Ilana Lemay - Discovery Snapshot

CATAMOUNT

FELLOWSHIP FOR EMERGING CHANGEMAKERS

BRIDGING THE DIGITAL DIVIDE

Mapping the Digital Divide in Calgary: The interrelationship of technology poverty and systemic racism.

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Access to technology means access to information that is essential to daily living in today's social environment. Together digital access and digital literacy provide a robust network of entryways to socialization, communication, healthcare, education, and cultural preservation. However, some communities are falling into the digital divide. A deeply ingrained network of racial and cultural discrimination in Canada is perpetuating technology poverty.

RESEARCH METHODOLOGY

Data cannot effectively convey the emotion of experience.

Much of the framing for this research project came from a system of story seeking; connecting with Calgarians and listening to their experiences. Additional information was collected through a literature review.

THE LINK TO SYSTEMIC RACISM

Digital access is unaffordable for many. In Calgary, individuals from a visible minority account for 48% of those at risk of poverty, and Indigenous persons are experiencing or are at risk of poverty at nearly double the rate of non-Indigenous persons (Vibrant Communities Calgary & Canadian Poverty Institute, 2021). Rural Canadian communities are bearing the brunt of the digital access crisis; many of these are remote Indigenous communities.

COMPONENTS OF DIGITAL ACCESS

Access to reliable & affordable broadband internet.

Digital Literacy & access to the education needed in order to effectively use technology.

Access to devices such as laptops, computers, smartphones, etc.

A lack of access to technology also means a lack of access to information, communication, socialization, and services.

Impacts of Technology Poverty:

- Inability to retain social networks, leading to social isolation.

- Difficulty obtaining clinical care.

- Decreased opportunity for accessing education.

- Lack of access to financial resources, including banking.

WHAT IS KEEPING THE DIVIDE OPEN?

Uncompetitive market conditions: the telecommunications market in Canada is an oligopoly. Approximately 85% of the market share of communications revenues in Canada are held by 5 companies (Canadian Radio-television and Telecommunications Commission, 2019).

Lack of Public Policy Advocacy: Weak government regulations are allowing data packages and internet prices to climb.

Lack of broadband connectivity in rural communities suggests that the government is relying too heavily on market forces to provide reliable broadband service without policy intervention (McMahon, 2014).

Poor Funding Environment: Independent tech companies have a massive barrier to entry in terms of funding. Often funding is difficult to obtain and complex (Canadian Internet Registration Authority, 2020).

THE ROLE OF CULTURE IN TECHNOLOGY

Studies in Human-Computer Interaction indicate that cultural perspectives shape the ways that humans interact with and interpret technology, but Human-Computer Interaction research in this area is deficient (Pereira & Baranauskas, 2015).
A gap in digital design knowledge may be interfering with the ability to construct accessible technology across different cultural contexts.

DIGITAL SELF DETERMINATION

A longstanding history of colonialism in Canada is placing a barrier on self-determined Indigenous digital innovations.

"Still, we argue that international literature continues to focus far too heavily on what technology can do for Indigenous peoples – not what Indigenous peoples have and can do with technology."

(Winter & Boudreau, 2018)

RECOMMENDATIONS

- Increased public policy advocacy for underserved communities.
- Better funding for independent tech companies,
- Increased focus on culture in Human-Computer Interaction research.

