Natural Resources Canada / Ressources naturelles Canada

Canada

2018

Natural Resources Canada's 2018 Commissioning Industry Surveys

ASSESSING THE CANADIAN COMMISSIONG MARKET FROM PRACTITIONER AND CLIENT PERSEPECTIVES

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Contents

1.0 Introduction

Commissioning (Cx) is a proven quality control and optimization strategy for ensuring effective building performance. In the case of new buildings, this means ensuring that the building actually performs in accordance with its design-intent, while the aim of existing buildings commissioning (EBCx) is to restore building performance to an ideal state. Effectively performed Cx imparts several benefits to buildings such as increased occupant comfort, reduced maintenance costs, enhanced value, but Natural Resources Canada (NRCan)'s principal interest in Cx is that optimal performance also translates into a more energy-efficient building. Therefore, NRCan promotes the practice of commissioning in the Canadian commercial and institutional building sector.

Recognition of commissioning's value and importance (at least in existing buildings) is also reflected in 2017's *Canadian BuildSmart Strategy*, which recommends that the federal and provincial governments collaborate on the "…*development of a recommissioning framework to optimize existing buildings*". Understanding of the current state of the Cx profession and market penetration of this service is an obvious prerequisite to creating such a framework. NRCan thus conducted a pair of interrelated Cx market surveys in the spring of 2018, to assess the current uptake of Cx services across the sector. The intention of these surveys was to inform and enhance the relevancy of the development of government programs that could potentially stimulate Cx uptake in Canada, while at the same time create a baseline to assess programming efficacy. One survey targeted Cx practitioners, the supply side of this market, while the other addressed current or potential Cx customers, the demand side.

The Cx practitioner survey was conducted in collaboration with the Western and Eastern Canadian Chapters of the Building Commissioning Association (BCA). This survey assessed the size, staff demographics and business activities of participating firms, while also seeking opinions on Cx business issues, barriers and future prospects.

The Cx customer survey was conducted in collaboration with the Building Owners and Managers Association of Canada (BOMA Canada). In this case, respondents were asked to comment on their experience and satisfaction with respect to commissioning undertaken in new and/or existing building projects as well as some demographic information to assist with analysis.

The following sections elaborate on the survey methodology and present a detailed analysis of the responses to each survey. It should be noted that neither survey could be considered formal "public opinion research" nor a rigorous statistical survey. Rather, these surveys served as a preliminary attempt to solicit and compare market data and perspectives from the respective target groups. The voluntary response to the survey reflects only data that respondents were willing to disclose. Nonetheless, the survey results have enhanced NRCan's understanding of the current state of the Cx profession in Canada.

NRCan wishes to acknowledge the kind assistance of Western and Eastern Canadian Chapters of the Building Commissioning Association and Building Owners and Managers Association of Canada in the creation and dissemination of these surveys.

2.0 Process

Both surveys were conducted as collaborative projects with the respective industry associations: Canadian BCA Chapters for the Cx practitioner survey; and, BOMA Canada for the customer survey, who both provided input into the questionnaires. NRCan hosted both surveys on-air using the "Survey Monkey" online tool. The associations sent out invitations to their respective memberships and, in BCA's case, also to non-member Cx firms.

The Cx practitioner survey lasted from May 10, 2018 until June 1; invitations were sent out to approximately 150 Cx professionals (fairly evenly split between the two Chapters). The Cx customer survey period was from May 24 to June 18, 2018, with invitations sent out to approximately 3,000 individual BOMA members encompassing building owners, managers & operators, and others.

NRCan conducted the response analysis on both surveys with the following results:

3.0 Results

3.1 Commissioning Practitioners

3.1.1 Demographic Profile

There were 59 usable responses (~40% response rate) to the survey, although not all respondents answered all questions. The survey began with demographic questions on the type of commissioning firm, location of head office, and types of commissioning (building types, systems commissioned etc.).

What type of organization do you currently work in?

- An independent firm specializing in Cx
- Cx/EBCx division within a larger firm
- A testing or balancing firm that also undertakes full building Cx services
- Other

In which city and province / territory is your office located?

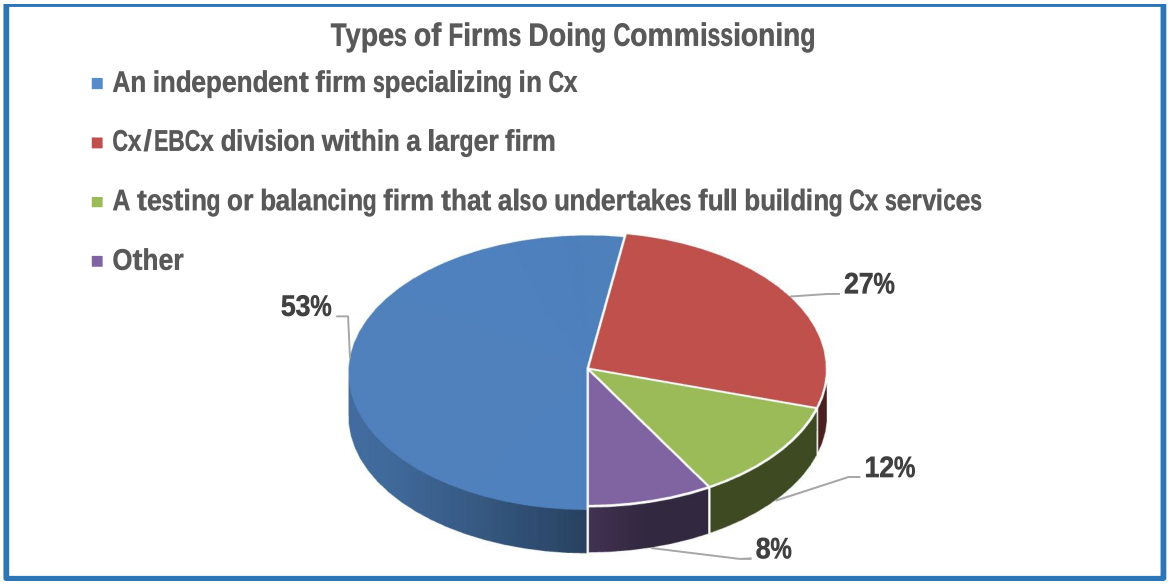
- Is this your head or branch office?

How many Cx practitioners does your organization currently have?

- How many Senior Cx Authorities/project leaders do you currently have?
- How many Junior/Cx technicians do you employ directly?
- What percentage of your workforce identifies as female?
- How would you describe the age balance at your firm?
- How much of your Cx/EBCx work do you subcontract out?

