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[SEARCH](#)

Perceived Barriers to SME- College Collaboration: The Case of the Province of Manitoba

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Abstract

Since their creation, community colleges have had a mandate to be responsive to their communities, often through relationships with local business. As globalization and technological advancements increase pressure on small businesses (SMEs), the role of colleges in helping these SMEs to innovate in order to survive becomes clearer. Relationships between colleges and SMEs, however, are often balked by a number of barriers as perceived by individuals within the college system.

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This paper begins to examine the relationship between these entities through a series of interviews with individuals within the Manitoba community college system. An analysis of these conversations reveals seven distinct categories of perceived barriers.

community colleges in assisting small businesses to innovate.

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Introduction

Because of the wide range of institutions for which the term “college” is used internationally (Raby, 2009), it is necessary to define the Canadian and, more specifically, this paper’s definition of the term. Fisher’s (2008) operationalization of the term will be adopted here:

“*College*, for the purpose of this report, is used as an omnibus term representing the wide range and diversity of publicly funded non-university postsecondary institutions in Canada. In practice, these uniquely Canadian institutions are variously referred to as: community colleges, colleges of applied arts and technology, technical institutes, university colleges, institutes of technology and advanced learning, polytechnical institutes, and collèges d’enseignement général et professionnel (CEGEPs).” (p. 5)

The current community college system was largely established in the 1960s, in almost every province, to accommodate the growing demands for post-secondary education by the rising number of high school graduates and the demand of employers for skilled labour (Laden, 2005). The purpose of community colleges was often plural: education, with a particular focus on vocational, trade, apprenticeship and technological training;

paraprofessional programming and general academic studies; continuing and adult education; and customized and contract training for business and industrial partners (Rogers, 2010). Many of these purposes remain relevant today in regards to the support of SMEs.

The general principles upon which the provincial college systems were founded “...included a focus on accessibility that was demonstrated in open admission policies, preparatory programs, encouragement of diversity, provision of student services, flexibility in scheduling, and an emphasis on teaching, rather than a research emphasis as in the universities. At the same time the colleges were designed to be responsive to government direction and changes in the economy, and to provide specialized services as needed in their local economies” (Rogers, 2010, p. 18). As a foundation, such a base of ideas ensured that community colleges would be attuned to the local community, engaged with it, and able to adapt to its changing needs over time.

Beyond these founding principles, Canada’s community colleges had, from the very beginning, a greater community orientation than other post-secondary institutions in the country. As stated by Dennison and Gallagher (1986), “Their community or localized orientation was reflected in their programme mix, in their student mix, in the employment placement of their graduates, and in their specialized services and activities” (p. 79). Similarly, the authors point out that often there was an expectation that these new colleges would establish and grow close relationships with local business and industry. These relationships were, and largely continue to be, encapsulated in college governance boards and program advisory committees, ensuring

college programming remains relevant to the needs of local employers.

This focus on the local economy became more ingrained over time as colleges adapted training programs to meet the needs of employers and engaged business and industry in the area to ensure the college's educational offerings met existing needs. Colleges were formed to meet a variety of goals, many of which required a level of integration of the institution into its community; their involvement often extended past simple workforce training, actively engaging in economic and community development efforts in a variety of manners (Rogers, 2010; McJunkin, 2005). With colleges having a presence in between 900 and 1000 communities across Canada (Rogers, 2010; Bélanger et al, 2005) and many of these locations having ties (both formal and informal) to local economic development agencies, on the aggregate these institutions play an important development role on a national scale. Currently, colleges are seen to be increasingly important players in assisting SMEs to increase their level of competitiveness (Fisher, 2008) and innovative capabilities (Tomlinson, 2011).

The Government of Canada demonstrated its commitment to encouraging partnerships between Canadian colleges and SMEs in regards to innovation with announcements in late 2014 regarding two new multi-million dollar funds. While the Canada First Research Excellence Fund only acknowledges colleges' inclusion in the post-secondary arena and, therefore, the ability to compete for funds, the Community and College Social Innovation Fund directly targets college partnerships with community-based organizations and businesses.

