a policy in place, the research showed a higher degree of "comfort" on the part of stakeholders, as they felt supported and guided in the data liberation process. Individuals were able to exchange ideas on challenges and issues and discuss corporate approaches.

4.4 NEW CULTURE OF INFORMATION

- **Open data requires a new way of thinking about information. We need to work proactively.**

It became clear that data liberation is a new area for which most data-owning municipal services are not prepared. With the exception of geomatics services that are used to sharing their data within municipalities and, at times, outside municipalities, other services must undertake a whole series of steps in that regard. The level of preparation varies from one municipality

[translation] *"I think it's well thought out, there's a minimum of process behind, it's self-fulfilling."*

[translation] *"Data is an iceberg. Open data is the tip of the iceberg, then there's everything beneath that, and if you don't control what's below, you don't control what's above."*

to another and from one service to another, though it is generally pretty reliable. The various municipal services end up quickly realizing that their data might not be ready to share for several reasons. First, there is the format and the traditional aspects of managing a database: updates, validity of information, metadata and other characteristics of a database, that is to say, the data has been organized for limited internal usage and is suitable for that purpose only. Next, there is the at times confidential nature of the information. Whether it is immediate confidentiality by the very nature of the data (e.g. crimes) or any potential later confidentiality by the cross-referencing of several databases (e.g. consumer habits of homeowners), this issue

constitutes one of the major obstacles. In some ways, the manner in which the data is structured and organized is not necessarily tailored to a wider usage outside of municipal government.

For the respondents, this challenge can be overcome, though it will require a change in culture and approach in the creation and management of information. There will be a need to ensure the production of data that is designed, from the moment it is created, to be widely used where appropriate.

4.5 RISKS AND OPPORTUNITIES

The liberation of municipal data is not without certain risks and opportunities. These risks and opportunities may be somewhat different for data than those for other government entities. In fact, we learned that both risks and opportunities are greatly dependent on the very nature of the municipal data, namely its singular proximity.

- **The risks are many and sometimes difficult to anticipate**

Undoubtedly the biggest risk is related to the possibility of cross-referencing the data. For example, it has been noted that municipal assessment services have enormous amounts of data. This data contains information that is quite valuable but that also contains data of a confidential nature. The liberation of the data by various city services, without a centralized overview, could lead to the misuse of sensitive

[translation] *"How do we manage when we begin talking about privacy, public space ... private space that is more closed, where there are risks to identifying the exact place, there are risks, many risks that have yet to be assessed."*

information. Thus, the coupling of information is often considered to pose a significant risk. It is hard to predict any negative outcomes without engaging in simulation exercises. This is what some have undertaken. In fact, in order to ensure that certain data that might be useful and of interest was liberated, the service itself tested the data before releasing it.

[translation] "... before making it available, we ourselves processed the data we were going to open. We tested it ourselves, to see what we could do with the data we were opening up."

Another risk relates to the quality of the data. Respondents noted their concern about the capability of freeing up quality data, and above all, maintaining the level of quality, as there were few resources to manage the liberated data. Once liberated, the data will be used as if it were up to date by users. Would it still be up to date? Who would take responsibility for

data that was not up to date and that had negative consequences for the public?

Possible out-of-context interpretations of data was also raised as a potential issue. The data is generally created for certain specific uses, and its release outside of its initial context could lead to misuse.

- **Numerous opportunities exist**

Respondents pointed out that open data presented promising opportunities, as much at the organizational, democratic, economic and operational levels.

First, some noted that opening up data externally had actually encouraged increased data sharing within that same municipality. Such sharing, non-existent before, allowed for the creation of new synergies between the services' management teams. Second, at a

[translation] "I provided a portrait of the fraud that has been committed in my area ... merchants are capable of finding out whether fraud has occurred in their area, and what type. Then, in relation to that, there are prevention tips."

[translation] "We're headed toward a full transformation of municipal organizations ... a new way of managing: horizontal management ... It was all in silos before. New ways of doing things in municipal organization ... to be able, precisely, to share a lot of information [that is currently] sectoral."

democratic level, the opening of datasets could become an interesting complement to access to information. For example, the liberation of datasets on expenditures or on the awarding of municipal contracts represents an interesting and complementary step that could enable citizens to gain a better understanding of various aspects of municipal life. Liberated in open formats rather than 'static' versions, this data could be cross-referenced and handled in such a manner as to make it more valuable in

terms of potential for transparency. Third, the opening up of municipal data could create significant economic benefits. Among other things, everyone recognized the relationship between open data and the emergence of smart cities. The development of applications is one of the most often-mentioned economic benefits, but there is more. In fact, this data can also be used to better understand where to invest or simply the economic and financial potential of a city. In terms of applications, a number of respondents noted that they were beginning to realize the extraordinary potential of certain databases that cannot be accessed to date due to

[translation] "Would it be beneficial to disclose where defibrillators are located, so that someone can develop a mapping application so people could find them in real time?"

a lack of means and expertise. The day-to-day operations of a municipality – filling in potholes or replacing burned-out streetlights – can be made easier through opening up data and developing applications. This could result in savings and greater efficiency of municipal operations. Similarly, daily life in the municipality – road traffic, events, infrastructure accessibility – could be simplified for citizens.

Several examples were raised and discussions demonstrated that there is still potential that remains unknown.

4.6 LEVERS AND POTENTIAL SOLUTIONS

The perspective of project drivers is fairly similar with respect to the changes required and levers to use to move forward with open data projects. If most stakeholders agreed on a certain number of points about the future of open data at the municipal level, they also agreed that there was a pressing need for certain ingredients.