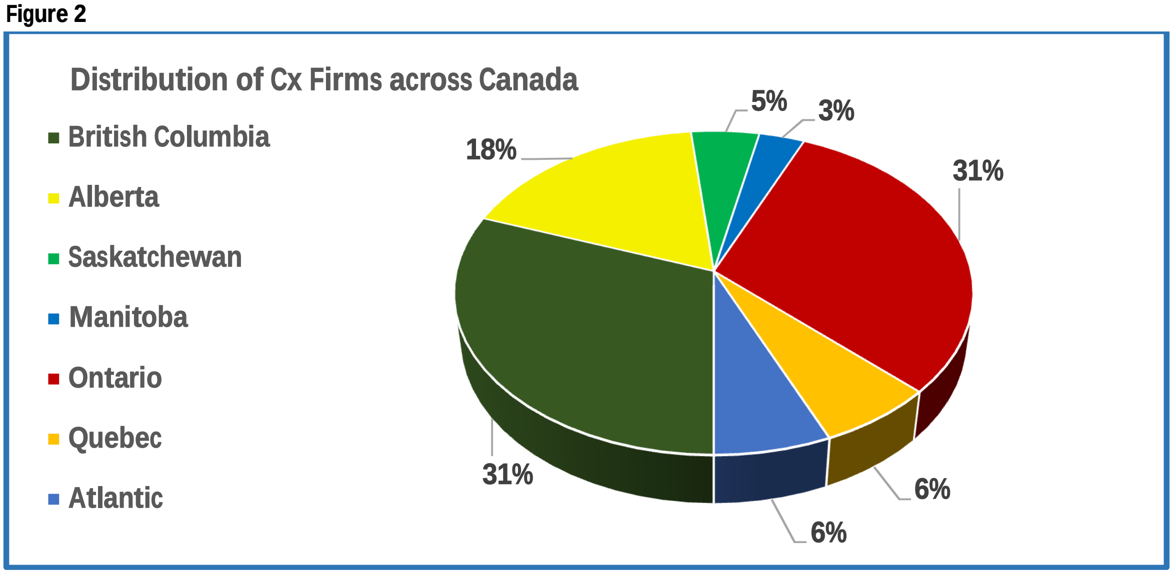
Most respondents (53%) reported being an independent firm specializing in Cx (Figure 1). The next largest group (27%) were Cx or EBCx divisions within a larger consulting firm. 12% reported being primarily testing and balancing (TAB) firms who also undertook Cx. A scattering of other firms also responded, including property management firms and general contractors (doing their own Cx), design firms, etc.

Figure 1



The self-reporting national distribution of firms' headquarters (Figure 2) is not a statistically valid proxy for the geographic distribution of commissioning activity. However, the data does align relatively closely with current statistics on Canada's non-residential building construction[1], with some apparent skewing towards British Colombia.

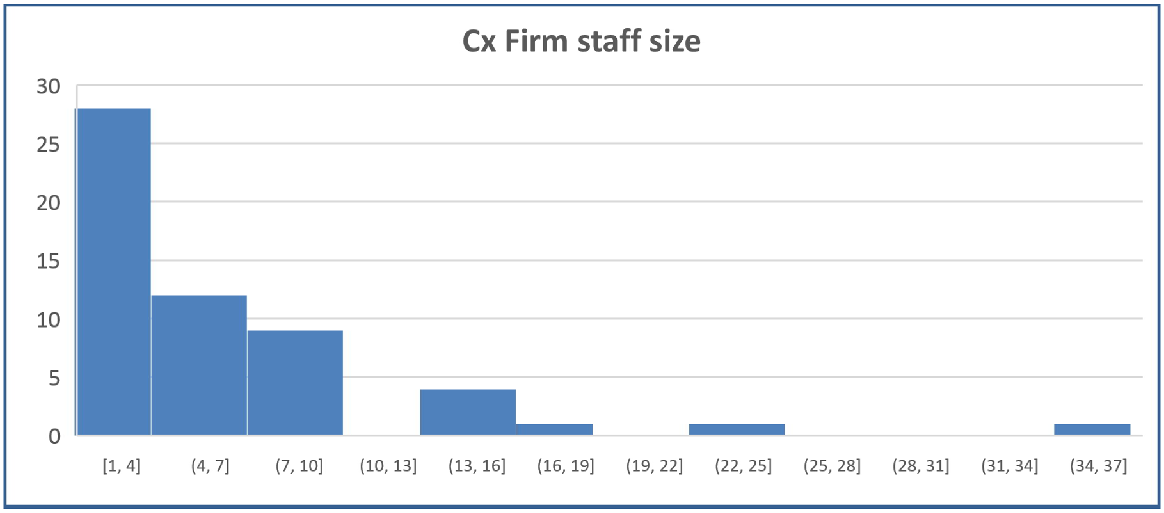
Figure 2



In response to demographic questions about firm size (and the types of commissioning performed), self-reporting indicated that most firms are relatively small and specialized or else tend to be niche divisions within larger consulting/engineering firms.

[1] Statistics Canada: 2017-18 *Investment in non-residential building construction, by province*. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3410001101

Figure 3



Given the distribution of staff sizes (Figure 3), statistics might be of limited value; nonetheless, the "average" firm employs about six staff (median = 4), with some variance by firm-type (Table 1).

Table1 – Number of Staff in Cx firms, by type.

Firm Type	Range	Average
Independent Cx specialist	1-18	4.8
Cx/EBCx division within firm	1-25	8.2
T&B firm + full building Cx	3-8	5.3

The question on each firm's "split" between senior and junior staff underscores the difficultly in distilling results into "simple" statistics. The overall reported split was about 50:50, but in reality, some firms reported having one or two senior with several juniors reporting to them, while others were comprised almost entirely of senior staff, with just one or two recently recruited juniors.

Hiring of women by Cx firms appears to be similarly variable – about 42% of firms have hired at least one female, but the likelihood definitely increases in the case of larger firms (91% of firms with 10 or more employees) and self-identified Cx divisions within larger firms (69%). The overall average among reporting firms suggests that about 20% of Cx practitioners are now female; a figure that appears to reflect the current state of the engineering/technical field in general.

Subcontracting CX work out appears to be relatively uncommon. While about 40% of the respondents reported the use of subcontractors, almost half of those do so less than 5% of the time, or else only for niche needs. Only two firms reported subcontracting out the majority of their Cx work.

3.1.2 Commissioning Projects Undertaken

Indicate how your commissioning business is divided (in terms of percentage of annual revenue), between new and existing building projects

Indicate how your client base is divided (again, by revenue percentage), between:

- Commercial Buildings (Office, retail, etc.)
- Institutional Buildings (government, education, health care, etc.)
- Residential Buildings (multi-unit high rise)
- Industrial facilities
- Other

What types of systems do you provide Cx services for?

The response to the requested ratio between new vs. existing building projects is shown in Figure 4. While a few firms reported doing a predominance of work in existing buildings, the overall bulk of projects is clearly being done in new buildings. Some variation by firm-type was noted – for example, the testing and balancing firms find almost their entire business on the new building side, while those focused on EBCx seem more likely to be the specialist firms.

