Toward Greater Transparency Regarding Cross-Sector Partnerships for Technology Development

Katherine Occhiuto & Sarah L. Todd, Carleton University
Tina Wilson, Glasgow Caledonian University &
Joel Z. Garrod, St. Francis Xavier University

ABSTRACT
This article explores the problems and potential of funded short-term cross-sector partnerships to address technological deficits in the nonprofit sector by engaging with the partners of a concluded project. The partnership case study that forms the backbone of this article was a three-year nationally funded nonprofit-industry-academic partnership. The objective of the partnership was to increase the data collection capacity of a national nonprofit organization and its affiliate centres through the development of a web-based app. This article highlights the challenges and differing experiences of nonprofit-industry-academic partnerships more generally, and technology-development partnerships more specifically.

RÉSUMÉ
Cet article explore les problèmes et le potentiel de partenariats intersectoriels subventionnés à court terme à gérer des déficits technologiques dans le secteur sans but lucratif en collaborant avec les partenaires de projets déjà conclus. Plus précisément, l’article se fonde sur une étude de cas effectuée sur un partenariat de trois ans subventionné à l’échelle nationale entre le milieu académique et le secteur sans but lucratif. L’objectif de ce partenariat était d’augmenter la capacité d’un organisme national sans but lucratif et de ses centres affiliés à recueillir des données en développant une application Web. Cet article souligne les défis et les diverses expériences des partenariats entre le milieu académique et le secteur sans but lucratif en général, et les partenariats consacrés au développement technologique en particulier.

Keywords / Mots clés : Cross-sector partnerships; Nonprofit-industry-academic partnerships; Technology-development partnerships; Nonprofit technology / Partenariats intersectoriels; Partenariats entre le milieu académique et le secteur sans but lucratif; Partenariats consacrés au développement technologique; Technologies d’organismes sans but lucratif

INTRODUCTION
This article grapples with the problems and potential of term-funded cross-sector partnerships to address technological deficits in the nonprofit sector through a case study. The partnership that forms the backbone of this article was a three-year nationally funded nonprofit-industry-academic partnership. The objective of the partnership was to increase the data
collection capacity of a national youth-serving nonprofit organization and its affiliate youth centres through the development of a web-based app. The improved data collection was intended to support these organizations to produce the data required to secure additional funding and enhance research and evaluation capacity within the sector more generally. This article revisits stakeholders' perceived benefits and experiences one year after the conclusion of the partnership, which was a year and a half after the technology launched.

The impetus for using this project to explore term-funded nonprofit-industry-academic partnerships as a strategy to address technological deficits in the nonprofit sector was threefold. First, the academic team at the Ontario-based university wanted to understand the effects of the app and partnership after the conclusion of the project. Second, the academic team wanted to respond to audience requests at presentations during the 2019 Congress of the Humanities and Social Sciences in Vancouver, British Columbia. At that conference, attendees shared the need for more open recounts of projects such as this one to support advancements about partnership-based research and development. They also expressed a need to hear transparent accounts about the longer-term outcomes of projects such as this. Third, it is important that scholars contribute to a “practice of transparency” (Roose, Roets, Schiettecat, Pannecoecke, Piessens, Van Gils, Op de Beeck, Vandenhole, Driessens, Desair, Hermans, Van Robaey, Vandenbroeck, & Vandekinderen, 2016, p. 1021) by collecting and sharing data on the complexities and politics of term-funded partnership-based work. As a result, this case study has a dual focus on partnerships and technology development; they are woven together to understand how key elements reshape cross-sector partnerships as a strategy to meet the technology needs of nonprofits.

Case studies offer “in-depth exploration[s] from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a ‘real life’ context” (Simons, 2009, p. 21). Two sets of perspectives are included here. First, the authors draw on a series of semi-structured interviews conducted with the project partners—a private technology company and a national nonprofit organization—and with two Ontario youth centre collaborators. Second, we incorporate our reflections as academic partners in the project. When using “we” or “our” in this article, we are referencing the authors of this article who are all members of the Ontario region’s academic team. Where possible, we have tried to highlight disagreements and tensions between the partners and the authors of this article, but clearly, even with such intentions, the primary lens of this article is the Ontario academic team, so it is, at best, semi-transparent.

As a result of revisiting the project after its conclusion, some partners had moved on and key stakeholders had left organizations. The original project involved three community youth centres in and around Edmonton, Alberta. The Edmonton group of organizations was connected to a local university that was a partner in the project. The project partner at the Edmonton-based university was not interested in participating in a follow-up. In part, this was a capacity issue. There was no funding to support the case study development process and the centres and researchers needed to prioritize their existing projects. As a result, the data primarily focuses on the Ontario-based sites and the Ontario academic team’s experiences. The inability to track and follow up on the experiences of all partners and collaborators speaks to the challenges of research projects in which incentives are tightly bound in timeframes.