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Ilana Lemay - Creative Work

CATAMOUNT
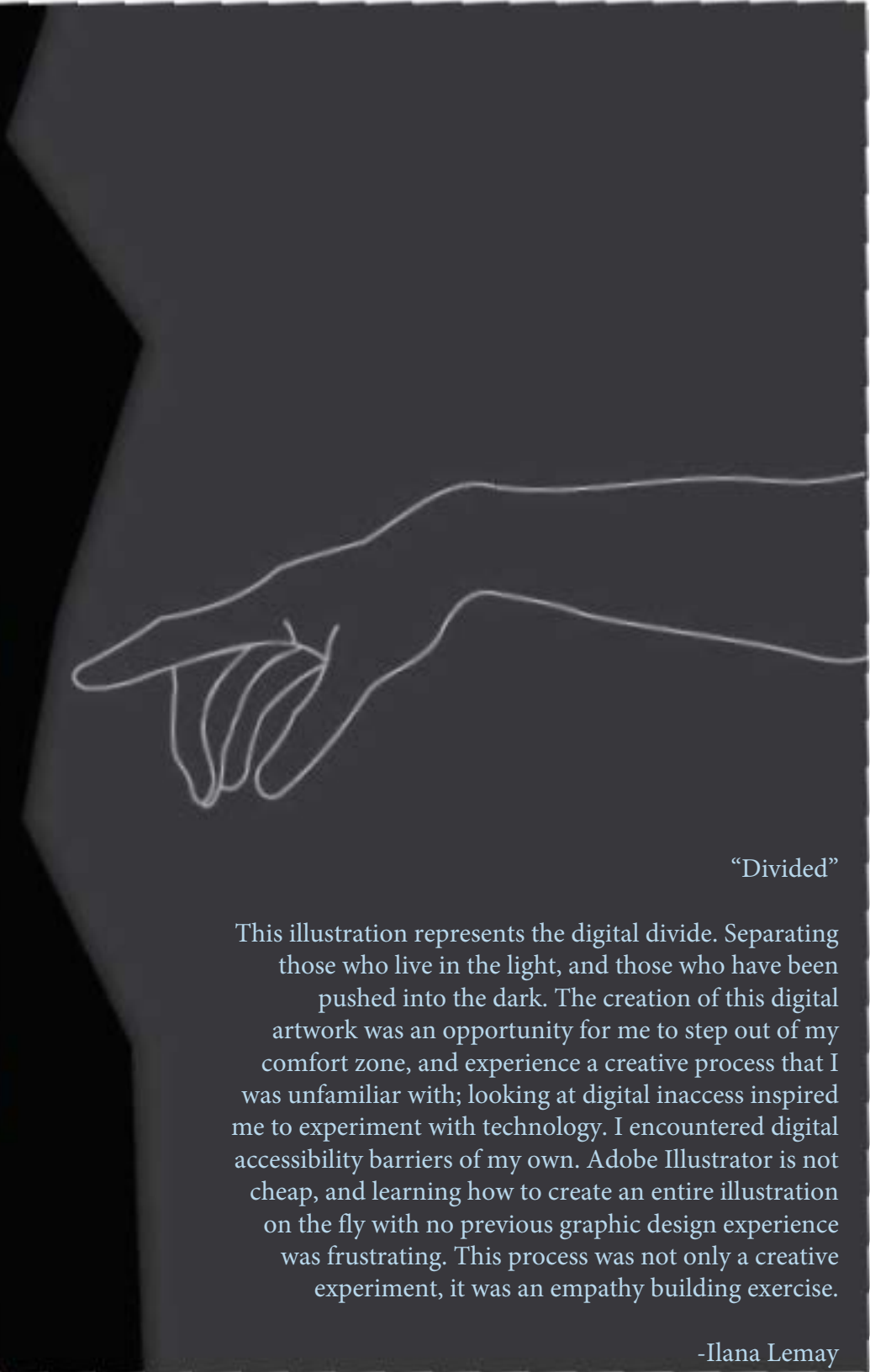
"Divided"

This illustration represents the digital divide. Separating those who live in the light, and those who have been pushed into the dark. The creation of this digital artwork was an opportunity for me to step out of my comfort zone, and experience a creative process that I was unfamiliar with; looking at digital inaccess inspired me to experiment with technology. I encountered digital accessibility barriers of my own. Adobe Illustrator is not cheap, and learning how to create an entire illustration on the fly with no previous graphic design experience was frustrating. This process was not only a creative experiment, it was an empathy building exercise.

-Ilana Lemay

Ilana Lemay - Scholarly Output

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Mapping the Digital Divide in Calgary

The Interrelationship of Technology Poverty and Systemic Racism

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LAND ACKNOWLEDGEMENT

The Catamount fellowship was carried out in an important and sacred place within Treaty 7 and the traditional territories of the Niitsitapi from the Blackfoot Confederacy, including the Siksika, Piikani, and Kainai Nations; the Îyârhe Nakoda of the Chiniki, Bearspaw, and Wesley Nations; and the Dene of the Tsuut'ina Nation. Southern Alberta is also home to the Métis Nation of Alberta, Region 3. Mount Royal University is located where the Bow River meets the Elbow River. This site has long been called Mohkinsstsis by the Blackfoot, as well as Wîchîspa by the Nakoda, and Guts'ists'i by Tsuut'ina. This land is also the birthplace of the City of Calgary.

As a guest on this land, it is with great honor that I am able to work, study, and live within these traditional territories because of the hospitality of the Indigenous Nations and Peoples both past and present.