Figure 4

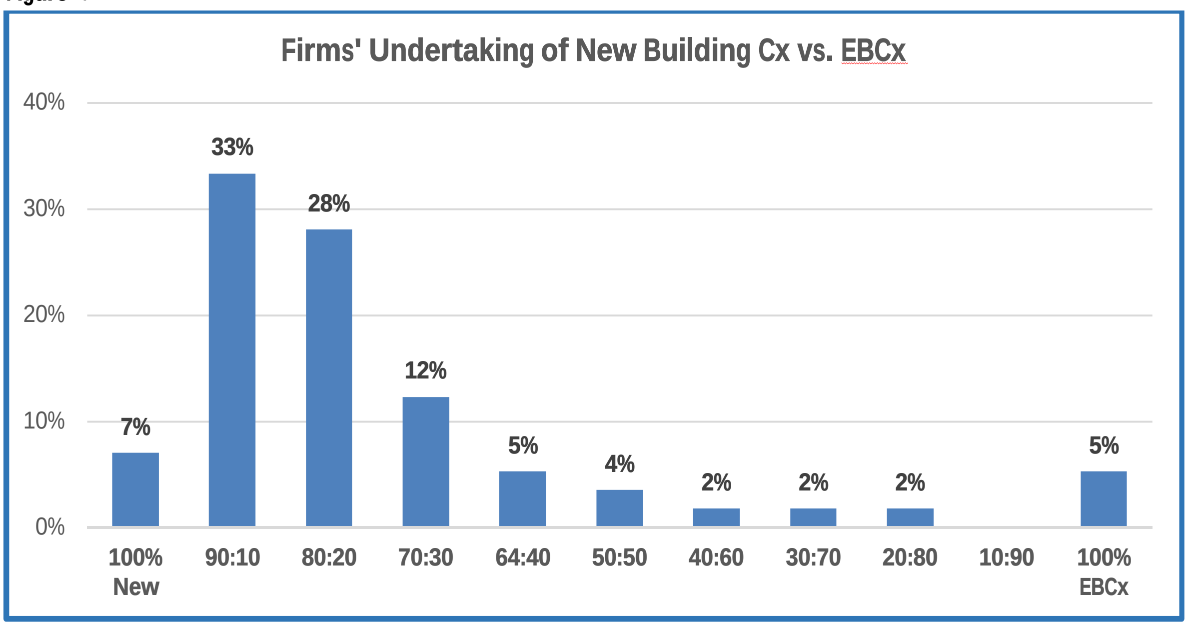
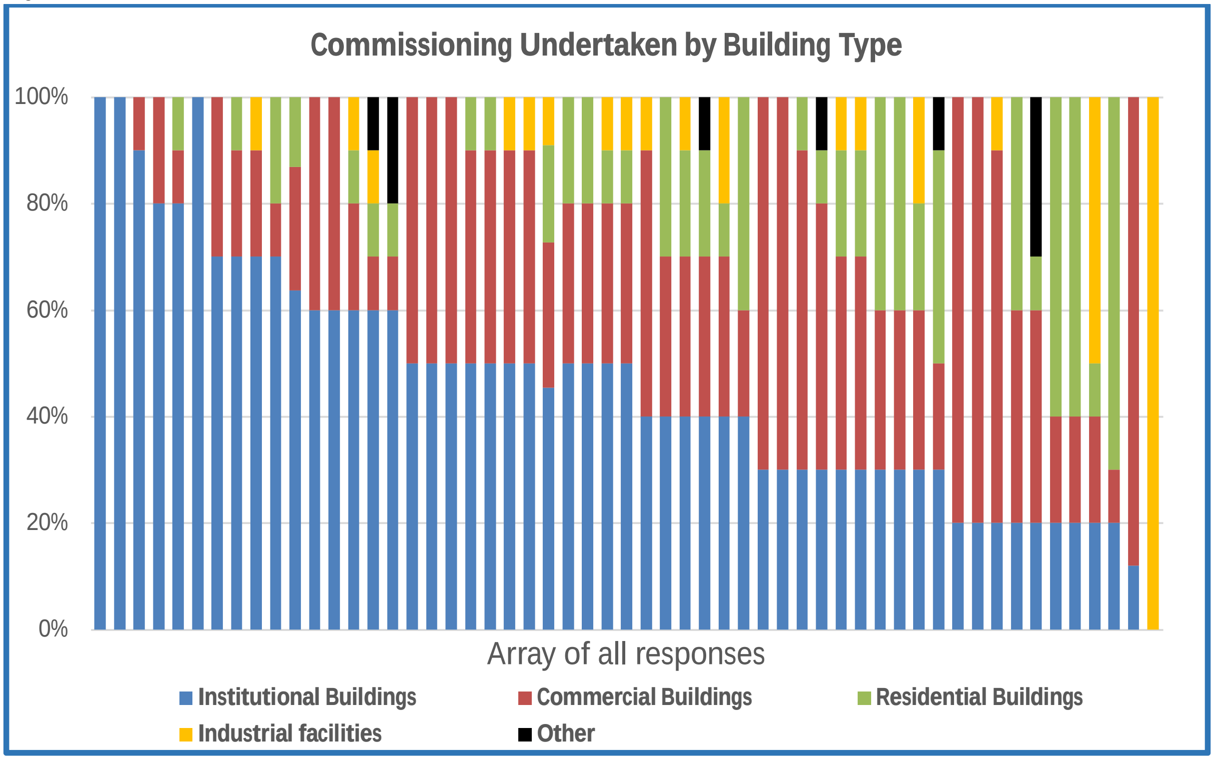


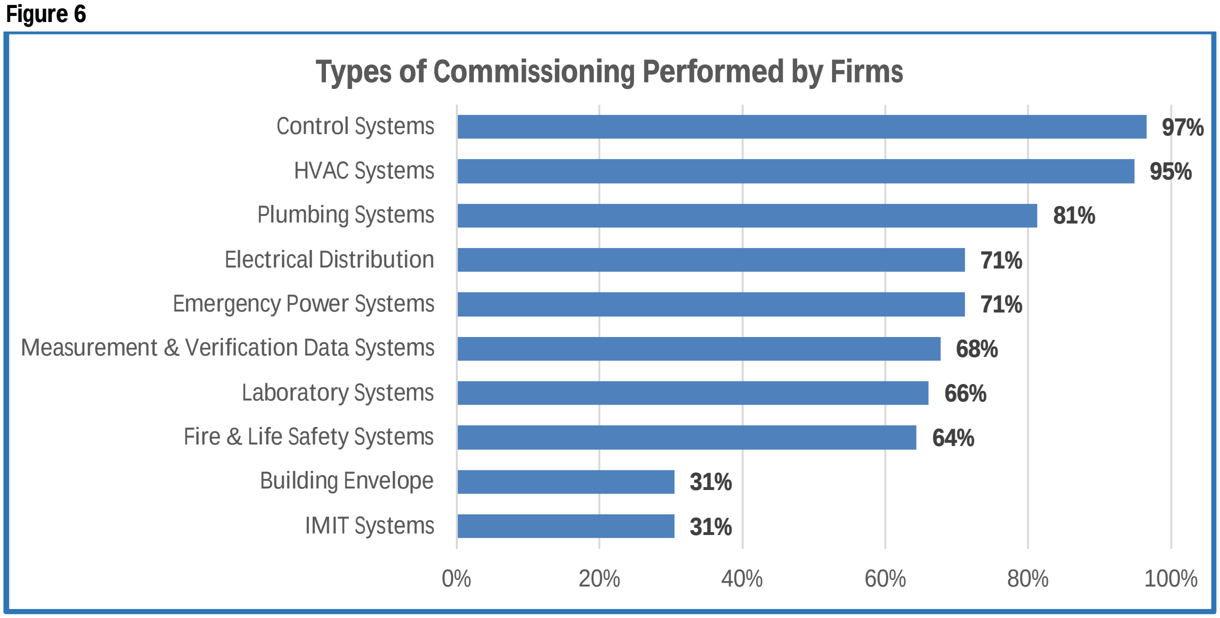
Figure 5 shows the responses to the requested breakdown of the building types being commissioned (institutional, commercial, residential or industrial facilities). Firms are clearly offering service to a wide diversity of buildings – from an exclusive focus on institutional, commercial or industrial, to everything in-between. It also appears that Cx of government and institutional facilities predominates, followed by projects in the commercial sector. When averaged together, the overall amount of Cx work reported was: 46% institutional, 33% commercial, 13% residential, 6% industrial and 2% other projects.