While the overarching aim of developing this case study was to understand the project’s effects one year after it concluded, it became clear that partnership processes were tightly bound to the project’s effects. As such, this case study contributes to the literature by offering an analysis of the effects of a term-funded nonprofit-industry-academic partnership and, to a lesser extent, examines the partnership processes that led to these effects. While there is increased literature attending to nonprofit-academic (Levkoe & Stack-Cutler, 2018; Schwartz, Weaver, Pei, & Kingston Miller, 2016), nonprofit-industry (Austin & Seitanidi, 2012), and state-nonprofit-industry partnerships (Brock, 2018), nonprofit-industry-academic partnerships remain understudied. Even less literature is available interrogating the composition of cross-sector partnerships formed to develop technologies that support the nonprofit sector. Thus, this case study and accompanying analysis re-
sponds to calls for more detailed accounts of information technology (IT) collaborations, including researcher reflections on project processes, achievements, and shortcomings (Meurer, Muller, Simone, Wagner, & Volker, 2018).

CROSS-SECTOR PARTNERSHIPS FOR TECHNOLOGY DEVELOPMENT

Individual organizations and sectors often lack the necessary knowledge and resources to tackle complex social issues on their own (Austin & Seitanidi, 2012; Bryson, Crosby, & Stone, 2006; Clarke & Crane, 2018; Laforest, 2011). Cross-sector partnerships have, therefore, been identified as a means through which social problems can be effectively addressed (Clarke & Crane, 2018; Levkoe & Stack-Cutler, 2018; Mody, Wang, Hoyt, & Ferguson, 2020; Schwartz et al., 2016). Some tensions arise, however, when nonprofit organizations are pressured, particularly through funding, to look beyond their sector for allies to meet their communities’ needs (Brock, 2018). These pressures can be experienced as burdensome for nonprofit partners, especially when faced with pressures to project grandiose outcomes to secure funding (Kelly & Caputo, 2011). Such tensions are further escalated with technology development partnerships, as technologies require ongoing resources to remain functional (Meurer et al., 2018). In addition to these tensions, there are challenges with demonstrating, evaluating, and measuring the effects and processes of cross-sector partnerships, with little consensus regarding the best way forward (Austin & Seitanidi, 2012; van Tulder, Seitanidi, Crane, & Brammer, 2016).

In their day-to-day operations, nonprofit organizations typically use technology to support administration and control functions, including operations data and finances (McNutt, Guo, Goldkind, & An, 2018). Acquiring and maintaining administrative technology is challenging because most funders support service delivery but not infrastructure costs and because technology is difficult to maintain or update without ongoing access to relevant expertise and reliable financial support (McNutt et al., 2018). In addition to these difficulties in acquiring and maintaining technologies, there has been a historic disconnect between those who design technologies for the sector and those who use them. This disconnect has plagued many nonprofit organizations with technologies that hinder rather than support the work of front-line practitioners (Ince & Griffiths, 2011; Munro, 2005; Tregeagle & Darcy, 2008) and create potentially non-consensual big data systems of service users and participants (Gillingham & Graham, 2017).

Participatory and user-centred technology design processes have been proposed in response to these challenges (Carroll & Rosson, 2007; Hennig & Vogler, 2016). Participatory technology design is based on two main “propositions”: a “moral proposition” that those effected by technology should be involved in what this technology enables, and a “pragmatic proposition” that the people who use a given technology can contribute expert perspectives, which in turn increases the likelihood of developing an effective technology (Carrol & Rosson, 2007, p. 243). Such design processes take varied forms depending on contexts ranging from including end-users throughout the entire development process to more consultative participation, mostly involving an array of partners with varied expertise, experiences, and resources (Arebian, O’Hara, Jones, Mango, Jones, Williams, Booker-Vaughns, Jones, Pulido, Banner-Jackson, & Wells, 2018; Meurer et al., 2018; Unertle, Schaefbauer, Campbell, Senteio, Siek, Bakken, & Veinot, 2016). While the literature on cross-sector technology development partnerships similar to this case study is limited, Johanna Meurer, Claudia Müller, Carla Simone, Ina Wagner, and Volker Wulf’s (2018) exploration of three IT projects designed to support seniors highlights some possibilities and challenges related to similar partnerships. Possibilities include the development of technologies and the successful take-up of technologies by end-users. Challenges include the tendency for technologies to remain in the prototype stage and issues of sustainability.

THE CASE STUDY: A NONPROFIT-INDUSTRY-ACADEMIC PARTNERSHIP FOR TECHNOLOGY DEVELOPMENT

This case study is based on a completed three-year nationally funded nonprofit-industry- academic partnership. This
Canada-based partnership involved a national volunteer-run nonprofit with a membership of more than 75 community-based youth centres, a small for-profit technology company, and two public universities. The objective of the partnership was to collaboratively develop a technology—a web app—that would increase the data collection capacity of the national nonprofit and its affiliate community-based members. This new data collection capacity would support these nonprofit organizations to produce the kinds of data required to secure funding. Further, the app would enhance evaluation and research capacity within the youth sector more generally and help support scholarly research about, and with, youth in Canada—thus addressing a data deficit in the sector, particularly around how youth spend their after-school time.