Nonetheless, there remains some concern as to whether or not colleges are able to effectively fulfill this role as a partner to SMEs in regards to innovation. The announcement of government funding explicitly addresses financial concerns, but the barriers to collaborative activities in regards to innovation may not be exclusively economic in nature. The suggestion has been made that there are, in fact, several major barriers that need to be overcome, particularly in regards to the issue of conducting research and development activities in the college setting. Bélanger et al (2005) identified the following barriers: (1) no provincial government that passed a College Act (or equivalent) originally included research and development activities as a role for either instructors or the institution; (2) as of 2005, no provincial government directly funded research and development activities within colleges; and (3) collective agreements usually do not include research and development as a duty or a route for promotion. Further, heavy teaching schedules, lack of release time for faculty members, and inadequate infrastructure have also been understood to be significant barriers (Rosenkrantz, 2013; ACCC, 2011; Fisher, 2009).

Despite these barriers, SMEs and colleges can and do interact in numerous ways. Jurmain (2006) developed a conceptual model outlining the various roles that colleges play in the research, development, and commercialization process. The primary forms of interaction identified in this model include: basic research, development, commercialization, technology/commercialization/implementation assessments, technology/knowledge transfer, and education and training. Of these activities, it is applied

research that received the most attention in Canada. Every year, more colleges report involvement in applied research, related research partnerships, and the development of research centres. Specifically, 45% more colleges reported having a dedicated research and development office in 2010-2011 than only two years prior (2008-2009). In 2010-2011, almost 4,400 firms, of which 83% (or 3,652 firms) were SMEs, partnered with colleges for applied research purposes. Finally, 305 research centers were functioning in community colleges in 2010-2011, as compared to 196 only a year before (ACCC, 2012). Despite the impressive numbers, this growth of research activity appears to be unsystematic and uncoordinated (Fisher, 2009).

With colleges as the recipient of increasing levels of governmental interest and funding to engage with Canadian SMEs, coupled with the uniqueness of Canadian community colleges, a better understanding of barriers to these desirable collaborative relationships is needed. To date, the extremely limited amount of literature that exists has tended to originate from a point of view external to the college. One of the purposes of this project was to address this lack of research regarding the barriers to collaborative activity focused on innovation, as perceived from within the colleges themselves.

As an initial step into understanding the reality of the interaction between colleges and SMEs in the area of collaboration, a series of interviews were conducted in the province of Manitoba with individuals within the community college system.

Justification of institutions selected

Three colleges were selected for this study: Assiniboine

Community College (ACC), Red River College (RRC), and University College of the North (UCN). Though other institutions similar to these three exist within the province of Manitoba, the three selected have been selected for a variety of reasons. The three colleges selected were selected in part due to the fact they are the three oldest colleges in the province, despite the changing nature of the institutions. The institutions selected for this study that were the institutions that first received the designation of “community college” within the province.

Currently, only Assiniboine Community College remains fundamentally unchanged from its community college status. Keewatin Community College, in its conversion to University College of the North, became a degree-granting institution; similarly, Red River College has been given the ability to grant degrees. Further, additional colleges have been established within the province, largely religion-affiliated colleges. However, the original three colleges remain the focus of this study.

As ACC and RRC remain governed by the Colleges Act, UCN is governed by the *University College of the North Act*. The question may be asked, then, if UCN should not be classified as a college. Fisher (2008), in examining Canadian colleges, indicated that this term may be considered an omnibus term that includes, among other types of institutions, community colleges, colleges of applied arts and technology, and university colleges. Jones (2009) supports this position, indicating that institutions of college origin that have acquiring degree granting status are continuing with the original, core mandate of community colleges to increase accessibility to higher education.

All three institutions, then, regardless of the legislation that governs their operation, may be considered categorically similar. Each is publicly-funded. Each is a member of the Association of Canadian Community Colleges, a membership organization. Most tellingly, however, is the focus of the institution — that is, the percentage of enrolment in degree programs requiring at least three years of study. According to Orton (2003), if less than 50 percent of the institution’s enrolment is in such degree programs, these degree granting postsecondary schools should be categorized as “colleges and institutes.”