Figure 5



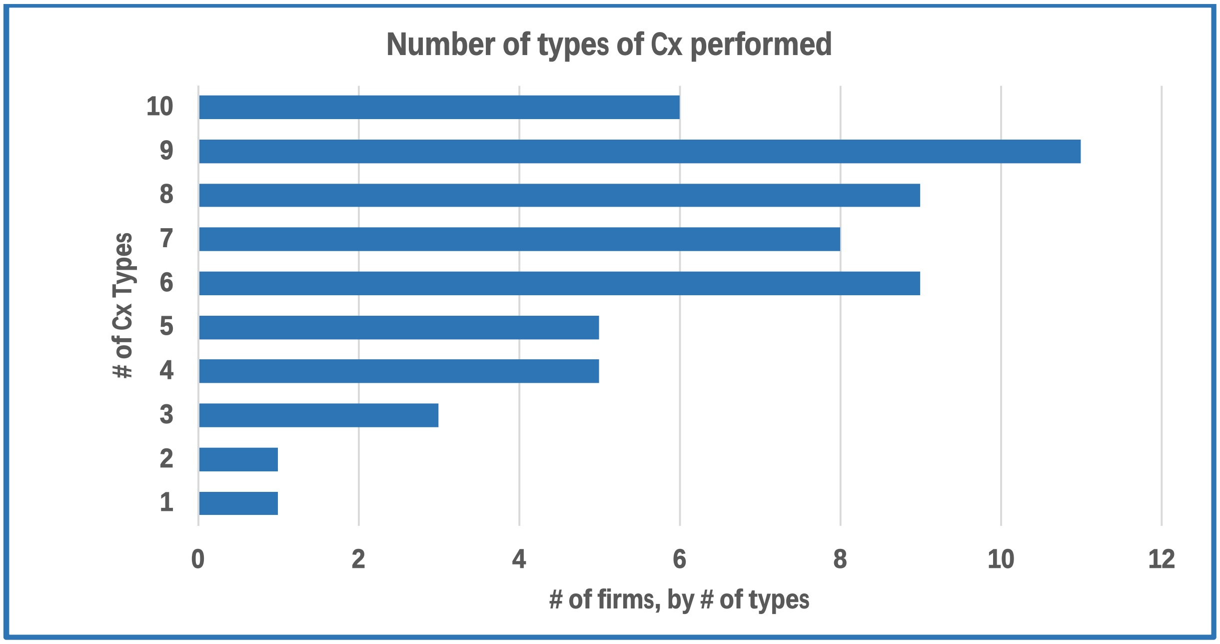
The next question dealt with the specific systems within buildings that firms are commissioning. As shown in Figure 6, there is, again, a wide diversity of service offerings, but nearly every responding firm addresses at least HVAC and control systems. Many other systems are commonly commissioning beyond those two, with a few (building envelopes, Information Management / Information Technology (IMIT) systems) only being offered by a few firms.

Figure 6



The same response set was analyzed to determine how many systems Cx firms are able to address (Figure 7). Almost two thirds of the responding firms offer Cx on between 6-9 systems. More specialized firms (three or less types) are finding a business niche, as well.

Figure 7



A reasonable overall conclusion from the last several questions is that there is a great diversity of Cx firms across Canada – and in the specific services, they offer. Such diversity can be considered to be a strength of the Cx profession, in that firms are collectively giving potential customers a great variety of tailored service offerings to choose from. The inherent advantage of this diversity could be undermined, however, without a common understanding of what Cx is, coupled with a universal commitment to consistency and quality of these respective service offerings.

3.1.3 Business Growth

A primary goal of the practitioner survey was to gain a better sense of the current size and scope of the delivery of commissioning services across Canada, as well as estimating its potential to expand. Respondents were therefore asked to provide estimates of the size of their business during the current year (2018) and compare this, going both back to 2014 and 2016 and forward to 2020 and 2022.

Please provide a sense of your past (2014 & 2016), current and anticipated future (2020 & 2022) Cx/EBCx business in terms of:

- # of active clients:
- # of completed projects:
- Total floor space (in square feet) of projects
- Total Project Revenue, expressed as a percentage of 2018's
- Total number of Cx Staff (i.e., +/-), compared to 2018

In order to meet your Cx/EBCx work load your current staff size is:

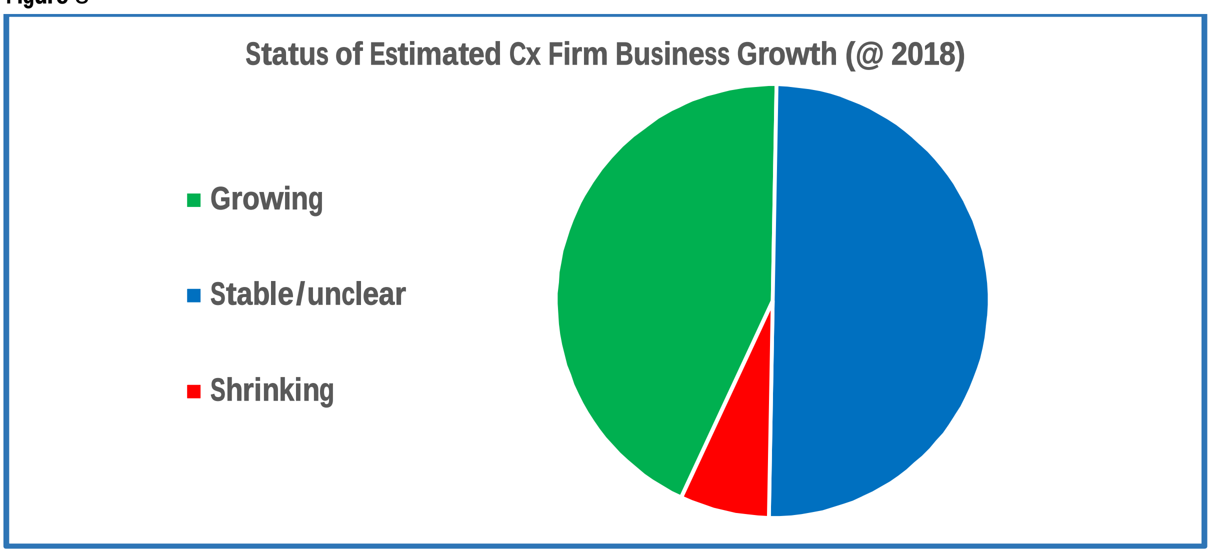
- Sufficient to meet your work load
- Needs to grow but recruitment and retention is easy
- Needs to grow and recruitment and retention is hard
- Currently too large/we are considering downsizing

The response rate for this set of questions was somewhat lower – only about 2/3 of those who completed the rest of this survey answered these questions. In addition, the responses themselves were often partial and/or ambiguous. This was likely due to a few factors, including the challenge of clearly articulating the most feasible question and the burden placed on respondents to gather and provide all the necessary data. Consequently, the data submitted proved to be too variable or incomplete to analyze extensively, but it was encouraging to be able to conclude in Figure 8 that:

- 43% reported a pattern/expectations of business growth
- 50% appear to be more-or-less stable
- 7% reported significant indications of shrinking business