Context
Youth centres in Canada support young people by providing a safe space with near-in-age mentors; recreational programming; educational support, including tutoring and homework help; employment support; and mental health support (Lovell, Anucha, Houwer, & Galley, 2016). These centres are particularly significant for youth marginalized by circumstances of location (e.g., rural youth), poverty, racism, heterosexism, colonialism, ableism, and sexism (Gray, 1999; Haley & Roy, 1999; Kidd, 2003; Shields & Sharkey, 2008). Without such organizations, many youth would be unable to access culturally or locally relevant programming and services (Lovell et al., 2016).

While barriers to collecting data and evaluation capacity are shared broadly across community organizations (Bach-Mortensen & Montgomery, 2018), these are compounded for youth-serving organizations that tend to be staffed by young, low-paid, inexperienced, contract workers (Baines, Cunningham, Campey, & Shields, 2014; Nolas, 2014) who have yet to develop the skills required to secure outcome-based funding (Lovell et al., 2016).

Project genesis
This nonprofit-industry-academic partnership evolved out of a conversation between the executive director (ED) of the national nonprofit youth organization and the principal investigator (PI) from the Ontario university. Community-based member youth centres had been asking the national nonprofit youth organization for support with data collection and analysis for several years, but the national nonprofit had not been able to secure the funds required. One attempt to develop a useable technology ran out of funding and was never implemented. Although small pockets of funds were available to restart development, none were available to bring that project to completion. From these conversations, a technology development partnership was developed in support of the national nonprofit and its 75 member organizations. This partnership was funded by a federal Social Sciences and Humanities Research Council (SSHRC, 2020) partnership development grant (PDG).

To be awarded a SSHRC PDG, the project had to be large in scale and national in scope. Funders required a collaborative model in which all partners made key contributions and had clear roles and responsibilities. This requirement meant that the project could not meet the immediate desires of the nonprofit partner to hire a tech developer but would instead bring an industry partner into the project to work collaboratively with the nonprofit and provide in-kind contributions. To meet the national requirement of the grant, the Ontario university PI invited a university researcher in Alberta (co-PI) known to the national nonprofit ED to join the project. The Ontario university PI initially contacted the chief executive officer (CEO) of a local technology company to ask how the proposed project might approach and work with industry partners, and the CEO expressed interest in joining the project.

Project description
The objective of the partnership was to develop a data collection technology that was relevant, comprehensive, flexible, and user-friendly. Methodologically, the project was informed by participatory action research (Baum, MacDougall, & Smith, 2006) and participatory design (Kim, Logan, Young, & Sabee, 2015) because of the extent to which youth centres in Canada
grow out of, and are deeply embedded in, participatory forms of development, governance, and evaluation (Voakes, 1992, 2001, 2003). They were also applicable because the aim of the project was to develop a technology that supported, rather than hindered, the front-line work of practitioners (Ince & Griffiths, 2011; Munro, 2005; Tregeagle & Darcy, 2008), which required responding to calls for more collaborative technology development processes focused on user participation (Hennig & Vogler, 2016). Further, the project was action-oriented (Reason & Bradbury, 2008) in that its explicit purpose was to support youth centres to increase their capacity for meaningful data collection and evaluation processes.

The first funding year (spring 2016–spring 2017) focused on bringing partners and collaborators together to create a vision for the app. The collaborators consisted of six youth-serving centres, all members of the national nonprofit. Three of the centres were in the Ottawa region of Ontario, and three were in the Edmonton region of Alberta. Of the six centres, three were in urban areas, two suburban, and one rural. Centres were a variety of sizes, and each had different funding structures and infrastructures. As described elsewhere (see Wilson, Todd, Occhiuto, & Garrod, 2019), youth and staff guided the processes for working with the youth centres. Focus groups and/or key informant interviews were conducted collaboratively with youth centre staff to understand organizational practices and technology needs.

The second year and the first half of the third year of the project focused on the development and testing of the app. The two university partners brought the app (downloaded onto a tablet) to the regional community collaborators for testing. After one month of use, the research team conducted focus groups, key informant interviews, and surveys on the functionality of the app, depending on the centre’s preferred method for providing feedback. During this phase, one urban youth centre from the Edmonton region chose to withdraw their participation. This centre had been integrated into municipal structures during the project and the municipality was introducing new data collection strategies that were not compatible with the project. The feedback gathered from the remaining five youth centres was, to the extent deemed possible, included in revisions of the app in the summer and fall of 2018. A revised version of the app was made available to the centres in the fall of 2018. In total, 101 youth participants and 41 youth workers and staff were engaged in the technology development process. Informal feedback was also shared with the project manager over the course of the project and used by the tech industry partner to make additional small modifications to the app before it was transferred to the national nonprofit in the winter of 2019. Given the sustainability challenges of technology in nonprofits such as these, the latter half of the project’s final year, year three, focused on providing technological support to the national organization. This included six months of IT support via a research assistant with technological expertise.