The three colleges selected for this study — Assiniboine Community College (ACC), Red River College (RRC), and University College of the North (UCN) — were selected for two key reasons beyond their longevity:

1. These three colleges constitute the entirety of the publicly-funded, English-speaking colleges in the Province of Manitoba. Therefore, the entirety of these institutions and the vast majority of public colleges in the province were represented.
2. Each college was situated in a different and distinct region of the province. RRC is situated in Winnipeg, an urban environment; ACC is located in a largely rural setting; and UCN is located in communities throughout the north. The variance in setting and potential focus again ensured balanced coverage of the activity taking place in the province.

Key informants were selected at each institution, selected initially for their role and closeness of operation with SMEs. These individuals were most often in management roles, followed by administrative and instruction roles.

At the conclusion of each interview, suggestions for further individuals to speak with at the institution were requested.

Instrumentation

Because of their ability to be adapted to each individual and their power at eliciting information from people (Fontana & Frey, 2005), an interview tool was utilized. Whereas the interviews of the individuals employed by ACC were conducted in person, the interviews with the individuals at the other two institutions were done over the telephone.

The interviews themselves were semi-structured, partway between a free and open conversation and a rigidly structured questionnaire (Kvale, 1996). Following a series of cues on an interview guide, the researcher began every interview only with the intention of discovering how the college interacted with SMEs in regards to innovation. The cues, therefore, acted only as a guide to ensure the interview covered the range of general topics necessary, and the bulk of the interview was driven by the interviewees' responses.

Twenty-five interviews were conducted across the three institutions: RRC, ACC, and UCN. The interviewees were drawn from categories of management, administration, and instruction (Table 1). These broad categories were selected in order to provide input from the entire spectrum of college employees.

The first round of interviewees consisted of those that responded to an initial email solicitation for participation and an interview time could be arranged. Several potential interviewees were not included in this study

due to an inability to find a mutually acceptable time. Each of the first round of interviewees were asked to suggest further individuals who would possibly participate. The second round of interviews consisted of those suggested individual who were willing to participate and for whom an interview time could be scheduled. Further contacts were made across colleges and roles in an attempt to provide balance.

Table 1: Interviewees by institution and category

RRC	11	Management	10
ACC	8	Instructors	9
UCN	6	Administrators	6

The conversations were semi-structured interviews that lasted, in general, 25 to 40 minutes. Because each of the interviewees had a unique viewpoint of the institution, based on their position, duties and experiences, it was felt that a structured interview would potentially exclude pertinent information. Conversely, due to the potentially crippling diversity of conversations that could occur, unstructured interviews were deemed to be inappropriate. Jurmain's (2006) model of roles for colleges in research development and commercialization process provided the guiding points of the semi-structured interview process used.

The bulk of the interviews were conducted by telephone (17) and the remainder (8) were conducted in person, based on interviewee availability. All interviews were conducted by the researcher. These interviews were recorded and transcribed by the researcher. The transcriptions were uploaded to NVIVO and coded for

barriers to innovation (Richards, 1999). Analysis consisted of identifying common themes emerging from the interviews.

Findings

“At the college we are fighting with a lot of different things. There’s staff teachable time. They are in the classroom a lot of the time, not like at a university where you are expected to do research. Here, it is a little bit different. So even if we did have money that may not solve everything.”

— *S.R.*

Seven categories of barriers to SME-college collaboration were identified: awareness, infrastructure, money, time, culture, timing, and SME buy-in. Of these, only “time” and “money” were noted as potential barriers prior to conducting the interviews. The categories follow in diminishing order of importance, as determined by the weight placed on each by the respondents.

1. Awareness

Awareness, as a barrier, refers to the cognizance of parties outside the immediate department or other college unit about the collaborative activities taking place. Although this barrier was mentioned almost equally across roles within the college, those individuals not at the highest levels of management indicated that awareness of the activities within their department or unit was a barrier, while those interviewees at higher levels of management indicated this was a barrier to much lesser degree. Across all levels and roles was the perception that

lack of awareness — both within the organization and outside the boundaries of the institution — of the colleges' ability to engage in collaborative activities was a significant barrier.

The lack of awareness within colleges can be exemplified by the following statement from an individual in upper management:

“I think there are probably lots more opportunities to explore there than we have been exploring. I also think that in some of those connections that sometimes there may be things happening that we don't even have catalogued but could be happening informally.”