INTRODUCTION

With the support of Mount Royal University and the Institute for Community Prosperity, and in partnership with Vibrant Communities Calgary, I have dedicated my 2020/2021 academic year to uncovering and mapping the system of digital inequality in Canada and its link to systemic racism. This paper will serve as a steppingstone towards understanding what needs to change in our communities before we can move towards shared prosperity for all and before we can close the digital divide.

BACKGROUND

We began our journey gathered around a warm, crackling bonfire on a chilly September morning; a group of eleven undergraduate students eager to see change in our community. On that morning we shared stories about our lives, we shared our hopes for the future, and we were reminded that through listening, and learning, we have the capacity to catalyze progressive change in our communities. The Catamount Fellowship provided a medium for us to explore this desire for changemaking. The fellowship is a co-curricular, transformational learning experience provided by the Institute for Community Prosperity for Mount Royal University Students, that focuses on community engagement. During my journey through the fellowship, I collaborated with Vibrant Communities Calgary, a non-profit organization focused on long-term poverty reduction strategies within the city of Calgary.

ANALYSIS PROCESS

To conduct my research, I applied a process of system mapping. In order to map and understand the intertwined systems of racism and digital inequity I:

- Conducted a literature review on digital inequity in Canada, and digital access for Indigenous communities.
- Reviewed current policy on digital inclusion, and the current state of digital access in Canada.
- Attended courses about system mapping, social innovation and changemaking.

STORY SEEKING

During November of 2020, I was enrolled in a course titled Facilitating Social Innovation. During our classes we would look at creative ways to host meetings and gatherings that would promote participatory dialogue and inclusive engagement. During the latter half of that course, we were introduced to a set of principals written by Bob Joseph, titled 27 Tips of What to Say and Do When Working Effectively with Indigenous Peoples. Joseph's (2019) 27 tips place much emphasis on the fact that facilitation with Indigenous communities differs in pace and style compared to the typical corporate meeting structure. Most notably Joseph (2019) states that spoken word is sacred and he says, "in Indigenous culture, your word is more important than anything written on a piece of paper" (p. 23). As we moved forward with our course, we practiced facilitation using these 27 principals. Often, a part of that was honouring storytelling, and cultivating emotional connections with our work. This is when I realized that to go forward with my fellowship topic of the digital divide within Indigenous communities, I must begin seeking out stories.

I began speaking with members of non-profit organisations in Calgary that had firsthand accounts of people's daily struggle with digital poverty. Some individuals who had been pushed into the digital gap were having difficulty accessing medical care, mental health supports, education, financial information and so much more. I then began speaking with some individuals who had experienced technology poverty themselves. There were international students who did not have the funding to keep up with the technology demands of online university; there were single mothers who did not have the funding to provide a laptop for their children's online school; there were Indigenous Peoples living in remote areas outside of the City limits who could not afford the exorbitant price of wi-fi in those areas. Beyond the affordability, there were people who did not have the education or knowledge of how to use technology to their advantage; for example, paying their bills on their online banking account. All of these people were racial minorities.

As a white settler in Canada, I had to look inward during this time. I had to understand how the system that I was born into allowed me to be sheltered from these realities. I had to understand that the system allowed me to prosper while others fell behind, and I recognized that people, who look like me, are the ones keeping this system in place.

MOVING OUR LIVES ONLINE

The entirety of this fellowship was carried out during the Covid19 pandemic, and all aspects of it were completed virtually. 2020 was the year of the virtual gathering. In March 2020 much of our daily activities in Canada, and around the world moved online, and many activities are still being done online. Schools and universities, mental health appointments, some medical appointments, work, fitness classes, and so much more began operating online. The internet also became the primary way in which government and heath organizations communicated their information and recommendations about the pandemic. While the digital divided was certainly a pressing problem prior to this shift (Haight et al., 2014), it has now been exacerbated and weak spots in the system are being exposed.

A few of the stories I encountered during my system analysis came from immigrants living in multi-generational homes. Between these stories there was a common theme: sharing technology is not a viable option right now. For example, one household might have three school age children who now need to attend class online, two members who need to attend work online, and another member who needs to attend university online. The current affordability of technology was not allowing these households to own more that one or two computers, or to pay for an internet package that could support this much activity.

WHAT IS DIGITAL ACCESS, AND WHY IS IT SO IMPORTANT?