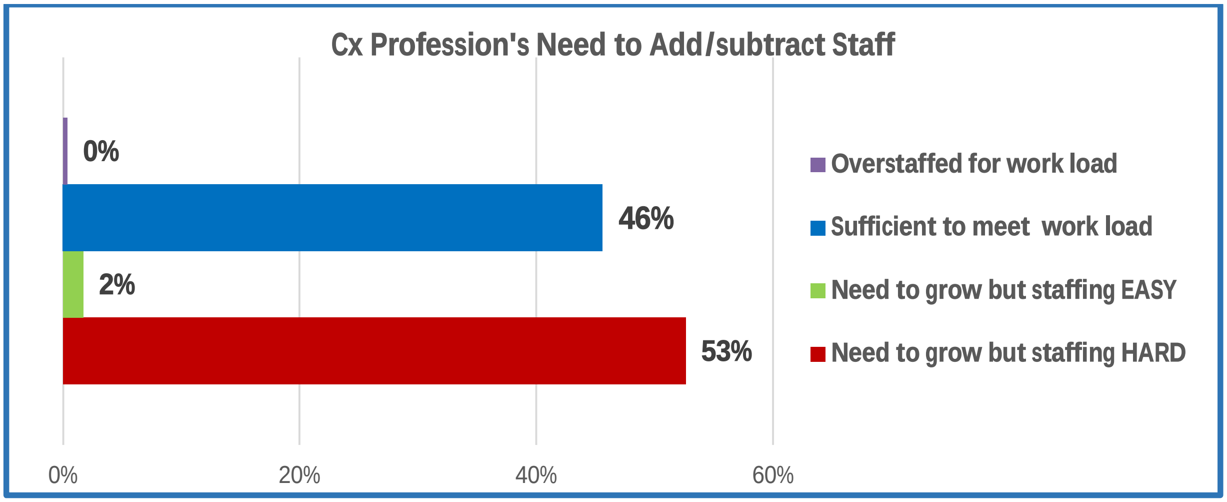
Little correlation was noted between this reported business growth status and other parameters such as firm type or size, although the larger independent firms more often reported a trend towards growth.

Figure 8



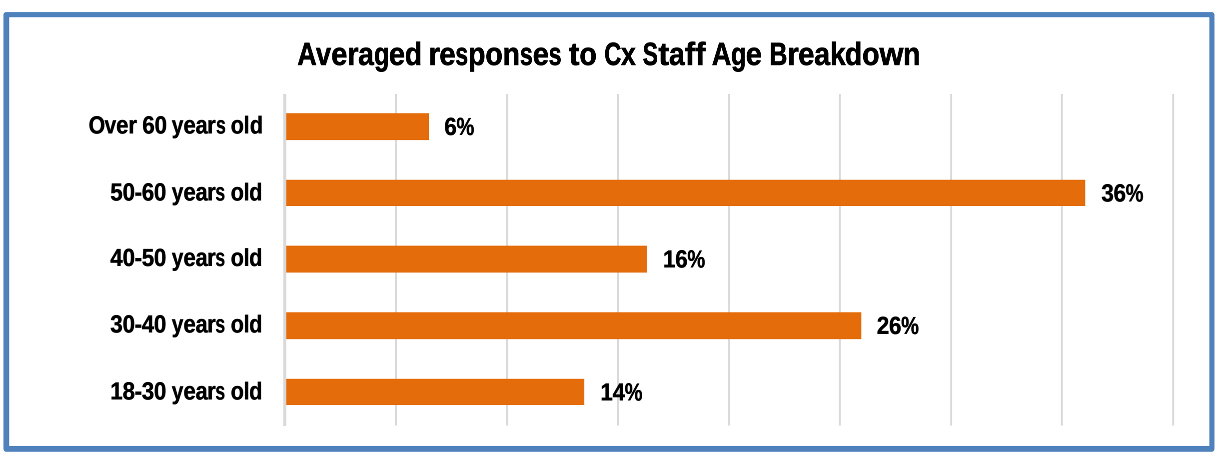
More robust responses were provided to the complementary question posed about Cx firms' need to grow, in terms of adding (or reducing) staff, in association with the aforementioned expectations of business change. As shown in Figure 9, virtually no one feels that they are currently over-staffed, while over 50% believe they need to grow in order to meet anticipated future business. This result reinforced the general response to the preceding question (of anticipated growth or decline in business). Taken together, they suggest a positive overall conclusion that the commissioning business in Canada is, at the least, stable, and actually growing for many firms.

Figure 9



One potentially worrisome conclusion from this same question is that almost every firm predicting staff growth also reported that finding, training and retaining new staff is difficult (Figure 10). This finding inspired further analysis of the earlier question about the firms' age demographics. As previously noted, "senior-junior" splits averaged out to about 50:50, but the underlying reality is a relatively bimodal age distribution within firm staffs (Figure 10). Of particular note however, nearly **40%** of reporting firms have **at least 50%** staff **over 50 years of age** (the entre staff is over 50 for nearly **20%** of the firms,). These two findings together (this many firms with a relatively senior workforce and frequently expressed sentiment that firm growth is needed – including, presumably, the need to replace retirees) point to an emerging issue around succession planning across the Cx profession. Indeed, this concern about finding, training and developing new staff was re-iterated during a later question about key industry challenges.

Figure 10



3.1.4 Barriers, Challenges and Foreseen Changes in the Cx industry

Cx practitioners were also asked about their perceptions on current barriers to the uptake of commissioning services; the results of that question will be presented in **Section 3.3.** The survey closed with a pair of open-ended questions on the current challenges and foreseen changes to the commissioning industry.

> Please describe any changes you foresee in the Cx industry over the next 5 years.
>
> Please describe any challenges or hindrances to the Cx industry over the next 5 years.

Thirty-five participants responded to these questions, but many of the answers provided tended to overlap between the two. The following highlights represent a distillation of the most common themes that emerged from the responses to these two questions:

- Existing building commissioning (EBCx) remains a relatively "untapped" market area with great potential – a significant opportunity exists for greater market uptake of EBCx;
- There is a sense that potential customers are seeking greater assurance of quality and consistency of Cx services, which could be aided through the introduction of a Cx practitioner certification or accreditation in Canada. Noting that the American market features a few competing certifications, the Canadian solution would ideally be to have just one, mutually-accepted certification.
- Further related to the issue of quality and consistency:
    - the profession should resist a trend towards "paper commissioning"(i.e., an over-emphasis on voluminous paperwork, at the expense of hands-on Cx work) and
    - there is a collective need to ensure and promote high-quality Cx over low-budget "commodity" Cx;
- Digitization of Cx processes and verification techniques (e.g., data analytics) will grow and gain importance for Cx practitioners;
- There is a growing need to address succession planning as senior Cx providers retire and to foster the next generation of Cx professionals;
- Related to the above, recruitment, training, professional development and opportunities to provide experience for entrants to the Cx profession are all crucial needs to be addressed.

3.2 Commissioning Customers

173 stakeholders responded to the Cx customer survey, out of 3,000 members invited by BOMA Canada to participate. An exact response rate (or percentage of the market represented) proved very difficult to determine, as the invitation list included members who are not necessarily building owners, managers or operators. In addition, over one-third of the respondents did not specify the size of their portfolios. Analysis of the responses received to the question on portfolio size (Table 2) does suggest that between 3,000 and 10,000 buildings were represented by the overall survey response.

Table 2 - Owner response distribution:

Category	# / % of those who specified
1 building	20 (17%)
2-5 buildings	24 (20%)
6-50 buildings	37 (31%)
51-100 buildings	14 (12%)
Over 100 buildings	19 (16%)
Unspecified	61 (35% of total respondents)

3.2.1 Experience with New Building Commissioning (Cx)

Respondents were asked to report on their uptake and satisfaction with commissioning services which, for the purposes of this survey, were divided into the following two definitions:

- **Commissioning (Cx)** – a quality-control practice applied to the construction and operation of **new** commercial/institutional buildings– or to major renovation projects in existing ones;
- **Recommissioning (RCx)** – the specific application of Cx principles to restore an existing facility to optimal operation (this term may also be broadly applied to retro-commissioning or the implementation of ongoing commissioning).

