Innovation Spotlight*

Innovation Leadership in Polytechnics Beyond COVID: Sensemaking and Transformation in an Age of Uncertainty

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Abstract

The COVID pandemic has and continues to affect us all. It is the all-encompassing catastrophe that has forced us to face uncertainty and question our values and face our challenges in every aspect of society, including academia. It has also been the commonality that binds us all together, our shared experience in an age of uncertainty. For Polytechnics overall, it has also been a call-to-action and has clearly demonstrated our ability to innovate, adapt and overcome. Whether it has been the transitioning to an online, remote workforce or the accelerated use of new technological advances in education, Polytechnics have embraced these challenges and pivoted to meet the needs of students, faculty and industry. As such, Polytechnics have continued to emerge, now well positioned to prepare Canada for a prosperous future and growth through insights learned during the pandemic and innovative new educational program offerings and formats.

This paper discusses the critically important role of innovation leadership in Polytechnics beyond COVID. Starting with an example of innovation, I will introduce the new interdisciplinary Centre for Digital Transformation (C4DT) at the British Columbia Institute of Technology. This centre brings people together from across various distinct communities of practise and expertise to confront complex modern challenges through a process of communication, collaboration and sensemaking. Then merging significant literature review, I will examine recent success stories and practise transformations that shine light on Polytechnics innovation leadership role beyond COVID. Finally, I will examine the future of Polytechnics in an age of uncertainty and challenge readers to reflect upon what they have learned over the past year and consider the question, How can their own Polytechnics embrace these insights through sensemaking and transformation to embrace innovation leadership beyond COVID?

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Introduction

The COVID pandemic continues to affect us all. It is the all-encompassing catastrophe that has forced us to face uncertainty, to question our values and to face our challenges in every aspect of society, including academia. Even as we start to look beyond the COVID pandemic, considerable challenges still await us. According to Earhart & Cath (2021), the COVID pandemic has been a "rehearsal" for the much larger forthcoming main event of anthropogenic climate change.

The COVID pandemic has also been the commonality that binds us all together, our shared experience in an age of uncertainty. Although our individual experiences during the pandemic will have been based on the understanding we ourselves make of the relevant information available to us and the specific circumstances in our lives, and it cannot be overstated that we truly are all in this together. Our common expectations, hopes, fears and, for many of us, a clearer sense of awakening to the fact

*Innovation Spotlights These are contributions that highlight innovative practices, approaches, or tools and provide accompanying evidence that speaks to the effectiveness of the innovation, including but not limited to an innovative teaching practice or an innovative methodology benefitting academia, industry, and community partners.

that we are all part of the same global village. This same solidarity (Auge, 2008) will be required as we deal with the considerable challenges still awaiting us.

For Polytechnics overall, the COVID pandemic has also been a call-to-action and has clearly demonstrated our ability to innovate, adapt, and overcome when faced with circumstances that were largely unanticipated. Whether it has been transitioning to an online, remote workforce or the accelerated use of new technological advances in education, Polytechnics have embraced these challenges and pivoted to meet the needs of students, faculty, and industry. The COVID pandemic has shifted the way Polytechnics engage with society overall, with the increased use of online learning resources and more technologically advanced tools (Young, Deller and McCallum, 2021). With the continued pandemic-related issues and challenges, we can expect this trend to continue well into the foreseeable future.

As such, for Polytechnics, the COVID pandemic has been a learning opportunity that has highlighted the need to be continuously adaptable and innovative in everything we do. It has become the fundamental catalyst to shift the traditional culture and program delivery models within Polytechnics to be more responsive to the needs of students, faculty, industry, and society overall. Although this is no easy undertaking, it represents the foundation of innovation leadership in Polytechnics beyond the COVID pandemic. Polytechnics will continue to transform during this time of uncertainty and emerge well-positioned to prepare Canada for a prosperous future and growth through insights learnt during the pandemic and innovative new educational program offerings and formats.

