Levelling Up:

Growth Strategy for BC's Creative Technology Talent Pipeline

Research by the Information and Communications Technology Council in Partnership with DigiBC

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Preface

The Information and Communications Technology Council (ICTC) is a not-for-profit, national centre of expertise for strengthening Canada's digital advantage in a global economy. Through trusted research, practical policy advice, and creative capacity-building programs, ICTC fosters globally competitive Canadian industries enabled by innovative and diverse digital talent. In partnership with an expansive network of industry leaders, academic partners, and policy makers from across Canada, ICTC has empowered a robust and inclusive digital economy for over 30 years.

DigiBC (the Interactive and Digital Media Industry Association of British Columbia) is a member-supported, non-profit organization based in Vancouver, BC. Incorporated in 2010, DigiBC represents BC's creative technology cluster, which is made up of the video games and interactive, visual effects, animation, and augmented reality/virtual reality industries. DigiBC helps to ensure that the creative technology sector grows and thrives in the province, with the goal of making BC the world's leading centre for interactive and digital media.

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Researched and written by Alexandra Cutean (Chief Research Officer), Mairead Matthews (Manager, Digital Policy), Trevor Quan (Senior Research and Policy Analyst), and Todd Legere (Economist and Research Analyst) with generous support from Rachel Kelly (Project Manager), and the ICTC Digital Think Tank Team.

Designed by Nick Routley.

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Don Black
Director, University Preparation and Community Programs, University of British Columbia

Daryl Chappell
VP, Talent, WildBrain Studios

Alan Goldman
Industry Liaison, Research, Emily Carr University of Art + Design

Michelle Grady
EVP, Sony Pictures Imageworks

Alex Grimbley
Franchise Strategy Director & Executive Producer, The Coalition (Microsoft)

Meeta Khurana
Associate Director, Engineering & Computer Science Co-op and Career Services, University of Victoria

Yossarian King
CTO, Blackbird Interactive

Shyang Kong
Co-founder, SkyBox Labs

Sarah McNair
Head of Studio Operations & HR, Disney Animation

Sarah Nathanson
COO & General Counsel, Thunderbird / Atomic Cartoons

Jennifer Nesselroad
Chair, School of Performing Arts, Capilano University

Ajay Patel
President & CEO, Vancouver Community College

Andrew Pojar
Head of Engineering, Electronic Arts

Dr. Tom Roemer
Vice-President, Academic, British Columbia Institute of Technology

Ramin Shadmehr
Dean, Faculty of Fine & Applied Arts, Capilano University

Tim Teh
CEO & Co-founder, Kano

Sarah Wall
Producer, Doberman Pictures

Jeff White
Creative Director, ILM Vancouver

Glossary of Terms

Augmented reality (AR): Interactive real-life experiences enhanced by digital elements—such as visual overlays or other sensory projections. The purpose of AR is to expand a user's understanding of, or interaction with, his or her environment.

Virtual reality (VR): Simulated experiences that can resemble—or differ completely—from the real world. Virtual reality typically takes the form of 3D simulations presented by way of a headset and motion sensors.

Mixed reality (MR): The combination of AR and VR, which allows users to see both the real world and virtual objects simultaneously.

Extended reality (XR): The umbrella term for augmented reality, virtual reality, and mixed reality. XR, AR/VR, and VR/AR are often used interchangeably.

Bootcamps: These are intensive short-term training programs to help participants upskill. They typically are completed over many weeks or years. They may be offered in person or online.

Micro-credentials: This can refer to a certification of assessed competencies that is additional, alternate, complimentary, or as part of other formal qualifications. They should incorporate industry-relevant competencies.

Visual effects (VFX): Imagery that is created, manipulated or enhanced using digital technology. This can be done for film, TV, video games, and other media. An integration between live footage and manipulated imagery, VFX workers often use computer-generated imagery to create realistic-looking environments or characters.

Work-Integrated Learning (WIL): A variety of practices designed to provide students with experiential learning throughout their studies. These often take the shape of co-ops, internships, apprenticeships, and capstone projects.

Equity, Diversity, and Inclusion (EDI): Equity refers to fair treatment of all people regardless of circumstance. Diversity refers to a demographic mix of individuals, including from equity-deserving (traditionally marginalized) groups. Inclusion refers the development of an environment where all people are welcomed and able to participate.

