Panel #3
Implications for innovation intermediaries

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Krywiak introduced the panel members as "innovation intermediaries", a term she defined as an individual or organization that acts as a facilitator or catalyst for any aspect of the innovation process between two or more parties. "Innovation intermediaries can be anything from granting councils to incubators, accelerators, academic institutions, research centres, science and technology parks, and a host of other types of innovation agents," she elaborated. She therefore initiated the comments from the panel by asking how their particular organization will be affected by the direction of the 2013 federal budget.

Hewitt began by describing how the wide array of research and training initiatives that SSHRC supports make it well aligned with the budget's goals. "We will continue to do that," he said. "It's part of our mandate. It's what our community needs. I believe it's what Canada needs, in many respects." He outlined an equally broad community of people who have been supported by the Council and maintain links with the council, all of whom are linked with some aspect of innovation. He took this opportunity to note the growing number of those links that are embedded in industry and business, such as the AUTO21 group. "These folks are our partners. They invest in our programs significantly." Above all, he emphasized the support for ideas and human factors that increasingly determines the success of many innovations. "Technology is king. It's phenomenally important in innovation, but without the human thought and behaviour, the understanding that goes with that, product success is not assured by any means."

Galarneau explained that the National Optics Institute in Quebec City does not directly provide financial support for innovation, but rather technical skills and background knowledge. "We have been located in the valley of death since our beginning," he said, referring to the Institute's crucial role in translating knowledge into commercial products. The need to overcome this innovation gap is recognized internationally as the key to making innovation work, but rather than visualizing it as a relatively short step that requires a relatively short bridge, he suggested that the reality is that it really is a much more demanding process that must be supported as such. "It's not a jump but really a long process, and hard work," he said.

Patterson highlighted the budget's emphasis on the role of colleges in economic development, as indicated by the emphasis on skills training and the growing access colleges are receiving from funding sources such as the granting councils and FedDev. He also cast colleges as a small player in this realm, representing no more than 2.8% of the $2.9 billion spent on research in higher education in the Canada. He added that this figure could rise to 5% in the next few years, given the natural fit colleges have with the SMEs that are being targeted by the government. "When you talk to small and medium size enterprises, they have a great deal of comfort of interface with colleges," he said. "Our role has evolved to a very exciting point."

"We have to encourage application of research results and create the vehicles that will place those results in front of the broadest possible audience, who will be in a position to move forward." — Ted Hewitt, Executive Vice President, SSHRC

Tuer indicated that the Canadian Digital Media Network is dedicated to growth within the sector it has identified. "We're measured by job creation, company creation, wealth creation," he said. "We connect primarily with industry, but also intermediary organizations, to help them better serve their customers." Above all, he noted, CDMN works with the full spectrum of small, medium, and large firms, extracting best practices from across the board. Nor is it a matter of growing these firms to a certain point and then abandoning them; for example, he cited the unique challenges of enabling medium-sized enterprises to continue growing even after many of their earlier lines of support have disappeared. "It's easy to serve in many ways the early stage companies; they're all suffering and they all face basically the same challenges," he said. "With medium size

organizations, you need to speak with them one-on-one and you need to understand their challenges and design a program specifically for them. That's why we don't see a lot of medium-size business programming out there."

With respect to serving the needs of firms, Patterson outlined how Niagara College approaches problems posed by industry and what the college could do for them. This could mean helping the local wine industry compare its output with international competitors, or find ways of enabling a small manufacturing plant to improve its productivity.

Hewitt added that SSHRC has been pleased with the way in which their programs have been opened up to allow for greater private sector participation. "This has taken off in ways that we hadn't anticipated," he acknowledged, referring to large partnership grants that could amount to as much as $2.75 million over four to seven years. "We have about a third of these that work with industry partners. Of the matching money that these programs draw, which is also a surprise to us, we extended about $70 million in the first round of funding; the matching funds that were provided to us totalled about $70 million. About 20% of that came from industry, and there's a long list of companies." The skills that drive such programs, he explained, bring ideas into the marketplace, a matter of nurturing business acumen and building working relationships that is quite different from mastering work in a laboratory.

When asked about how this kind of collaboration affects his organization's work, Galarneau recalled the earlier distinction made by Jerome Le Corvec between knowledge and know-how. Knowledge can be a purely academic affair, but the National Optics Institute becomes involved when that knowledge needs to be transformed in more practical ways. Tuer observed that these kinds of collaborations build a vital bridge between the academic environment that educates and trains students and the business environment where they could wind up working. From the smallest start-up to the largest multinational, he said, the hunt for talent is universal. "We create that innovation ecosystem where the talent can connect with the receptor community in a meaningful way."