— *N.E.*

This statement illustrates the idea that upper management often suspects that there are collaborative activities occurring within the college, but do not have the systems in place to ascertain it. Red River College appears to have the most general awareness of collaborative activity within the college, the sheer size of the institution denies any one individual the ability to be fully aware of all activity. Assiniboine Community College has a good deal of awareness within departments, but between departments and between departments and upper management, awareness is diminished. Awareness seems to be the weakest within University College of the North, but there are some key examples that all players within the institution seem to be aware.

“In terms of engaging businesses and the programs and in terms of helping us identify those small businesses with projects, I think perhaps we need more visibility. And we probably need to market our applied research program, and that is something that instructors really have quite a bit of limitation in doing.”

— *T.G.*

As with the internal awareness, RRC appears to have the highest level of external awareness within the province, although the degree to which SMEs in the province are aware of the opportunities for engagement with the college seems to vary from department to department and, from industry to industry. Again, this level of awareness may be a function of the college’s size; however, from the interviews conducted it seems as though there are more established opportunities for college-SME collaborations than at other colleges.

There are programs at Assiniboine Community College that have well-established methods and means to engage with SMEs in ways that would be very beneficial to the businesses’ innovative activities, but a lack of awareness of these potential forms of engagement often prove frustrating to the faculty involved.

University College of the North respondents were the least likely of the three colleges to find external awareness a significant barrier. There are two possible explanations: (1) there is little significant

collaborative activity, so there is little need for external awareness and little to make others aware of, and (2) the community of the North is small and individuals working in similar industries, whether in an educational setting or a commercial one, have connections that ensure awareness exists and is therefore not an issue of concern.

2. Infrastructure

Infrastructure was most often mentioned as a barrier by Assiniboine Community College. The only mention of infrastructure as a barrier at Red River College was in regards to buildings:

“Any of the work we do is in labs that have been renovated as best they can to meet our needs, but they are not optimal.”

— *M.F.*

“The references to infrastructure at Assiniboine Community College pertain largely to matters of equipment and technology.”

“Oftentimes our equipment has not kept pace with the technological changes in the industry, so that is a challenge for us.”

— *N.E.*

“I would say that infrastructure is another factor because although the college provides a small fund, but really the fund is not enough to purchase equipment that might be necessary to do some kinds of research. So

infrastructure is lacking.”

— *T.G.*

It is possible that in many interviewees’ minds infrastructure flows out of money; therefore, some interviewees may have addressed infrastructure concerns in comments veiled behind a discussion of financial barriers.

3. Money

A more general concern was that of money. The concerns raised about financial barriers were often accompanied by acknowledgements that financial resources are much scarcer in the new fiscal reality than they may have been in the past.

As a barrier, money was mentioned across all three institutions by respondents in all categories. There was little, if any, variance across any categorical lines on this topic.

“Because small businesses, understandably so, are so focused on the quarterly reports, so focused on getting their payroll that they are not really focusing on what it means to have a learning workforce. And that is where the real innovation is going to come. And investment in research. And investment in development.”

— *D.B.*

A minority of the comments regarding money as a barrier focused on the SME partner. These comments were all much like the quote provided above — there is an understanding of the relative

unavailability of money by SMEs for investment in innovative activities, but a frustration at the inability or unwillingness for these SMEs to try and free funds for these kinds of pursuits.

The majority of comments regarding money related to the lack of funds from within the college or otherwise made available to colleges for research with SMEs as partners or other collaborative activities.

“We struggle with this college thing all the time. Colleges have not traditionally done research and there isn’t the funding model in place for colleges to get money — at least 90% of all funding for research goes to universities and universities don’t want to give up that money. And colleges won’t release us for time to do the research. So who is going to pay us to do research for small companies? Companies aren’t paying. Colleges aren’t paying. There are no funding models because it is all going to the universities”

— *H.M.*

Again, there was no apparent difference between colleges or between roles within the colleges in regards to this particular barrier. The struggle for funding to support collaborative activities was a common barrier across all categories of respondents.