My fellowship team and I spent many conversations discussing what access really means. For me, access meant that as a university student living independently away from home and attending university online, at least I needed a laptop, affordable Wi-Fi that could support my daily hours of online classes, and a phone with a camera for video projects. We determined that access to technology is all encompassing. It includes access to devices such as smartphones, personal computers, or laptops. It includes the essential infrastructure that brings internet and phone service to communities. It includes digital literacy: the education and ability to use technology effectively. Most importantly it means that these technologies must be affordable. Together digital access and digital literacy provide a robust network of entryways to socialization, communication, healthcare, education, and cultural preservation.

DIGITAL ACCESS AS A SOCIAL DETERMINANT OF HEALTH

The World Health Organization [WHO] (2020) defines digital health as "the field of knowledge and practice associated with the development and use of digital technologies to improve health" (p. 5). Increasingly, and especially during the Covid19 pandemic, technology is being used to deliver health care services. Following the onset of the Covid19 pandemic, digital health has been celebrated as an innovative way to continue clinical care while avoiding rapid transmission of the virus (Crawford & Serhal, 2020). Individuals who have fallen into the digital divide are now facing not only digital inequity, but also health inequity. Crawford and Serhal (2020) argue that while the value of virtual healthcare is certain, there is an unintended perpetuation of health inequity by ignoring digital equity concerns.

A lack of access to technology also means a lack of access to information, communication, socialization, and services (Beaunoyer at al., 2020). Beaunoyer et al. (2020) states that "technology use, prompted by physical access and digital literacy, constitute a determinant of health having multiple impacts on physical, mental and social health" (para. 2). It is certain that lack of access to technology is detrimental to our overall health by decreasing the ability to retain social networks, the ability to seek digital clinical care and the opportunity to access education.

COMMUNITIES LEFT BEHIND

Rural Canadian communities are baring the brunt of the digital access crisis; many of these are remote Indigenous communities. Prior to the onset of the pandemic, the Canadian Radio-television and Telecommunications Commission [CTRC] (2019) released their Communications Monitoring Report. The report indicated that only 27.7% of First Nation reserves had access to internet that was deemed suitable for typical day-to-day tasks, solidifying the idea that digital inequities existed long before the pandemic hit. Just 3 years prior, in 2016, the CTRC declared that internet is an essential service (CTRC, 2016). Despite internet now being an essential service, our most vulnerable populations are being left in the dark.

There are two primary reasons that can explain why lack of digital access in rural areas is so prevalent. Firstly, there are geographic considerations that must be assessed when erecting infrastructure, and often these rural communities are too remote, and have terrain that makes it difficult to construct the infrastructure needed to support the digital needs of the community (McMahon, 2014).

Secondly, and perhaps most importantly, digital access in these remote communities is unaffordable. In a report submitted to the Canadian House of Commons by the Standing Committee on Industry, Science and Technology, economic feasibility was noted as the most important facet of digital access, and it was suggested that government measures must pay close attention to internet affordability, particularly in remote communities (Ruimy, 2018). Historically, in terms of the digital divide in Canada, government forces are guilty of relying too heavily on market forces, and those market forces are failing to provide adequate connectivity to Indigenous communities that sit outside of urban centers (McMahon, 2014). Evidence suggests that this misplaced reliability is still holding the digital divide open today.

THE ROLE OF CULTURE IN TECHNOLOGY

> *"To govern ourselves means to govern our stories and our ways of telling stories. It means that the rhythm of the drumbeat, the language of smoke signals and our moccasin telegraph can be transformed to the airwaves and modems of our times. We can determine our use of the new technologies to support, strengthen and enrich our cultural communities."*
>
> *(Ahasiw Maskegon-Iskwew, Drumbytes.org 1994)*

In January, halfway through my fellowship journey, I held an online community conversation to discuss how culture and race may affect access to technology. Participants shared stories about how systemic racism has caused a roadblock in their relationship with technology. Notably, there appeared to be a correlation between Calgary neighborhoods with sizeable Black, Indigenous, and People[s] of Colour [BIPOC], and immigrant populations, and Calgary neighborhoods where digital infrastructure was less efficient. Some participants also shared that their interactions and relationships with technology are fueled by their worldviews and ways of being.

Digital inequity is enforced by systemic racism. In Calgary, individuals from visible minorities account for 48% of those at risk of poverty, and Indigenous people are experiencing or are at risk of poverty at nearly double the rate of non-Indigenous people (Vibrant Communities Calgary & Canadian Poverty Institute, 2021). In 2018, approximately 85% of the market share of communications revenues in Canada were held by 5 companies: TELUS, Bell, Shaw, Rogers, and Quebecor (CTRC, 2019). This oligopolistic market, paired with weak government regulations, is driving internet and mobile data prices up. In March 2021, Rogers announced a 26-billion-dollar plan to acquire Shaw (The Canadian Press, 2021), further reducing the competitive

conditions of the telecommunications market. Additionally, the lack of independent communications companies is creating a barrier to constructing infrastructure in rural areas, where operating costs are higher, and profitability outcomes are lower. As systemic racist structures in our communities continue to perpetuate poverty, BIPOC persons in Calgary and surrounding areas are less likely to have affordable digital access.