**METHODOLOGICAL APPROACH FOR CASE STUDY DEVELOPMENT**

This case study aimed to understand the effects of a nonprofit-industry-academic partnership established to address data deficits through technology development by drawing on two sets of experiences and perspectives. The first set is a series of semi-structured interviews conducted with partners—the private tech company and the national nonprofit organization—and two Ottawa-region youth centre collaborators. The second set integrates elements of reflective case studies (Hamilton & Corbett-Whittier, 2013). These reflections were drawn from the Ontario-based academic team’s notes from meetings throughout the project, conference presentations, discussions regarding the feedback received from the semi-structured interviews with partners and collaborators, as well as the academic team’s retrospective reflections on the project. The epistemological underpinning of this case study was pragmatism (Kaushik & Walsh, 2019; Morgan, 2014). Pragmatism recognizes that there is no one true experience of this project, and that the experiences of the project partners, collaborators, and academic team are all simultaneous realities (Morgan, 2014). In sum, this data provides a semi-transparent account of the project, including multiple perspectives, however, they aremediated through the lenses of the authors (i.e., see Kepkiewicz, Levkoe, & Brynne, 2018; Kindred & Petrescu, 2015). We have attempted not to overly clean or reduce the data or to make the project appear shiny; instead, tensions and disagreements have been highlighted in an aim to provide transparency.
Semi-structured interviews with partners and collaborators

The first round of interviews happened in advance of a series of conference presentations. The CEO of the tech industry partner was interviewed in the summer of 2018, the third year of the project. This interview was facilitated by a research assistant (the first author) who was not directly involved in the partner meetings throughout the project, and was, therefore, a more neutral figure. The interview questions focused on the CEO’s experience of the partnership, the strengths of the partnership and areas for improvement, and the perceived benefits of engaging in the partnership.

The ED of the national youth-serving nonprofit was interviewed on two separate occasions, first in advance of some conference presentations and again following the academic team’s decision to develop this case study. It should be noted that this ED was not the same ED who was involved in project planning. That individual left the organization during the early days of the first funded project year. The ED who had initiated the project had held a paid position with the organization, while the ED who was involved throughout most of the funding period held a voluntary position as ED and chair of the board of directors. The first interview was in the spring of 2019, the conclusion of the project. This interview was facilitated by the same research assistant who facilitated the interview with the tech industry partner. In the first interview, this second ED was asked about their satisfaction with the app, their general reflections on the partnership, lessons learned about developing technology for the youth nonprofit sector, and the perceived benefits of engaging in the partnership.

In the spring of 2019, the audience at the Association for Nonprofit and Social Economy Research Conference shared the need for more open recounts of projects such as this, particularly transparent accounts of longer-term effects. A scan of the literature validated this need with calls for post-project follow-ups of cross-sector partnerships more generally (Vestergaard, Murphy, Morsing, & Langevang, 2020) and for those focused on technology (Meurer et al., 2018). With this all at the forefront, the second round of interviews was carried out to understand the effects of the app and partnership after the conclusion of the project.

The second interview with the ED of the national nonprofit took place in the spring of 2020, one year after the project concluded. This interview focused on current impressions of the app, how many centres were using the app, the feedback they were receiving about the app, how effectively the app was supporting members, whether the app was attracting new members, and the perceived benefits of engaging in the partnership. It also provided opportunities to reflect on the partnership project.

In spring 2020, interviews were also facilitated with the managers of the two collaborating community youth centres in the Ontario region that had continued to use the app after the project concluded. The third youth centre did not continue to use the app; during the project, this centre shared that the app was not targeted enough to their specific needs. Nonetheless, this centre was approached to take part in the case study but did not respond to a request for an interview. While these interviews took place a year after the formal partnership concluded, a year-and-a-half had passed since the centres received the second iteration of the app. These interviews were facilitated by the same research assistant who did the previous interviews. The managers of the youth centres were asked if and how their centre was using the app, if they were having any issues with the app’s functionality, if they had any post-project reflections, how they perceived the benefits of engaging in the partnership, and for any additional thoughts they had on the app itself.

FINDINGS

The Ontario university-based research team analyzed the interviews with project partners and collaborators following Virginia Braun and Victoria Clarke’s (2006, 2019) phases of reflective thematic analysis. In reflective thematic analysis, “themes do not passively emerge from either data or coding. … Themes are creative and interpretive stories about the data, produced at the intersection of the researcher’s theoretical assumptions, their analytic resources and skill, and the
data themselves” (Braun & Clarke, 2019, p. 594). Analysis was led by the first author to mitigate personalization of the feedback received. The “theoretical assumptions” that guided analysis was pragmatism (Kaushik & Walsh, 2019; Morgan, 2014). Pragmatism guided discussions of how some of the experiences shared differed from how the PI and project manager experienced the project. These tensions are noted throughout the following sections.