4. Time

Time was identified as one of the potential barriers

prior to beginning this research, and the responses obtained through these interviews confirmed that time was indeed a significant barrier to the establishment and maintenance of collaborative activity between colleges and SMEs. Universally, there was an acknowledgment of the lack of time made available to instructors for this kind of activity outside existing duties within the college.

“Research work is very time and energy intensive. It takes a lot of time and really I have had a conversation with [a colleague] about this and the reason I have been doing the applied research projects is because I think it is crucial to my development and I have interest in doing the work, but other than that there are people around me as instructors who, for instance, are reluctant to invest extra time beyond teaching and marking and everything else.”

— *T.G.*

“Even if there is money there, it is still the time to do it. The odd time you might have someone who wants to do it on their own time over the summer, but usually summer is spent recharging for the next year.”

— *H.M.*

“The other thing is recognizing that it is a time-consuming thing, especially when you are trying to integrate it into your programming for the benefit of the students.”

— *O.V.*

Although the instructors all purport to try and provide the best education possible for their students, the time required to integrate the collaborative activities into the educational program for the students is a major barrier. The difficulty of developing these situations and opportunities was summarized by one instructor:

“The problem is: change is difficult. Do I really want to do that? I could just go home and spend time with my family, or I could open a can of worms that creates a better innovative community but scares the crap out of a lot of instructors because change is scary.”

— *T.L.*

Interviewees in management positions did not identify a lack of time as a barrier for individuals in their roles; however, they did acknowledge that the lack of time for instructors constricted opportunities for collaboration.

Respondents from both instructor and management roles commented on the difference between Manitoba’s university and college systems. Specifically, it was noted that while instructors in university settings have time allotted to research and related activities, college instructors are hired only to teach.

“Faculty members have high workloads here

in Manitoba, not just at this college. [...] As a manager, then, my concern would be if I encouraged faculty members to do that, what they're really paid to do here would suffer. And it would cause undue stress, too. Without a release model or a funding model to give them more time to participate, it's going to be really tricky.”

— *L.V.*

Administrators directly involved in research or other collaborative activities also noted the lack of available time, both on the part of administrators and the faculty members required to engage in the projects.

“[I wish I had] more time. We only have so many people, both to help and to facilitate.”

— *S.G.*

Only one respondent, an administrator, noted that time restrictions were a barrier for SMEs wanting to engage in collaborative activities with colleges.

5. Culture

The theme of “culture” arose in many of the interviews. It became clear there were two distinct meanings for the term were identified. The first, and most common usage, referred to the institutional culture of the colleges, both within the individual colleges and within the educational system of Manitoba. The second meaning focused on Aboriginal culture.

a. Institutional

As noted, there are two levels of institutional culture: (1) the culture of the educational system in Manitoba (and the role of colleges within that system), and (2) the organizational culture within each of the institutions themselves.

Interviewees who made comments regarding the culture of the educational system in Manitoba were from upper management. All comments of this nature indicated that there is a sense of colleges being disregarded as an important player in the province's education system.

“We are doing our best, but we represent a very small part of the lobby, and we still feel like colleges are the second cousin. We are on the periphery. We are never really at the table with the key stakeholders.”

— *T.B.*

“More so than any other province I have seen, and I have lived in several, that there is a hierarchy in terms of post-secondary institutions. And I see that we have something like 13% of our students coming directly out of high school into [this college]. Why is that? Because the counselors are advising them to go to university regardless of whether or not

that is what they want to do or their aspirations or abilities are aligned that way.”

— *D.B.*

More often, however, interviewees spoke to the barriers created by the organizational culture of the individual colleges themselves. This internally-constructed barrier appeared to be least significant for Red River College which has a longer and richer history of collaborative activities with SMEs. Respondents from Assiniboine Community College and University College of the North more frequently remarked on the difficulties created by the culture of their respective organizations.

“I think it is unfair to say that we are insensitive to it, but it requires a nuanced approach because of the cultural issues around the faculty members themselves — that’s where these cultural priorities come from — which are not oriented toward talking about the labour force.”

— *E.R.*

“Very much there are people with those attitudes of ‘my role is to deliver content.’ I am not saying that in a disrespectful or negative way at all because I think we have excellent faculty who are very supportive of our students, but they matured as instructors, many of them, in

an environment that was not research oriented in any way.”