Krywiak recalled Tom Jenkins' remarks that without basic research, Open Text would not have existed. In light of the federal budget's clear shift away from pure research, she then asked the panel to comment on what balance should be struck between this kind of activity and more applied efforts that lead to knowledge transfer and knowledge mobilization in the marketplace. Galarneau insisted that both were equally important, and must be funded to a comparable extent or neither pure nor applied undertakings would succeed. Patterson agreed, and he maintained that there should be no misperception that applied work taking place at colleges somehow replaces pure research taking place there or anywhere else; in reality, both types of research sustain one another.

SSHRC funds both types, which Hewitt said are distinguished only as good projects, rather than particularly pure or applied. One feature that they should have in common, he noted, is accessibility to the public; by way of example, he raised the results of a study at the US patent office which illustrated that some 70% of products submitted were based on publicly accessible fundamental work done at universities. It remains unknown just how many of the people engaged in that fundamental research ever imagined their work culminating in this kind of intellectual property, but the simple truth is that without the earlier work, you do not get the later invention. "We have to think of this in a holistic way," he said. "We have to fund and support creativity."

Tuer expressed an understanding of the demand for each type of research as being on an as-needed basis, with basic work being essential to advancing some enterprises, while others count mainly on applied research to survive. He then posed a question to Hewitt about the kind of metrics that SSHRC employs to gauge its own efforts to make this distinction between basic and applied work, and whether those metrics include an assessment of commercialization efforts. Hewitt confirmed that the SSHRC approach does include such

metrics, but he cautioned that many of the projects it supports have extremely long life spans that may make it difficult to connect the initial work with its later impact. “An idea or a study that influences policy may not see the light of day for 20 or even 30 years,” he said, citing the example of recent old age security reforms that have their roots in research from the 1970s and 1980s. Nevertheless, he argued: the fact that industrial partners join SSHRC in such undertakings means that there must be some value for them. “They would not be wasting their time with us otherwise.” Moreover, SSHRC is building on such interest by establishing a group responsible for reporting the ultimate value of collaborative work. By way of example, he recalled a $25,000 project that improved the design of a nozzle used in oil sands recovery equipment, which the partner firm reported has reduced its annual operating costs by about $40-$50 million.

Returning to Tuer’s comment that the emphasis on support for start-ups may do little more than abandon them on the treacherous brink of a competitive marketplace, Krywiak asked if this was in fact true and whether there might be a way to help them at this point with follow-on financing or some other initiatives. Hewitt conceded that this situation is real, with some firms lacking the resources to do anything but sell to an interested party. That being said, he also noted that supporting firms at this stage in their development is much more challenging than helping start-ups. “It could be anything from advocacy with government to connecting them with venture networks,” he said. “Things like that can result in great returns and gives them the perspective that they can grow their company here in Canada.”

Speaking more specifically, Patterson described a network of 24 colleges that work with the Ontario Centres of Excellent to share the necessary expertise to companies that might be facing this kind of growth challenge. Galarneau echoed this kind of enthusiasm, indicating that his own organization was doing just that by providing the technology and know-how for its client firms to focus on the needs of their customers. “If they can put all their attention to customers, then they will raise the market and bring good solutions,” he said.

Krywiak raised the notion that the growth of a digital economy, one premised on massive amounts of information and the skills necessary to employ that information, will alter our expectations for education and entrepreneurial success. Hewitt pointed out that this tremendous growth in data was being driven by the growth of social or business networks, as opposed to the collection of readings from scientific facilities. “We have an interest in that, because we work in the realm of society, social data, human thought, and behaviour,” he said, adding that this interest extends to the nature of the networks that will be used to process this growing wave of information. Potential gold mines, such as databases containing the details of how the country’s hospital emergency rooms are being used, often remain inaccessible for reasons that can range from the technical incompatibility of storage systems to an inability to identify the right people who could coordinate a collaboration. The greater challenge, he concluded, will be organizing ourselves and our institutions in such a way as to take advantage of such data, a challenge that we may not yet be ready to confront.

Patterson agreed, suggesting that Canada was not necessarily embracing the promise associated with Massive Open On-line Courses that are starting to become widely available elsewhere. Tuer added that this lag reflects how long it has taken many of us to realize that we have been living in a digital economy for the past decade. “All we need to do is look around the world and realize that from an adoption perspective we’re way behind,” he said. “Europe and even Africa are doing things that we’re still looking at from a research perspective, which is unacceptable. It’s not apathy; I think there’s a lot of passion. There’s just a lack of urgency, and a bit of complacency, in terms of the fact that we have a pretty good lifestyle here. This is not an option anymore. If we don’t step up, and we don’t do these sorts of things and we stop talking about it and start doing it, we’re going to get left behind.”