When the data analysis was undertaken to understand the effects of the work, it became clear that impacts were entwined with processes. As such, three themes were generated at the intersection of the effects and processes of the partnership: project scale, reality versus capacity, and the necessity of the partnership.

**Theme one: Tensions with scale**

All interviewees noted tensions with the scale of the project. The smaller-scale youth centres located in suburban and rural areas were pleased with the functionality of the app and continued to use it. The app was integrated into these organizations as a sign-in tool, a way to track participation in activities, and/or as a general registration system. Both centres reported finding the app “helpful,” as it collects and organizes data required by existing and future funders. One youth centre manager shared, “This app has been awesome and made reporting and record-keeping so much easier. These numbers are necessary for funding, and to create our annual report.” A manager at the other youth centre shared similar sentiments, including how helpful the app had been in preparing monthly reports for the board of directors. In addition, both centres noted that the app allowed them to be more organized with attendance information, with one centre noting how helpful the app would be in cases of emergency, as it provided an accurate record of who was in the building. The other centre shared similar sentiments around the app supporting facilitating more organization and preparedness in operations, including as a useful tool for offsite trips because it provided staff access to necessary information while reducing the need to rely on paper forms. While both youth centres perceived the app as helpful, one did note that it might not be as useful in more complex organizations.

Feedback from the national youth organization partner was not as positive. The ED stated in a post-project interview that 10–15 organizations across the country regularly used the app and found it helpful to their day-to-day operations. They also expressed, however, disappointment with the final product because it was not universally adaptable to the range of tasks carried out by various community youth centres. The ED also said that the app was unattractive. Although the ED continues to invite member youth centres to use the app, member centres dismissed the technology at first glance because of its appearance. Some thought it looked like a spreadsheet, others felt it would be too complicated. The ED concluded that a technology created for the youth sector must appear easy to use to avoid being dismissed out of hand.

The attractiveness of the app was, in part, an issue of scale. Very early on in the process, when centres were asked about their “dreams” for the app, the stark contrast between the high-quality, expensive apps we are all accustomed to as consumers and the barebones app that could be produced as part of an in-kind donation from our short-term industry partner became apparent. This concern was discussed openly by partners throughout the project. While community collaborators spoke of avatars and gamification, the tech partner was focused on data, security, and basic functionality. Disappointment with the look and functionality of the final app was, as a result, unsurprising, and it points to a tension of relying on in-kind contributions from short-term partnerships to develop technology for the sector.

The ED from the national partner organization was also concerned with the suitability of the app for national-level use. The ED, who again was a different person than the ED who initiated the project, indicated that they would have included partners from universities in regions that approached youth work in more varied ways. They suggested that Ontario and Alberta organize youth programming similarly, while other provinces and territories tend to operate in ways not captured in the app’s design. This feedback highlights some important challenges not only with scale but also with this type of
partnership work, which relies heavily on pre-existing relationships. When key partners change mid-project, it can present significant challenges due to shifting expectations.

Discussions around the parameters of the funding and scale were ongoing throughout the project. Partners compromised and determined that the project be viewed as an initial step that the ED of the youth organization could use to leverage the much larger and complex project they felt was required to meet the organization’s needs. The ED found the inability to scale up the complexity and flexibility of the app disappointing, however, and viewed it as a project limitation.

The tech industry partner reported challenges with meeting the wide range of needs of all six of the original youth centre collaborators and the national partner. The tech industry partner suggested that in retrospect, they should have considered working with feedback from a smaller sample of youth centres or on a particular segment of operations in youth centres, rather than trying to create an app to meet all the needs identified at the outset. This reflection was in tension with the national partner’s desire for an even further scaled-up project and, indeed, with the overall goals of the partnership funder.

Theme two: Expectations and capacity
Tensions around expectations and capacity developed in a few ways. First, the topic was raised around partner engagement. The day-to-day work on the project, including emotional and relational work (Malenfant, Nichols, & Schwan, 2019), was carried out by a graduate student project manager. The project manager was identified by all partners as a clearly identifiable strength of the project, making their involvement possible. At the same time, the ED of the national nonprofit partner and the CEO of the tech partner both wondered if the further integration of partners and collaborating youth centres might have increased satisfaction with the process and product. However, they both raised concerns about the feasibility of greater integration given their respective schedules. The research team’s reflection on the tension between expectations and capacity explored how this was possibly related to the reliance on in-kind donations of time and expertise. For example, the ED of the national partner was a volunteer who had a full-time job outside of their work with the national organization. The tech industry partner balanced their volunteer participation with the needs of paying clients. These competing demands likely made it difficult for partners to consistently prioritize this project. As a result, the paid university staff carried the project and moved it forward, including coordinating the in-kind work of the partners.