Have you undertaken commissioning (Cx) in a new building project? (yes/no)

Were you satisfied with the commissioning aspect of your new building? (yes/no)

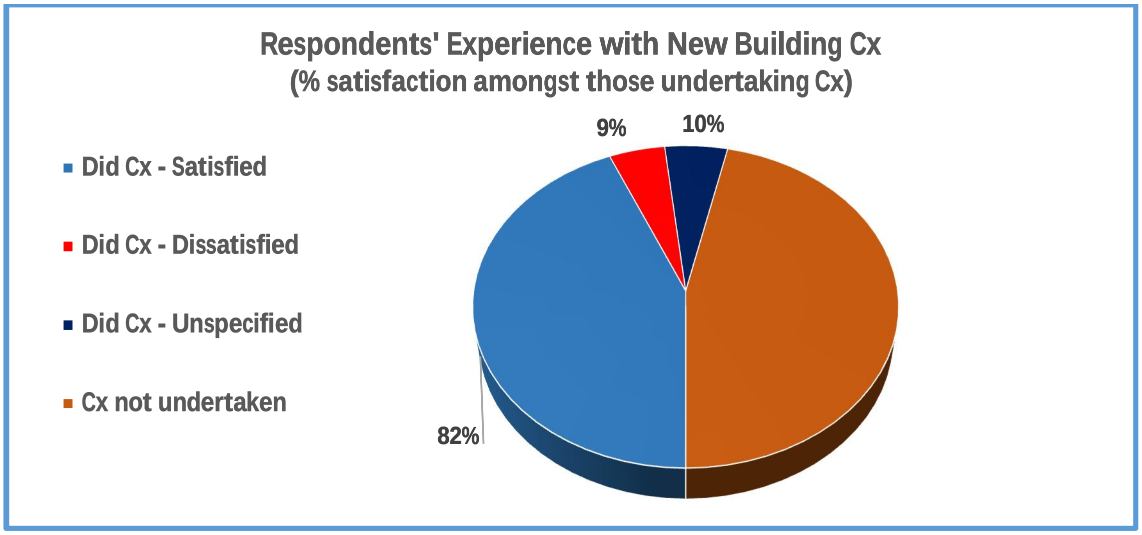
- If yes (select all that apply):
    - Yes - I would do it again on other projects.
    - Yes - I would recommend commissioning to my peers.
    - Yes - I would be happy to submit my project for an NRCan case study

- If no, what was the main reason that were you dissatisfied with the commissioning (Cx) on your project?
    - We feel it was poorly executed – it did not result in a final building that sufficiently met the design intent
    - The project's commissioning was completed in a technically proficient manner, but we experienced issues with construction team (conflicts, delays, etc.)
    - Insufficient value for money – the Cx was technically proficient and collaborative, but we nonetheless did not conclude that it was worth the extra expense
    - Other (please specify)

Nearly everybody participating in this survey responded to the question about undertaking commissioning in new building projects, with **53%** reporting having done so (Figure 11). Given the uncertainty associated with the overall survey response rate, however, we cannot conclude this to mean that 53% of new building projects are actually being commissioned (for example, it could be that those who are doing Cx/RCx are also more likely to have chosen to participate in this survey). It is nonetheless encouraging to report that an impressive **82%** of respondents who had tried it also said they had been satisfied with the commissioning on their projects. 77% of those satisfied customers stated that they would hire commissioning services again and 72% said they would recommend it to their peers. Six respondents were satisfied enough to be willing to consider a case study based on their project.

Only 8% of respondents reported dissatisfaction with their Cx (10% did not specify one way or the other). Half of those respondents gave “poorly executed Cx” as the main reason for their dissatisfaction.

Figure 11

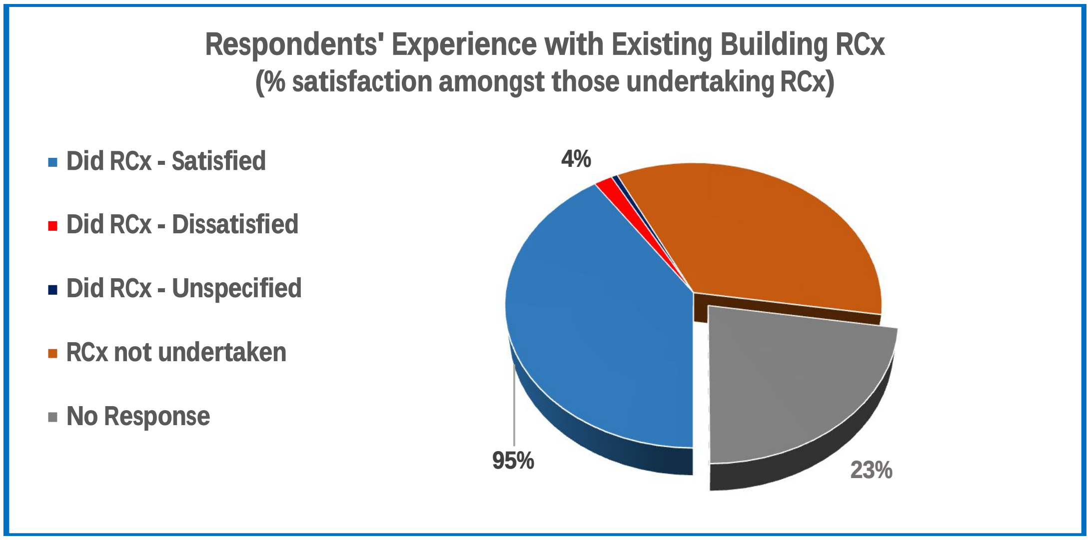


3.2.2 Experience with Existing Building Recommissioning (RCx)

> Have you undertaken recommissioning (RCx) in an existing building? (yes/no)
>
> Were you satisfied with the recommissioning project on your building? (yes/no)
>
> - If yes (select all that apply):
>   - Yes - I would do it again on other projects.
>   - Yes - I would recommend commissioning to my peers.
>   - Yes - I would be happy to submit my project for an NRCan case study
>
> - If no, what was the main reason that were you dissatisfied with the recommissioning (RCx) project?
>   - The RCx was poorly executed – building operations not successfully optimized
>   - The RCx provider was technically proficient, but there was insufficient buy-in from my operations/O&M team – the project caused unacceptable among of disruption
>   - There was insufficient savings/payback realized from the project – it may have succeeded technically, but did not yield the anticipated/predicted energy savings
>   - Other (please specify)

Only 134 of the survey respondents (77%) responded whether they had or had not undertaken recommissioning (Figure 12). Of these, **55%** reported having done at least one RCx project in an existing building, but if assessing these confirmed responses against the entire cohort who participated in the survey, the real uptake rate (amongst respondents) may actually be as little as 43%. Additional context to consider around this result is that BOMA membership tends towards owners and managers of existing (vs new) buildings (indeed, exclusive management of an existing building portfolio was the most commonly provided reason as to why new building Cx had not been undertaken). The response to this question therefore appears to align, at least to some degree, with the Cx practitioners' reported lack of business on the existing building side of the market.

Figure 12



Respondents who had tried recommissioning, however, did report being very satisfied with the experience – even more so than for new building commissioning. As also noted in figure 13, fully **95%** reported being satisfied with the RCx done in their building(s); 84% of those also stated that they would do RCx again, while 69% said they would recommend it to their peers. Six respondents were satisfied enough to be willing to consider a case study based on their project. The very few who reported being dissatisfied felt they had derived insufficient savings/payback realized from the project.

Nearly one-third (32%) of survey respondents reported having undertaken Cx on both new and existing building projects. As above, this cohort appeared to be very satisfied with their experience (an overall **91%** satisfaction rate).