[translation] *“From there, there should be a minimum of structure to encourage it ... otherwise, it won't work ... Then, there will have to be a committee that says, beforehand: OK, that one we agree to send” »*

We noted five broad elements: political and administrative leadership, medium and long term strategy, a governance structure that engages the organization, instruments (processes, guides, policies, standards), resources and adequate expertise, and a culture of documentation based on openness and transparency. On that last point, much work remains to be done.

[translation] *“We also have limited internal resources ... to open data”*

“For me open data should not require additional administrative work”

For many, the last decades have given rise to the development of ‘proprietary’ reflexes toward data. These reflexes have also developed as a result of good intentions such as the protection personal information. The responsibility towards databases, their quality, their proper interpretation and use

have caused a number of services to feel a sense of ownership over their data as guardians of it. Consequently, they can be wary about opening up these databases to other users, be they internal or external. The establishment of standardized infrastructure to provide a framework for this transformation with guides, processes, criteria, parameters and appropriate administrative policies is a key element for data holders. These respondents seek the solid framework and expertise needed to guide the process toward increased openness. They are often aware of the potential of the data, but prefer to proceed with caution to avoid slipups. To be sure, the question of resources is brought up often. Respondents are conscious of the fact that this should not necessarily bring new costs with it, but there is still work to be done and, especially during the transition, time will be needed to create good habits and instill new ways of working with the data.

Lastly, leadership and a solid governance structure are elements that have often appeared as the centrepiece of data liberation. As an aside, a number of respondents came back to the question of making this a priority or an ‘official’ program, to force the creation of a culture of open data.

5. DISCUSSION AND CONCLUSION

Open data represents the third broad initiative to improve transparency. First there was access to information, then proactive disclosure, and now data liberation. However, this last initiative is not as simple as access to information. At the very least, one can say that its complexities are found in different parts of the process. In the case of data liberation, uses include, for example, reuses or the development of applications which require the updating of the same data over the long term. In the case of an access to information request and depending on the nature of the information requested, they are requests that can be repeated over time, but that generally concern documents that only need to be accessed once. This is an important point to keep in mind when trying to better understand the dynamics that drive organizations when they are called upon to open up datasets, and the underlying challenges.

During the course of the research, what emerged fairly clearly was that information, whether in a database or simply in document form, was rarely the subject of reflection in relation to its use outside of the organization when it was created, that is to say, that the data was created for internal authorities for the purpose of ongoing operations, decision-making, governance, etc. This point proved to be of particular importance to the question of open data. It goes back to the level of preparation of databases prior to being opened up for uses outside of the administration. As this use/reuse becomes constant in an open data operational mode, this means that the processes for using databases need/will need to be transformed. If access to information changed the dynamics of creating information within organizations, data liberation still poses challenges to the way in which information is created, because from now on, the likelihood of the data being opened up must be taken into consideration at the time the database is created. This raises a certain number of issues.

In the case of transparency, the fundamental determinant is that the information provided to those requesting it be delivered without altering it, as what is being requested is precisely that kind of genuine content. It is access that enables users to find out what was said, decided or discussed. There is no secondary use or re-use other than the interpretation of the discussions and decisions of the government or political authority. In this case, the difficulties lie in locating the relevant material and reviewing it in light of the applicable statutory provisions. There are several potential uses for the information, but this treatment is one of direct interpretation of the information provided. Municipal governments are subject to the Access Act, are aware of its requirements, and apply them. In the case of data liberation, things are different. With open data, authenticity and original versions of the data are also sought. However, care must be taken to ensure the data is of high quality, that is to say, usable and reusable. And there is of course data that must be opened up to support transparency. When we think of financial or contractual data, the first idea that comes to mind is to conduct analyses, comparative analyses, etc. It can also lead to the development of applications, but altering the data could give the impression that there is an unwillingness to disclose the correct information. Alternatively, in the case of bus schedules or garbage collection schedules, what is important is that the information be precise and accurate, and this kind of information often changes. This therefore requires vigilance with respect to the exactness of the data. Such differences are important and require different work and preparation.

Another key aspect that emerged from the research was the wide diversity in categories of data. This diversity within a municipality makes questions of framework and support more complicated. One general guide is not sufficient to cover all business sectors. A municipality is a government and provides different kinds of services: assessment, leisure activities, public works, culture, fire services, police services, etc. We understand the complexity of providing a framework for these different services in a uniform manner. A horizontal, inter-municipal, service-by-service way of working appears to be an interesting avenue to explore. For example, standards of creation and liberation of data by sector would help on two fronts. First, it would support services in the liberation of their data in their respective municipality. Second, it would allow for better comparisons between municipalities of one type of service.

[translation] *"It may be something you might want to discuss with a provincial association"*

An open dialogue within municipal organizations will be needed in order to build a culture of open data. Questions or resistance that may exist will remain as long as organizations continue to avoid discussing this issue in a structured manner within the organization. Respondents demonstrated an openness on this subject, but they had questions and wanted to talk about these in order to gain a better understanding of what data liberation means, how to do it, and what the consequences of it will be, etc. Among other things, respondents generally had concerns about the legal aspect. Who would be responsible for the consequences – if any were to arise – of data liberation? Managers do not want to shirk their responsibilities and in that sense, a better overall understanding of the issues by all and for all appears to be an element that would help the process along.

[translation] *"Listen, we were not directly associated with a study [on open data]! I don't know if there was that kind of study."*

"We'll throw around some ideas and then look at any potential legal repercussions."

Lastly and to sum up, the research showed that there is great potential in opening up municipal data, though a certain amount of caution should be exercised. Not all data will necessarily be of interest or should automatically be opened up. However, the open by default idea came up again and again and would allow, to the extent a solid framework was in place to support managers, for the liberation of even more data that would be relevant and useful to citizens. A discussion of this matter should be held within each municipality, and discussions should take place among municipalities with respect to the similar services they provide.