A second way in which capacity and expectations led to tensions was with respect to the sustainability of the technology. Although a research assistant supported the transition of the app from the tech partner to the national nonprofit that now owns and manages it, the national nonprofit had not been able to secure the resources to refine the app in the way they had hoped. The two Ottawa region youth centres interviewed also expressed concern regarding the future of the app, as they similarly lacked the resources to modify or upgrade the technology. Thus, while the team built six months of tech support into the project, follow-up interviews with those using the app demonstrated that this was not sufficient to replace the ongoing IT support required to maintain this kind of technology.

Theme three: No partnership, no app
A third theme identified in the interviews was that the development of the app would not have been possible without the partnership. Previous attempts by the national partner to develop an app had been unsuccessful. In turn, when the project concluded, the ED expressed hope that they might secure the resources required to refine the now-developed app to better meet the needs of their members. In their 1-year post-project conclusion interview, however, this hopefulness had faded.

While the national nonprofit partner was clear that the app was not what they had hoped for, they did conclude it would not have been possible to develop the app without the partnership, given that the partnership secured project funding and the university partners managed both the app development and the relationships. Moreover, the nonprofit partner
gained experience through the partnership to inform future technology development projects. The two community youth centres that were interviewed provided similar feedback; they did not have the resources or capacity to develop or procure an app independent of the partnership. Despite the limitations of the final product, the app and the tablet were received as significant and positive outcomes for these two community youth centres.

DISCUSSION
Participant reflections on the effects of the app and partnership highlighted several affordances and limitations of short-term funded nonprofit-industry-academic partnerships as a strategy to address needs in the nonprofit sector. Many of these have been discussed in the cross-sector partnership (Seymour, Bull, Homel, & Wright, 2017) and technology development literature (Arevian et al., 2018; Meurer et al., 2018), but when focused on this particular case study, they are apparent within the complex realities and relationships of a specific partnership focused on technology development. The cross-sector partnership provided the foundation necessary to achieve effects that could not have been produced without this project. At the same time, challenges remain with respect to how to scale the app, balance differing organizational goals, and sustainably address technological gaps within a project funding model based on in-kind contributions. While this project sought to address concerns regarding the use of technological interventions that impede rather than support the sector (Ince & Griffiths, 2011; Munro, 2005; Tregeagle & Darcy, 2008), the results suggest that short-term funded technology partnerships are not always sufficient for producing functional and sustainable technologies for nonprofits. This concluding discussion, therefore, returns to the initial project aims to reflect on the effects and benefits of the work as a means to contribute to a “practice of transparency” (Roose et al., 2016, p. 1021).

The effects of the app post-project conclusion
This article aims to provide a semi-transparent and comprehensive account of a partnership formed to collaboratively develop an app. The research team did this by reconnecting with partners and collaborators and engaging in our own collective reflections. It is quite difficult, however, to measure the effects of partnerships such as this. Rob van Tulder, M. May Seitanidi, Andrew Crane, and Stephen Brammer (2016) explain this is because it often requires “sophisticated methodologies, multi-level tools and longitudinal research designs that are not easy to develop, implement and elaborate” (p. 3). These difficulties are compounded in short-term funding models where no resources are provided to do this work—and, thus, the literature based on such projects is limited. We do not claim to have completed a comprehensive evaluation. We undertook this exercise with no additional resources. However, working to understand the effects of the app, based on the experiences of our partners and collaborators, still offers potential for learning while contributing to a “practice of transparency” (Roose et al., 2016, p. 1021).

To build this case study, the research team revisited the goal and objective of the partnership. The overall goal of the project was to increase the data collection capacity of the national nonprofit partner and the community-based youth centres. The objective was to develop a relevant, comprehensible, flexible, and user-friendly data collection tool. We recognize that evaluating the project based on the goal and objective only tells a partial story “as partners might raise non-compatible and unrealistic expectations, or even define the issue or problem differently to begin with” (van Tulder et al., 2016, pp. 5–6). Nonetheless, we start from this partial place as it provides an entry point to understanding the effects of the project while also holding the tensions of doing so at the forefront.

From the perspectives of the small-scale youth centres, this project met its objective and provided a tool that staff found easy to use and that created administrative efficiencies. By virtue of the participatory design process, the youth centres felt that the app collected the information they needed and that it was straightforward to use. These smaller-scale youth centre collaborators felt they received their projected benefits. However, these experiences differed from that of the larger-scale youth centre in the Ottawa region; it did not engage in the follow-up project review but shared concerns during the
development phase that the app would not meet all its specific needs. The limited uptake of the app a year-and-a-half after it was developed supports the notion that the app did not function as a one-size-fits-all solution to the data collection needs of the sector while also demonstrating the differing needs and expectations of the app.