One example of innovation leadership in Polytechnics beyond the COVID pandemic has been the introduction of the new Centre for Digital Transformation (C4DT) at the British Columbia Institute of Technology (BCIT). This centre brings people together from across various distinct communities of practice and expertise to confront complex modern challenges through a process of communication, collaboration, and sensemaking towards transformation. The Centre for Digital Transformation was designed to appeal to interdisciplinary teams of experts from fields like cybersecurity, artificial intelligence, the internet of things, data analytics, remote piloted aircraft systems, simulation, and multimedia to collaborate, research, and share issues, information, best practices, and opportunities related to the realm of digital transformation, including the recent addition of the Smart Campus Initiative at BCIT.

"With change comes opportunity. In our day-to-day consultation with industry leaders and business owners, the digital transformation of our world and its associated challenges have clearly become the dominant theme. New models of business operation like telecommuting, online collaboration, geographically distributed projects and global marketplaces are increasingly redefining the way people live and work. Digital technologies are at the root of this worldwide transformation, and this generates an open invitation to catalyze innovation, think boldly and reimagine the future. The new Centre for Digital Transformation at BCIT has been conceived to take an interprofessional approach and link our on-staff champions and advocates in pursuit of integrated, often multi-disciplinary solutions. Only together can we tackle complex problems, inspire innovation, and foster global progress."
(Roemer, 2021)

As the world changes beyond COVID, so too will the C4DT, with the aim to ensure that skillset relevancy is prioritized and people are empowered as the surrounding world evolves. Training and ongoing skill development will also be made available to the industry to support the development of digital skills across the workforce and the continuous futureproofing of Canada's workforce. The C4DT also has several emerging focus areas, including digital twins, automation, smart building integration, blockchain, and microservices. In 2022, the C4DT also plans to expand the C4DT model across Canada with the addition of several other Polytechnic Institution collaborations. While it is understood that digital transformation has existed long before the COVID pandemic, now there is a sense of urgency, and digital transformation has become a key strategic initiative across most, if not all, organizations. According to the International Data Corporation (IDC), worldwide digital transformation (DX) investments in technologies and services that enable digital transformation will reach $6.8 trillion by 2023 (IDC, 2020).

The Centre for Digital Transformation at BCIT represents an example of innovation leadership in Polytechnics beyond the COVID pandemic and provides a promising framework for future initiatives in other Polytechnical Institutions. The C4DT is also unique in its design and elements, including being inter-disciplinary, people-focused, leadership empowering and existing within a hybrid environment or framework called "common ground" in which innovation and entrepreneurship are encouraged and supported. The long-term goal of the C4DT is to be one of the many resource hubs within BCIT that supports to futureproof

education and careers, and to a greater extent, provide the fundamental catalyst to shift the traditional culture and program delivery models within Polytechnics to be more responsive to the needs of students, faculty, industry, and society overall.

The Centre for Digital transformation puts people first or is "people-focused," in that technology needs to support people and society overall, and people need to have the skills to make the technology useful. The innovation or creative aspect of technology is entirely dependent on people (Frankiewicz and Chamorro-Premuzic, 2020). This involves not only lifelong learning, upskilling, and reskilling but, more importantly, also providing an environment in which people, "students, faculty and industry," are comfortable and encouraged to communicate, ask questions, admit shortcomings and even failures and then are provided with an opportunity to collaborate and develop new skills.

Many of the current and future challenges and opportunities facing Polytechnic Institutions will require skillsets beyond the traditional lines of communications within schools and their unique focus areas. For this reason, the Centre for Digital Transformation is interdisciplinary, with teams of experts brought in from across the various schools as required. There is also the added benefit of interdisciplinary communication and collaboration to create an ecosystem of innovation (Crow and Dabars, 2015) that would not exist within the traditional lines of communications within the Polytechnic Institution. If we consider, for example, the digital twinning of aircraft, we require skillsets from various areas of expertise, including the School of Transportation, the School of Computing and the School of Business and Marketing.