— *L.L.*

With no notable tradition of research or other significant engagement with business, a culture of content-delivery has emerged at ACC and UCN. Although this is not exclusively the case — there are noteworthy examples of collaborative activity at both institutions — there is a culture of teaching as opposed to industry engagement. This culture is a not-insignificant barrier to establishing relationships between these college and SMEs; furthermore, engaging in significant organizational culture change is neither an easy or swift undertaking.

b. Aboriginal

The issue of Aboriginal culture appeared as a barrier in conversations with only a minority of the interviewees, but the importance they placed on the topic warranted attention. Respondents from RRC and UCN brought up the topic of Aboriginal culture and, by extension, other Aboriginal issues.

“One area that we are hearing more and more about is a need for aboriginal people to gain entrepreneurial skills because often they are in small communities in Manitoba and they don’t necessarily want to come to [the college’s location]. They want to stay close to

community and close to family.”

— *D.B.*

“The college has a very strong role to play in empowering aboriginal learners and empowering aboriginal communities and being a broker between industry and community and to be in the north and to be in the south and working really hard to actually bridge the divide and break the cycle. And there are so many examples of this that colleges do in the community — whether it is our nursing programs or our early childhood education programs or even Inuit people coming down here to take welding and machining and all those things — and us trying very hard to figure out how not to disempower people culturally...”

— *T.B.*

Concerns with promoting college education for aboriginal peoples, whether by providing the curriculum needs by this segment of learner or by providing better accessibility to the existing curriculum, are important. The focus of these conversations, however, tended to turn away from the idea of collaboration with SMEs and therefore fall outside the bounds of this paper.

C. Timing

Timing, as opposed to time, refers to the structuring of college classes, including

scheduling. Instructors, and to a lesser degree levels of management directly involved with faculty, often discussed the fact that collaborative projects with SMEs are often too big to tie into coursework, projects are not aligned with relevant classes, or are not lined up with the school year.

“A lot of these projects that people want are fairly complex and would take two or three years to fully develop, and we’ve got this four month window.”

— *H.M.*

Administrators also acknowledge that timing of certain projects can create a barrier.

“It’s also timing related. For most colleges, I would say May and June are the optimum times to get faculty engaged because most of us have faculty gone in July and August, and they’re in the classroom from September to April. So unless you have other staff that can do it, your capacity is limited by the number of people you have available.”

— *S.G.*

The issue of timing is, to a certain degree, a function of the institutional culture. Specifically, the rather rigid administrative and scheduling structures within which colleges operate dictate the matter of timing.

“Here we have set schedules like a high school, but we seem to find more reasons or more difficulties as to why we can’t do these other one-offs because it is impeding the curriculum we are also trying to get through. I don’t know that that’s a culture thing or over time we’ve come to the idea that students only learn when they sit so much time in a seat and time sat equals things learned.”

— *E.S.*

d. SME buy-in

Eleven respondents indicated that getting buy-in from SMEs was a barrier to collaboration. This barrier differs from money and time barriers in that this category refers to an attitudinal mindset — the idea of the value to the SME inherent in collaborating with colleges. Some of this lack of engagement was assumed on the part of colleges.

“It’s hard to see a local business having the time or money or inclination to pursue a research thing — purely research thing..”

— *D.R.*

Other interviewees responded that the lack of SME buy-in had arisen in their experience as a factual barrier.

“So that is what we have offered and it has been a little difficult to get companies to buy in completely with it.”

— *H.M.*

Although this barrier was reported from all three colleges and across the categories of respondents, there were significantly more individuals from Assiniboine Community College and University College of the North who identified this issue as a barrier.

Because these interviews were only conducted with individuals employed by colleges, the actual reasoning behind the lack of buy-in could not be determined at this point.

e. IP issues

Intellectual property was not a significant concern, nor was IP a major theme that arose from any of the college or any of the classes of respondents. Only seven interviewees raised the topic and, of those, only one individual devoted any significant time discussing it.

“There is the whole issue of intellectual property rights and we haven’t found a way to really work with that. The college, or at least the research department at the college here, is intent on the college keeping some kind of ownership of everything we do here, everything the students do.”