It was clear after the project concluded that further refinement of the app to meet a wide and changing range of needs was unlikely. Further, attracting new youth centres to use the app was difficult, as the app was perceived as being difficult to use because it was not aesthetically pleasing and resembled a spreadsheet. While the national youth organization adopted ownership of the app and developed a greater understanding of the capacity and skills needed to provide data management and evaluative support to youth centres in Canada, the app did not fulfill the central data support roles the organization had hoped it would, nor did it attract additional members. The app was an incremental step forward from having a half-developed platform gathering dust, but it was not enough to achieve the national nonprofit’s core goal (to entice more members to join the national organization), which only became clear mid-project. More members (and fees) would have secured the national nonprofit’s financial stability. In addition, without many youth centres using the app, the national youth organization was unable to access the data it desired. The overall data deficit in the sector endured despite the project’s focus on addressing this gap. So, although an app was delivered that increased the data collection capacity of individual youth centres and seemingly the national nonprofit, follow-up interviews revealed a more complicated outcome.

Many of the challenges encountered by the project are recognized as challenges in cross-sector partnerships. These include financial constraints, calibrating partner goals, harmonizing differences, including differences in culture, finding the time and energy to foster relationships with partners, and sustainability (Brock, 2018; Hill, Rosehart, Montabello, MacDonald, Blazevich, & Chi, 2019; Mandell & King, 2014). These common partnership challenges played out in very specific ways in the project. While the national nonprofit initially envisioned and articulated its interests as aligning with those of its member youth centres, it became clear that its members’ needs were quite diverse and while there were places of alignment, there were also points of tension and contradiction. Therefore, while the initial vision was for one generic app that would standardize the sector, it soon became clear that the national organization either needed multiple versions of the app tailored to the varied needs of a range of youth centres or an app with extraordinary flexibility. This was beyond the scope of the project, as it was only possible to provide a basic prototype that met some members’ needs but not all.

The basic app that was developed was not taken up by all intended users, even with an extensive consultation process. Similar challenges have been noted with technology development in the health sector, suggesting that the take-up of technologies may indeed be dependent on the design and aesthetic of the technology itself—not simply its functionality (Russell, Lloyd-Houldey, Memon, & Yarker, 2018). If basic technologies, such as the one developed for this project, are all that is possible through voluntary partnerships with in-kind contributions, it may be important to reconsider whether this model is sufficient for addressing technological gaps in the nonprofit sector. The data from this case study suggests design needs must be prioritized alongside functionality. In the end, both the academic team and the industry tech partner wondered whether it would have been more realistic to first develop an app for a small group of service providers rather than one national in scale; however, the funding was attained for a project national in scope. And even addressing the tensions in scale would not have directly addressed the issues of design and aesthetics.

The sustainability of the app remains unclear, but it is not promising. Research that demonstrates the sustainability of collaborative participatory technology development in the nonprofit sector is limited (Meurer et al., 2018). This experience aligns with the work of Meurer et al. (2018), which found that the timelines provided within current short-term funding arrangements tend to produce technologies that remain at the prototype stage. They attribute this to the lack of accounting for the time involved in the relationship-based work necessary for participatory technology development, the time required to test and refine technologies already in real-time use in the sector, as well as the need for ongoing technical support to
keep technologies working well. While the project worked to integrate technological sustainability and build capacity by transferring the ownership of the app to the national nonprofit, training youth centres using the app, and providing six months of follow-up IT support, it was not sufficient to produce long-term sustainability.

Anne Vestergaard, Luisa Murphy, Mette Morsing, and Thilde Langevang (2020) suggest that the effectiveness of a partnership is ultimately “a measure of the appropriateness of the specific partnership arrangement for achieving societal effects, including not only its inputs and throughputs, but also its costs” (p. 5). This partnership worked to incorporate important participatory design processes in ways that neither the individual youth centres nor the national nonprofit organization had the capacity to carry out on their own. As academic partners, we worked to nurture relationships and processes during this period. The partnership had clear value, but its short-term nature along with the in-kind donation requirements of the funding made it difficult to collaboratively develop a technology that could remain relevant within the ever-changing nature of the sector. These challenges were intensified in a context that pushes partners into new projects as soon as funding periods draw to a close in order to infuse new monies to support research and program development and meet the requirements for the research agendas that are required and valued within academic jobs. With this all-in mind, it is worth considering the ways in which this project both relied on and reinforced nonprofit need, for-profit expertise, and academic project and relationship management.

Who benefits?
The academic team’s collective reflections included a fair amount of discussion on whose interests are served by this kind of short-term need-focused partnership. At the outset of the project, the ways each of the partners could expect to benefit was addressed to garner internal support from each partner, be transparent, and ensure the value of the partnership remained at the forefront of the work (Austin, 2000). For the academic partners, projected benefits included academic outputs such as conferences and publications. There were also institutional and individual benefits that accompanied securing tri-council funding, as well as affording training and employment opportunities for graduate students. However, the project also set out to gain a greater understanding of what youth do with their after-school time through the data collected from the app. It was not possible to obtain that data because the app was not widely adopted. Given the central project goal was capacity building for the nonprofit youth sector and, secondarily, research communities, this was a disappointment.