The Centre for Digital Transformation is also leadership empowering or encourages students, faculty and even industry to come forward with their ideas and bold visions for the future. The centre develops and fosters innovation and celebrates change. Many people have reached out to the C4DT when it was first launched with opportunities and ideas that just required some assistance and guidance, whether it was with grant writing, next steps or aligning network contacts. The C4DT reduces barriers and institutional frictions and plays a significant role in the actual change process (Ancona, 2005) by creating an environment in which others are empowered to act. It is anticipated that by creating this positive change environment, we will see the gradual shift of the traditional culture within Polytechnics to be more responsive to the needs of students, faculty, industry, and society overall.

The Centre for Digital Transformation also exists within a hybrid environment or framework called "common ground." This has proven to be a fundamental component of the C4DT during the COVID pandemic and will continue to evolve through research and become part of the permanent landscape even after the C4DT's physical facilities are completed in 2022. Ongoing communications and collaboration across various digital media have been identified as being a critical component for the success of the new centre. With the rapid shift to online learning and the remote workforce at the start of the pandemic, the Centre for Digital Transformation started incorporating various communication and collaboration technologies, including Zoom, Miro, and SessionLabs. These technologies were further adopted for use within the C4DT for projects and collaborations based on the FORTH Online Innovation Methodology (Wulfen, 2021) and will continue to be used and refined for further use in 2022 and beyond.

Even with the centre's new physical meeting space, it is anticipated that the current hybrid model will remain, and the addition of smart technology and video walls will only enhance the centre's current communication and collaboration technology. There is also the added benefit of the Centre for Digital Transformation being able to collaborate with the various BCIT campus locations and even other C4DT centres across Canada with the addition of several other Polytechnic Institution collaborations planned for 2022. Going back to the "people-focused" aspect of the C4DT, it is important to ensure that everyone is comfortable with and develops the skills to use online communication and collaboration technology.

One final element of the "common ground" framework is the adoption of the sensemaking theory throughout everything done within the Centre for Digital Transformation. Sensemaking, the term coined by Weick (1995), means making sense of the world around us. As mentioned previously, the COVID pandemic has been the all-encompassing catastrophe that has forced us to face uncertainty, question our values, and face our challenges in every aspect of society, including academia. The act of sensemaking is discovering new terrain as you are inventing it—embracing uncertainty and to "talk the walk" as we create our new environment. Contrary to the commonly used term "walk the talk," which often leads to hypocrisy, talking the walk is based on discovery and creates an opportunity for more genuinely adaptive discussions, which are critical during times of uncertainty such as these.

Beyond the COVID pandemic and as part of the C4DT, sensemaking provides us all with the shared meaning,

commonality, or collective reality in which the future of true innovative leadership in Polytechnics will emerge.

One recent success story of the Centre for Digital Transformation has been the collaboration between the Royal Canadian Mounted Police (RCMP) and students at BCIT. The students working with BCIT's Cybersecurity Team and RCMP members developed a Cyber Learning Resource Portal to provide frontline members with training resources to become better equipped and specialist investigators to investigate complex cyber investigations more quickly. The training material includes topics ranging from cryptocurrency, bitcoin, blockchain, ransomware, malware, phishing, IP location tracing, and more. As well, there are infographic videos, documents, and cybercrime investigative guides, along with templates and checklists, to provide a "one-stop-shop" learning and resource portal (Chen, 2021).

The collaboration between RCMP and the Centre for Digital Transformation also highlights how Polytechnics can provide innovative leadership, best practices, research, support, and training in cybersecurity, data analytics, Internet of Things (IoT), and privacy. With several additional collaborations in 2022, the C4DT will continue to focus on the leadership and management of digital transformation. The interdisciplinary team works with faculty, industry, and students to empower people, shape Canada, and inspire global progress.

Finally, we all need to consider the responsibility of innovation leadership in Polytechnics beyond the COVID pandemic and contemplate the potential opportunities for Polytechnics in an age of uncertainty as we navigate the future and its challenges. To reflect upon what we have learnt over the past year and to ask the question: How can our own Polytechnic Institution embrace these insights through sensemaking and transformation to take on innovation leadership beyond COVID? As we continue to chart the path forward, I have no doubt that Polytechnics will continue to transform during times of uncertainty and will emerge well-aligned to play a critical role in positioning and preparing Canada for a prosperous future through insights learnt during the COVID pandemic.

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