3.2.3 Demographic Analysis

Respondents were also asked a number of demographic questions (extent of portfolio, type, location and size of buildings), in order to provide the basis for analyzing the reported willingness to commission and satisfaction against parameters such as location or ownership-type. As noted earlier, only two-thirds of the respondents provided this sort of data, making it difficult to undertake a detailed analysis. The following observations are nonetheless offered for consideration:

- The uptake of both Cx and RCx appeared a little higher among those who chose to also answer the demographic questions (at least 60% in each case).
- Public sector (government/institutional) owners appear to be more likely to have undertaken Cx on both new and existing buildings than owners with exclusively private-sector portfolios. This appears to support the Cx practitioners reported emphasis on institutional buildings (Figure 5, in Section 3.1.2)

- Differentiation by building type was complicated by a high diversity in reported portfolio composition, but the above result was reflected in a reportedly strong uptake within portfolios that include institutional and/or healthcare facilities. Those with retail and light industrial facilities also appear to have more frequently tried Cx or RCx, while this practice appears less common in multi-unit residential buildings (MURB); again, the latter finding echoes what the practitioners reported about relatively infrequent work on the residential side.
- Owners of larger portfolios seem more likely to have undertaken both Cx and RCx.
- There is no particular evidence of geographic distinctions in either the uptake of, or satisfaction with, Cx services.

3.3 Market Barriers to Commissioning Uptake

Both surveys pursued the question of perceived barriers to the broad uptake of commissioning services within the industry. Responses to these questions are presented together in this section of the report for ease of comparability.

3.3.1 Cx Practitioners

Respondents to the Cx Practitioner survey were asked to rank several prospective barriers to uptake of Cx services (so that individual response counts were weighted by their placings). These weighted rankings are shown in Figure 13.

What do you believe are the main barriers to greater uptake of Cx/RCx services? (please rank):

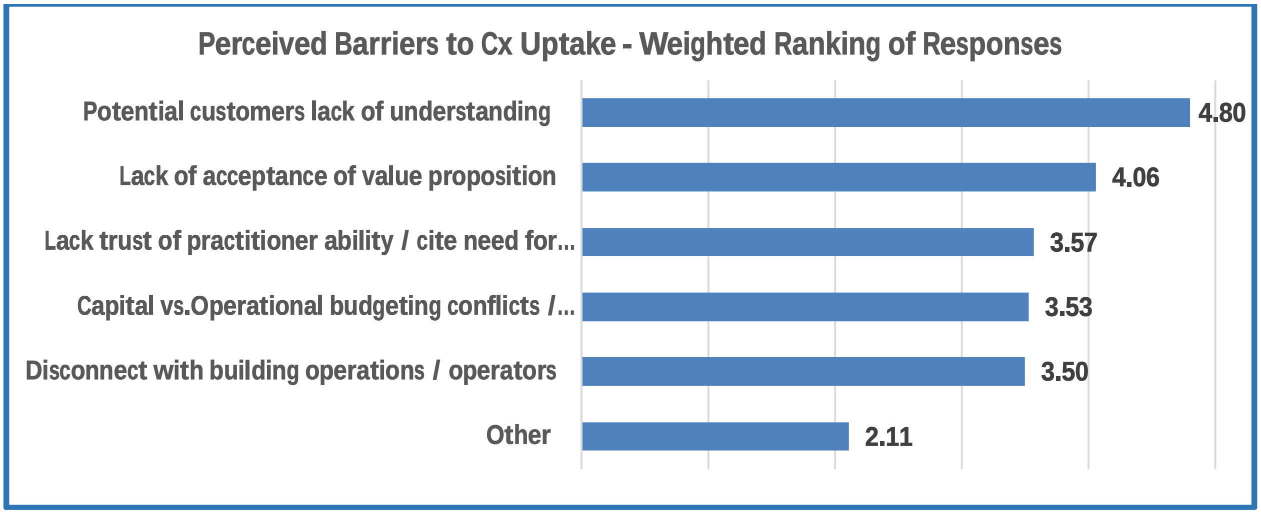
- Potential customers don't appear to understand what Cx/EBCx are and/or don't understand how these services are performed
- Potential customers do understand the concept of Cx/EBCx, but don't appear to trust/accept the value proposition
- Potential customers understand the Cx value proposition, but have expressed issues with consistency of practitioner ability and/or cite a need for dependable practitioner certification
- Potential customers express conflicts over Capital vs. Operational budgeting (likely to be more a barrier for EBCx than new building Cx), or other project planning barriers
- Disconnect with building operations (e.g., operations is contracted out or in-house staff limitations) impedes effective implementation of EBCx projects
- Other (please specify)

Almost half of the responding Cx professionals ranked their potential customers' **lack of understanding** of what Cx is and how it's done as the primary barrier to further market uptake (even those who chose others as #1 consistently ranked this one as a strong barrier). "Disconnect with building operators or operations staff" was the second most-often picked as the greatest barrier, but once the overall weightings were applied, the second-strongest overall barrier suggested was the customers' apparent lack of acceptance of the Cx value proposition.

Ten respondents provided **other** suggestions, which fell into three categories:

- questioning their peers' definition of or consistency of Cx services,
- citing LEED (the Canadian Green Building Counsel's green building certification program) as a Cx driver, but as both a positive and negative influence,
- similarly citing government demand for Cx as both positive and negative.

Figure 13



3.3.2 Cx Customers

On the Cx Customer survey, this "market barrier" question took the form of asking respondents to suggest the single most significant reason for not trying either Cx or RCx.

What was the principal reason for not undertaking commissioning (Cx) in a new building project?

- We don't understand what Cx is or how it works
- We understand the concept of Cx, but don't believe/accept the value proposition
- We understand basic Cx value proposition, but mistrust consistency of practitioner qualifications and would prefer a formal industry accreditation we can refer to
- Other

What was the principal reason for not undertaking recommissioning (RCx) in an existing building?

- We don't understand what RCx is or how it works
- We understand concept of RCx, but don't believe/accept its value proposition
- We understand the RCx value proposition, but mistrust consistency of practitioner ability/certification
- It is fundamentally an issue of Capital vs. Operational budgeting – RCx projects don't "fit" our current financial planning strategies
- Our operations and maintenance are contracted out, and we have not been able to engage the third-party operator in undertaking RCx
- Other