Galarneau insisted that however much we may think we are living in a digital economy now, there is even more to come. Just as land lines initially connected our homes and workplaces, mobile phones have become a new

means of connecting people directly, and soon the appliances in those homes and workplaces will be similarly linked to networks. “We will go from buildings to people to devices being connected,” he said. “There will be a lot of data available and going on-line everywhere.”

As a final question to the panel, Krywiak asked how we measure success and what that measurement means with respect to sustainability of these efforts to promote innovation. Tuer confessed that while it is possible to come up with concrete measures of success, the definition of sustainability is more difficult. “A big part of the demographic that needs our help the most are the ones that can’t afford it,” he said, noting that much of what the Canadian Digital Media Network does is aimed at finding ways of helping these small enterprises survive and thrive. “We do operate on the Robin Hood principle. We get those who can afford to pay to pay a little bit more so we can offer things to those who can’t. But those who pay a little bit extra get value out of that as well.”

Patterson concurred that outcome measures were relatively easy to assemble, but sustainability is harder to characterize. “While our funding is dependent on post-secondary programming, the whole research function is one that we have to be entrepreneurial about,” he said. And however difficult it may be to make those activities sustainable, he regarded the ongoing interest from clients of all sizes and disciplines as testimony to the fact that the need to nurture innovation will only continue to grow. Similarly, Hewitt said SSHRC could measure its own success by how many of these working partnerships it has been able to establish, and with increasing amounts of data available to examine the impact that these partnerships have had, the direction of these efforts will be shaped to yield the best results. Meanwhile, Galarneau cautioned that his own organization had found real limits to the amount of external support that could be obtained for this kind of work, referring specifically to the fact that no more than 50% of the funding can come from clients, which could ultimately compromise the sustainability of such efforts.

The first question from the audience asked Hewitt if SSHRC had made any attempt to monetize the data it was assembling. Hewitt said that prospect had been considered but not yet acted upon, because the potential value of this data has not yet been well defined. For example, could studies of traffic flow around a major city be used to enact policies that improve drive times, and would that change offer a quantifiable economic advantage? Similarly, geographic information systems that can assemble details about the lifestyle of neighbourhoods could have real value for companies interested in marketing to the local population; what price can be put on this data, however, is still in question.

Doug Barber asked if there had been any changes to the silos that in Canada have isolated privately funded work and publicly funded work, preventing them from interacting and benefitting one another. Tuer replied that his network was consciously trying to break down such silos by making it clear to participating organizations that there was much for them to gain by overcoming these barriers. “It’s a one-on-one endeavour,” he said. “Just by creating the network and connecting people doesn’t make the silos come down. It’s about creating relationships and nurturing relationships, and we’ve been able to do that with our partners to do some tangible things. But the silos are still thick, and sadly, they’re still popping up.”

Sarah Chappell, of Global Advantage Consulting, recalled David Watters’ comment that some measures, such as job growth numbers, can exaggerate the actual impact on the economy. In that context, she wanted to know how this information should be attributed in order to be most accurate. Tuer admitted that it is a struggle to clarify attribution in the databases that mount in the wake of collaborative projects. “One of the things that we’ve tried to do is reach out to those that we believe have had impact and ask them to quantify for us what they feel the impact has been,” he said. “If they raised $5 million in financing, and one of our organizations was a part of that, what would have been the effect if you hadn’t had that input?” The difference, he noted, would reveal the network’s actual impact. And even if the evidence for this impact ends up being anecdotal, he would

sooner hear it from a network client than have the network itself express it. “I’d sooner have them sit up here and talk about what CDMN has done for them than for me to tell you all the great things that we do,” he concluded. Jeff Crelinsten later noted that the National Research Council’s Industrial Research Assistance Program has now imposed an obligation on its clients to provide just such feedback about the value that was created by its activities through the program. By way of making the problem even more complex, Galarneau referred to the possibility that a project could save jobs, as opposed to create them.

A final question considered the fact that this discussion amongst innovation intermediaries amounted to preaching to the converted, with the next step being a matter of getting the country to appreciate the need to get basic research into the market and how to get the market into basic research. Referring to the stated concerns of academics, who fear that a growing emphasis on applied research will compromise the resources available for pure research, the panel was asked how people attending this conference can address that fear in order to tout Canada’s need for competitive commerce, products, and services.

Hewitt replied that even people in the humanities, including art, music, and history, are used to seeing their work commercialized in one respect or another, to the extent that our televisions are packed with programming that draws on these subjects. Likewise, people in the pure sciences will know that their work can also wind up in successful commercial products of one sort or another. “It will drive the system because there are those of us who will find ways to get at things, to commercialize them, if they know where it is, if they know how to get at it, and if it’s available.”