— *H.M.*

Despite IP issues being a concern, it appears through the interviews that it is not a barrier that cannot be overcome without some focus and discussion by the affected parties. The potential implications of these IP issues may be large and worthy of study on their own; however, as they do not appear to be a significant barrier to collaborative activity or otherwise an issue of concern, they are largely peripheral to the current study.

Discussion

Although seven primary barriers to collaboration were identified through the interviews, it is possible that these perceived barriers are, in actuality, aspects of three overarching themes: (1) communication (comprised of awareness and SME buy-in); (2) funding (comprised of money and infrastructure); and (3) institutional inflexibility (comprised of time, institutional culture, and timing).

Funding, as a theme, clearly encompasses the barrier of money. Further, the concern identified by interviewees regarding infrastructure is one that can normally be addressed through funding. The recent funding announcements from the Government of Canada are aimed at addressing this category of barriers to collaboration.

The lack of awareness was the most commonly identified barrier, while SME buy-in was the least often mentioned. Improvement of communication about collaborative efforts would raise the level of awareness both within the college and with potential SME partners. The apparent

lack of effective communication results in the perceived lack of awareness both within the college and beyond its walls. Similarly, the reported lack of buy-in from Manitoba's SMEs may be attributed to poor communication as to the services available to, and the potential benefits resulting from, partnering with a college (Woolgar et al., 1998).

The issues of time, institutional culture, and timing fall under the common theme of institutional inflexibility. Due to the highly structured nature of Manitoba's community colleges, instructors often find it difficult to engage in the activities required to engage with SMEs. As noted, faculty members at colleges are hired as instructors (ACCC, 2011; Fisher, 2009) and collaborative activities fall outside standard duties. When instructors attempt to work with SMEs by incorporating collaborative activities into teaching activities, the highly structured nature of class scheduling frequently acts as a barrier as the flexibility to match instructional activities with the needs of the SME does not exist. The issues under this theme may prove to be more problematic to overcome, as they cannot be simply resolved through additional funding.

An argument can also be made that the lack of internal communication may also be a function of institutional culture; however, as this study examines only perceived barriers, this issue requires further investigation before such a statement can be supported.

Variation in the degree of impact from each class of barrier was noted between the three institutions included in this study. In general terms, respondents from Red River College reported the lowest levels of impact from

each category of perceived barrier, with individuals from Assiniboine Community College and University College of the North often reporting the effects of these barriers to be much higher. As Red River College is the largest of Manitoba's community colleges by a substantial margin, it may be that the availability of resources (or the perception of the availability of resources) mitigates against the perceived barriers.

Despite the consistency of concerns from respondents across colleges and employment categories, the identified barriers remain perceived barriers. Future research should endeavor to identify if the barriers noted in this study act as objective barriers in the development of collaborative relationships between SMEs and community colleges or if it is the perception of barriers that creates this impact. Alternately stated, the question arises: are the barriers to collaboration being correctly perceived by individuals within the colleges, or are the perceptions of college employees creating these barriers?

Although the college system in Canada varies from jurisdiction to jurisdiction, it is highly probable that many of the barriers perceived from within the college system in Manitoba are common across many regions of the country. While this study is limited to the province of Manitoba, with care these findings may be generalizable beyond its borders.

Conclusion

As an initial, exploratory investigation into the perceived barriers between colleges and SMEs, this study raises serious concerns about the ability of these educational institutions to effectively engage in innovation activities with the province's SMEs, based on existing concerns

within the colleges themselves. Current government policy suggests an attempt to address financial barriers. Although these issues may not be inconsiderable, the existing funding programs may not be as useful in addressing concerns not directly related to funding. While funding is frequently essential to the formation and maintenance of collaboration, the noted barriers perceived by colleges may stymie those collaborative activities made possible by funding.

However, it must be remembered that these perceived barriers may only exist from the viewpoint of the colleges. Further investigation into this topic must involve SMEs themselves in order to determine if any, if not all, of these concerns—as well as potentially others not identified from within the colleges—do indeed impact on the ability of colleges to support Manitoba's small businesses in their attempts to innovate.

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