For the tech industry partner, projected project benefits included the opportunity to do some basic market research on youth interest in apps, as the company was looking to expand its products to this demographic. This interest was somewhat constrained by ethical considerations. The company would have liked to speak directly with youth about their interests, but this presented issues of consent. As it was not clear how the information might be used, it was not possible to obtain informed consent from the participants, many of them minors. The tech industry partner’s involvement with nonprofit and academic partners provided significant research and development tax benefits. For them, the project was experienced as not a huge effort that provided unique learning opportunities.

In contrast, the ED of the national nonprofit concluded the app took too long to develop and refine. One year after the project, the ED pondered if it would have been a better use of their and the youth centres’ time to pay for the development of an app that would more fully meet their needs. It is important to note that this was not, in fact, a viable option for the organization but rather a reflection of what they wished was an option. This also would have required them to clearly articulate their technological needs, which is a struggle within the sector more broadly, specifically around understanding what is and is not possible with technology development (Gillingham, 2015). In turn, the ED retrospectively shared their reticence to express dissatisfaction with the product during development, as the industry partner was providing services free of cost. They shared in the post-project interview, however, that they were generally dissatisfied with the gap between aspiration and actuality. These types of conversations were difficult when trying to mediate a relatively uni-directional re-
relationship between the tech industry partner and the national nonprofit. In the end, the national nonprofit was provided with a functional working app, though it was not of the desired scale or marketability. Finally, in addition to the app, youth centres received a free tablet, regardless of their decision to leave or complete the project. While it is not necessarily reflective of the collective, the youth centres interviewed post-project reported that they received the anticipated benefits.

In sum, post-project reflections on the nonprofit-industry-academic partnership to address technological deficits in the nonprofit sector suggest that there were uneven benefits for each partner, and that while the project’s main deliverable was met with the production of a functional data collection app, the overall impact of the project fell short of its imagined potential. These shortfalls occurred in a context of competing needs, interests, and visions; chronic organizational instability; and the limits of an asymmetrical and temporary partnership model utilized to address enduring technological challenges, including issues of sustainability.

This leads to the question of where to go from here. We do not see our work on this project as necessarily right or wrong, but considering our desire to contribute to greater transparency, we do find ourselves questioning our role within short-term funding systems that, in this case at least, appear to be benefiting for-profit partners and the larger university system more than nonprofit and charitable partners. We also question the kinds of effects our participation in such activities have on the youth sector, and how we might support more useful, sustainable technology development in nonprofit and charitable organizations. As such, we echo the calls made by Meurer et al. (2018) for longer-term funding with periods that account for not only the relationship building necessary to integrate participatory approaches to technology development but also the time required to observe and modify technologies after they have been fully integrated into organizations. We further suggest that notions of capacity building shift from solely building internal supports with existing resources, to providing sufficient ongoing resources for technologies to be continuously refined and adapted to maintain currency and meet evolving needs (Meurer et al., 2018).

CONCLUSION

We felt it was important to revisit our project, given that the impacts and benefits of cross-sector partnerships are often more assumed than demonstrated (Austin & Seitanidi, 2012), with imaginings of long-term outcomes that “transcend the immediate sphere of partnership activities” (Vestergaard et al., 2020, p. 2). This semi-transparent accounting of this project demonstrates the limits of this work, particularly when using partnerships as a strategy for tech development in an unstable and underfunded sector that has limited internal expertise. The notion of partnership development as a “social good” needs further interrogation in the scholarly literature, as does public funding schemes that continue to rely heavily on short-term funding for partnerships.

Reflecting on our project, we did not achieve the effects that we had hoped for. It is also apparent, however, that such effects were likely not possible within the funding structure of short-term, in-kind contributions. As such, we echo sentiments by Meurer et al. (2018) and propose that participatory technology development processes require longer-term funding periods than tend to be available within a Canadian context. Further, it is time to rethink capacity building in the context of IT support, as effective and sustainable technology development tends to require ongoing IT support (Meurer et al., 2018).

In many respects, this project is reflective of contemporary funded research ideals and the challenges of applied knowledge work with diverse stakeholder groups. It, therefore, functions as a case study, which in turn makes it possible to raise questions for shared discussion about cross-sector research and development partnerships to redress the technological deficits of the nonprofit sector. While naming tensions within work does not resolve them (Bourdieu, 1999), the aim is that these reflections may help to foster spaces in which we can collectively grapple with the challenges and affordances of the shifting configurations of perceived social good, academic scholarship, industry profit, and public funding.
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ABOUT THE AUTHORS / LES AUTEURS

Katherine Occhiuto is a PhD Candidate at Carleton University, School of Social Work. Email: katherine.occhiuto@carleton.ca.

Sarah L. Todd is a Professor at Carleton University, School of Social Work. Email: sarah.todd@carleton.ca.

Tina Wilson is a SSHRC Postdoctoral Fellow at Glasgow Caledonian University, School of Health and Life Sciences. Email: tina.wilson@gcu.ac.uk.

Joel Z. Garrod is an Associate Professor at St. Francis Xavier University, Department of Sociology. Email: jgarrdod@stfx.ca.