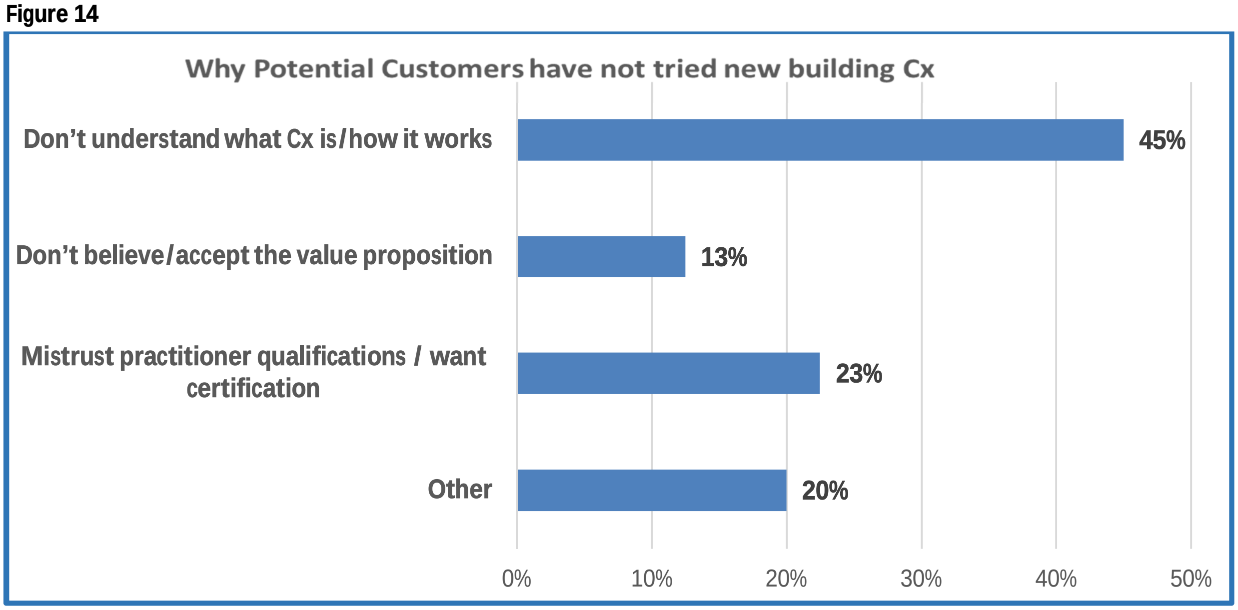
As noted earlier, the most commonly stated reason for not having tried commissioning was that the respondent managed portfolios consisting exclusively of existing buildings (a “not-applicable” response option was not provided). After filtering out these non-applicable responses, only 50% of those who had not tried new building Cx were willing to provide a specific reason (summarized in Figure 14).

A lack of familiarity/understanding about commissioning was far-and-away the most often cited reason for not having commissioned new buildings. While the methodological difference (first-pick vs. ranking) may inhibit fair comparability between the two surveys, it is worth noting how strongly this particular result echoes the main concern voiced on the practitioner side (Figure 14). On the other hand, there was relatively little indication that those who understand Cx fail to accept its value (which does contrast with practitioners’ impressions).

The several “other” responses mostly fell into two categories:

- Those who cited budget concerns, suggesting that they don’t dispute the value of Cx, per se, but don’t have a mechanism to budget for it’s integration into projects;
- Others who appeared to resist an untried idea simply because it was untried.

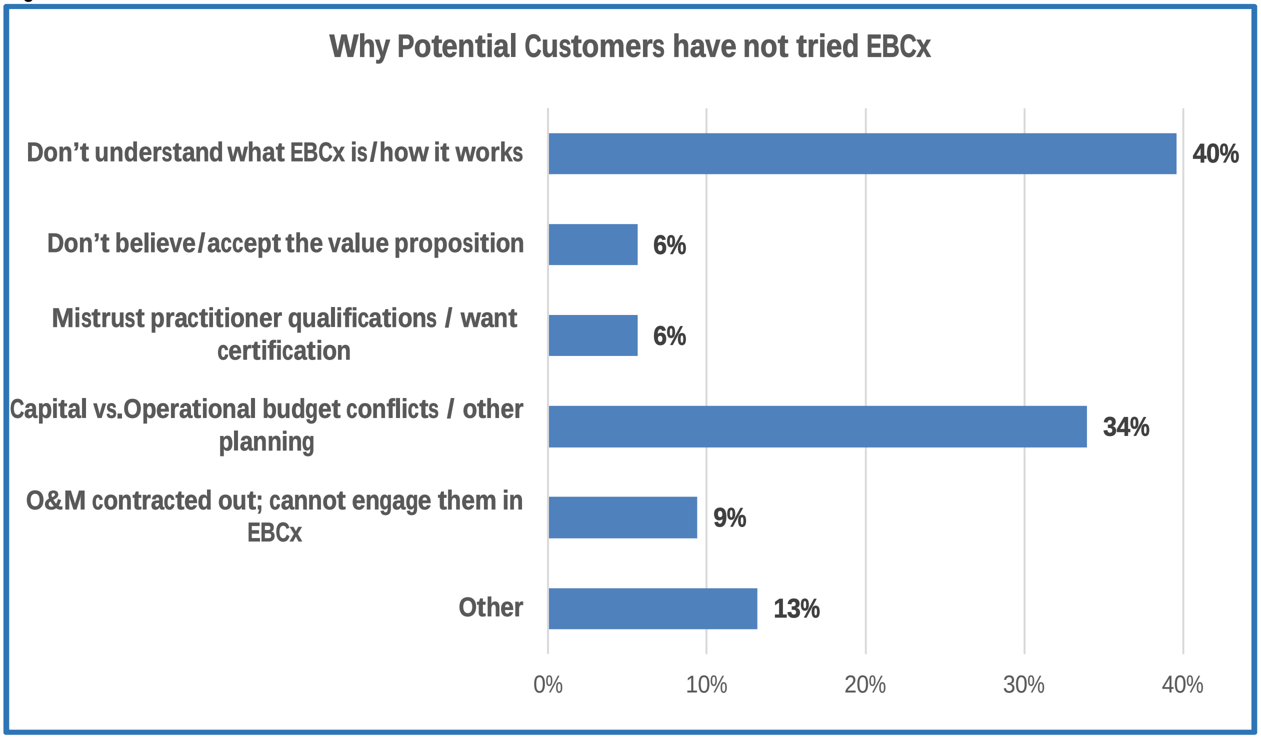
Figure 14



Almost all of those who had not tried recommissioning (RCx) did respond to this question (Figure 15); as above (and once again in alignment with the practitioners), the most-often cited reason was a sense of not understanding RCx. In this case, the “capital vs. operational” budget issue was also cited as a significant barrier, echoing another key concern voiced by the Cx practitioners.

No single “other” response especially stood out among the RCx responses, although a few echoed the above sentiment of simply resisting an untried idea.

Figure 15



4.0 Overall Impressions

This pair of surveys was undertaken to gain a better understanding of the current state of the commissioning profession, market penetration of Cx services across Canada and impressions held by both Cx practitioners and customers about the value and quality of Cx delivery. Some logistical and analytical challenges prevented collection of statistically defensible results, but several key findings and insights were extracted from this exercise:

- It was not possible to ascertain the exact market penetration of either new or existing building Cx in Canada, but owners who have tried Cx/RCx generally seem satisfied with the results, are willing to do more projects and are willing to recommend it to peers.
- A fundamental lack of understanding of Cx, among customers who have not tried it, continues to be the most significant barrier to Cx uptake in the market; greater effort by its proponents is therefore needed to clarify Cx principles, process and value.
- Among those who do understand Cx, most generally understand its value, but projects may nonetheless be impeded by capital/operational budget conflicts.
- New building Cx presently appears to be a more accepted practice than EBCx (RCx); while certain firms are focused on the existing side, Cx for new construction is generally driving the majority of business for Cx firms;
- The building market benefits from a strong diversity of Cx firms and services. This diversity is likely a strength – but quality and consistency of service delivery will be crucial to ensuring continued market growth of Cx as a service offering;

- Cx firms are generally stable or growing, but at the same time see adding and developing staff as a key challenge; this issue may be compounded by the reality of an aging demographic in many firms. These issues combine to suggest greater priority is needed on the recruitment, training and professional development of new entrants to the Cx profession;

NRCan presented preliminary results of both surveys to the *National Conference on Building and Facility Operations* in June 2018. Audience members (largely commissioning practitioners, along with general contractors, facility managers and utility and government officials) generally concurred that these findings reflected their own impressions of the current Cx profession and market. There was further agreement that the results of this and future surveys would help them to clarify and prioritize "messaging" about Cx and its value.