Technology has an impact on culture, language preservation and youth's abilities to connect with important story tellers, and these must be considered when attempting to improve digital conditions (Internet Society, 2019). The creation of virtual gathering places for collaborative communication continues to be a priority for many organizations. Studies in Human-Computer Interaction [HCI] indicate that cultural perspectives shape the ways that humans interact with and interpret technology (Pereira & Baranauskas, 2015). Despite the seemingly collective understanding that cultural considerations are an important factor in the design of digital interfaces, HCI studies focused on culture are deficient (Noiwan & Norcio, 2006, as cited in Pereira & Baranauskas, 2015). Pereira and Baranauskas (2015) state that "there is a lack of practical guidance for Computer Science researchers and practitioners as to how to address values and culture in design contexts" (p. 89). This gap in digital design knowledge may be interfering with the ability to construct accessible technology across different cultural contexts.

DIGITAL SELF DETERMINATION

> *"Still, we argue that international literature continues to focus far too heavily on what technology can do for Indigenous peoples – not what Indigenous peoples have and can do with technology."*
>
> *(Winter & Boudreau, 2018)*

Longstanding colonial stereotypes of the Indigenous people's relationship with technology is placing a barrier on self-determined Indigenous digital innovations. Western narratives have stereotyped Indigenous peoples as "fearful of technology's ability to 'steal souls'" (Golub, 2004, as cited in Winter & Boudreau, 2018, p. 38). As this historical narrative has followed us into the future, Indigenous perspectives are being left out of digital imagery, and the need for digital access is being ignored. O'Donnell (2016) states that for Indigenous communities, there is a critical importance of adopting a whole community approach due to the emphasis on cultural practices, and the importance of recognizing the uniqueness of each community. This means that colonial methods of digital problem solving must be abolished to make way for the opportunity of self-determination.

Establishing sustainable solutions to the digital divide in Indigenous communities means that self-determination must be at the forefront of digital problem solving, but the current digital landscape in Canada has too many barriers holding back the potential for new self-determined technology innovation.

In 2020, the Canadian Internet Registration Authority [CIRA] conducted a study asking stakeholders about the digital funding environment. These stakeholders included non-profit organizations, funders, academics, charities, and government officials. The conclusion made by researchers was blunt: the digital environment in Canada was underdeveloped and unorganized due to gaps in funding and underlying systemic issues. It was noted that the most important facet that must be addressed is infrastructure funding. Only 13% of the respondents indicated that it was easy to access funds. Grassroots projects that support self-determined innovation have massive barriers in place when seeking funding, and they are routinely given very little priority by telecommunications agencies. Researchers concluded that to remedy this issue, funding for digital innovation must be easier to access, it must be available, and it must not be as complicated as it is currently (CIRA, 2020). "Indigenous Peoples are often not given a seat at the table for policy making conversations, and it is widely understood that there is a lack of data that can accurately illustrate the experience of connectivity in Indigenous communities" (Internet Society, 2019, p. 6). Indigenous communities are being underserved by the oligopolistic telecommunications market in Canada, and self-determined innovations are nearly impossible due to the funding barriers. There is clear indication that the digital funding, regulatory and public policy environment in Canada needs reform.

CONCLUSION

Access to technology constitutes access to information that is essential to daily living in today's social environment. A deeply ingrained network of racial and cultural discrimination in Canada is perpetuating technology poverty. Combatting the digital divide as it exists today means tearing down current barriers to access. These barriers include: an oligopoly in telecommunications, unaffordable prices of internet and digital devices, little government intervention in the digital market, lack of public policy advocacy for Indigenous communities, lack of cultural understanding in HCI research, poverty linked to systemic racism, colonial stereotypes, colonial methods of digital problem solving and the complex, underdeveloped funding environment for independent tech companies. The digital divide has lived from the beginnings of the digital revolution, and it continues to widen. Each step we take toward technological innovation, is taken at the expense of those in the divide. If we are to consider digital access an essential service, we must treat it as a human right.

RECOMMENDED READINGS

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