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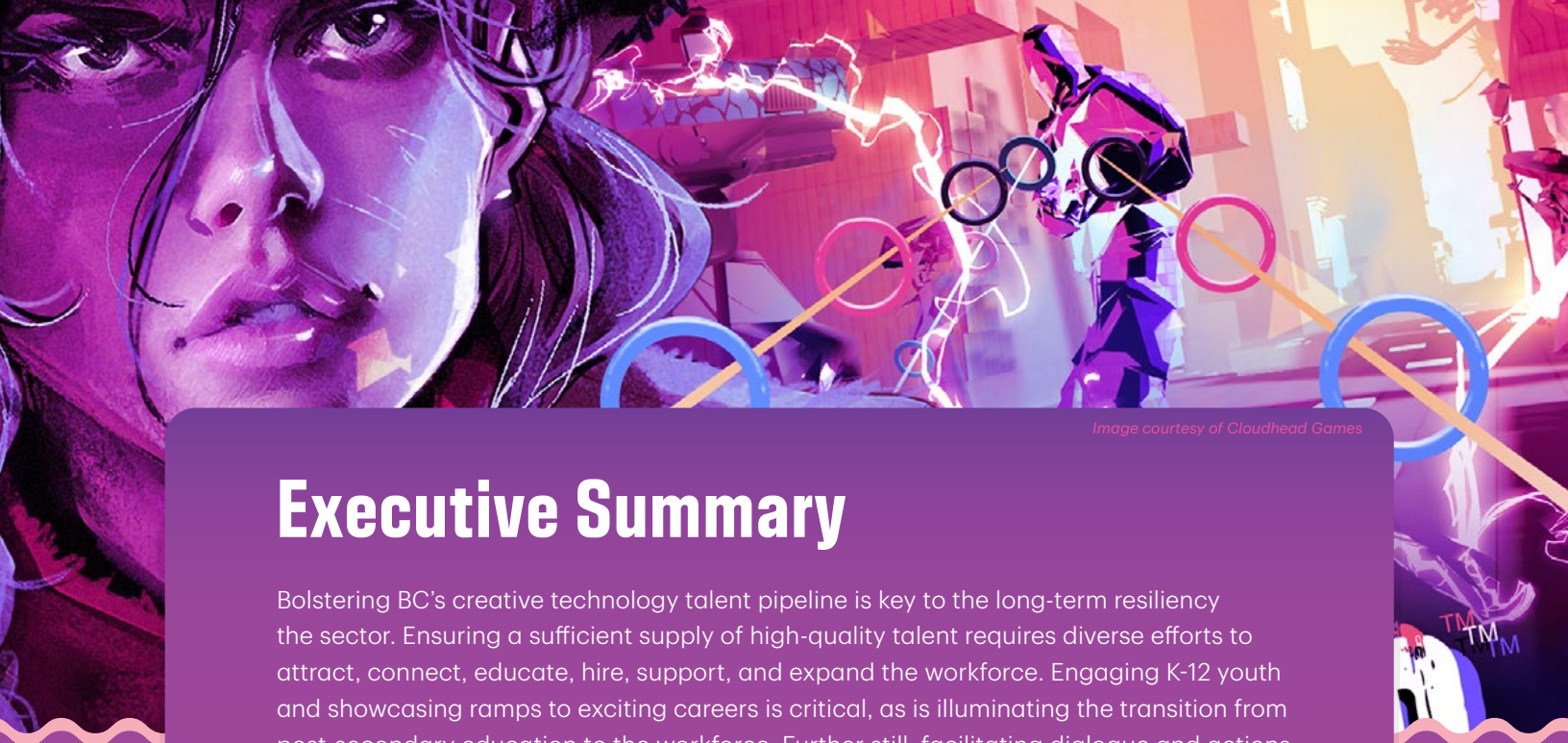


Image courtesy of Cloudhead Games

Executive Summary

Bolstering BC's creative technology talent pipeline is key to the long-term resiliency the sector. Ensuring a sufficient supply of high-quality talent requires diverse efforts to attract, connect, educate, hire, support, and expand the workforce. Engaging K-12 youth and showcasing ramps to exciting careers is critical, as is illuminating the transition from post-secondary education to the workforce. Further still, facilitating dialogue and actions to centralize equity, diversity, and inclusion is cornerstone.

This strategy describes pathways towards a robust and equitable talent pool for BC's creative technology sector. Five pillars (Connect & Attract, Educate, Hire, Support, and Expand) form the foundation of this work.

CONNECT & ATTRACT

Connecting and attracting future workers is a crucial first step on the journey. This requires boosting visibility for the creative technology sector and building early employment pathways by attracting talent from all walks of life, beginning with K-12 youth and equity-deserving groups. The following actions support this goal:

- Increasing awareness of the creative technology sector for K-12 youth via a first-of-its kind exhibition: Science World Creative Technology Gallery
- Providing hands-on and interactive creative technology experiences for young learners: Science World Creative Tech-Up Workshop
- Attracting K-12 learners and equity-deserving groups to creative technology by expanding reach, curriculum, and delivery methods of-and access to - educational programs: DigiCamps, Play To Learn, and Digital Futures

EDUCATE

Educating learners with the skills and competencies needed to succeed in creative tech careers is key. This includes strengthening the bond between industry and educators to ensure curriculum keeps pace with evolving industry needs. The following actions support this goal:

- Developing and expanding evidence-based creative tech micro-credentials in partnership with BC PSIs
- Developing a creative tech "career pathways" online hub

HIRE

Creative tech studios hire skilled workers that can help them expand and scale their businesses. Facilitating workforce connections includes supercharging the capabilities of new entrants for successful careers in creative tech. With a focus on post-secondary students, new graduates, and equity-deserving groups, enhanced work-integrated learning (WIL) opportunities (paid work placements) and streamlining hiring for employers is critical. The following actions support this goal:

- Developing a "one-stop shop" info zone for employers and students about WIL creative tech programs
- Developing a WIL Concierge service to better support employers seeking students, and pursue partnerships to secure funding for bulk WIL placements across creative tech
- Promoting existing creative tech labour market information to students and jobseekers

SUPPORT

Supporting workers as they enter and navigate the labour market includes promoting the values of lifelong learning. Access to professional development opportunities, educational resources, and mentorship can effectively steer this transition, starting with WIL students and recent graduates. The following actions support this goal:

- Providing WIL students with e-learning resources that help them further succeed
- Spearheading creative tech mentor matchmaking, piloting mentorship programs with WIL students

EXPAND

Building and continually leading the evolution of diverse, equitable, and inclusive workplaces includes expanding access to resources, and helping businesses shape policies and initiatives that drive long-term change. The following actions support this goal:

- Developing and deploying an annual creative tech EDI survey
- Developing an EDI information online hub for employers
- Using EDI survey data to track trends over time, refine strategies and identify measurable actions

This strategy tackles core considerations to boost the supply and diversity of talent for BC's creative technology sector. The initiatives outlined in this strategy are designed to be deployed over the course of 24 months. Serving as critical building blocks, these initiatives can be expanded, built upon, and augmented to suit the changing needs of the sector in a rapidly evolving digital economy.

Image courtesy of Blackbird Interactive

Background

British Columbia's creative technology sector, including video games, animation, visual effects (VFX), and extended reality (XR), is a driver of employment.

In 2020, before the onset of the COVID-19 pandemic, ICTC and DigiBC partnered on a comprehensive study called *Benchmarking the Creative Technology Ecosystem in British Columbia*, which investigated the labour market needs and realities of the province's booming creative technology sector. ICTC spoke with 49 of BC's creative technology businesses to learn about the sector's employment demand.[1] More than 90% said that in the previous three years, demand for creative technology roles had either stayed constant or increased. While some sectors saw steep drops in employment after the pandemic began, demand for creative technology roles was largely unchanged by COVID-19, and in some industries, it grew.[2]

Consistent demand for creative technology roles has resulted in fierce competition for local talent. In fact, *Benchmarking the Creative Technology Ecosystem in British Columbia* found that BC-based creative technology staff are regularly contacted by recruiters, leading some employers to "assume that everyone has another offer at all times."[3] In the same study, interviewees rated competition as the biggest barrier to sourcing creative technology talent, while high salaries were identified as the biggest barrier to retention. They noted particularly high competition for specialized artistic roles and software engineering roles, the former due to a significant talent volume shortfall, and the latter due to a combination of high salaries and strong demand across the larger economy.

Finally, participants in the *Benchmarking* study explained that competition for talent in BC's creative technology sector is further complicated by the "ramp-up" periods associated with contract-based, creative projects. For larger studios, which are disproportionately located in BC versus the other Canadian provinces, a new creative project can require filling hundreds of roles at a time. This reality leads to a talent crunch that is much more acute than that of other technology industries.

Ensuring the long-term resiliency of BC's creative technology sector requires specific and clear action to strengthen the talent pipeline; securing BC's global leadership in creative tech requires actions that weave the principles of equity, diversity, and inclusion throughout.

1 *Cutean, A., McLaughlin, R., O'Neill, K., Quan, T., "Benchmarking the Creative Technology Ecosystem in British Columbia," ICTC, Jan 2021: https://www.digitalthinktankictc.com/ictc-admin/resources/admin/creative-tech-report.pdf*
2 *Ibid.*
3 *Ibid.*

Image courtesy of Think Tank Training Centre

Introduction

BC's technology sector employs more than 195,000 people, posting an annual employment growth of 8.5%.[4] One of the leading contributors to this sector's success is creative technology. BC is the birthplace of Canadian creative tech, which over the last four decades has proved a resilient driver of high-quality employment for British Columbians. As described in *Benchmarking the Creative Technology Ecosystem in British Columbia*, despite the shutdowns and slowdowns of the pandemic, demand for creative technology remained strong, and in some industries—such as animation and video games—it was supercharged.

In 2020, just 49 creative technology studios in the province were responsible for nearly 10,000 jobs.[5] This growth continued into 2021 and 2022. For example, ICTC's eTalent data dashboards show that in Vancouver alone, just a small handful of creative tech roles—animator, environment artist, gameplay designer, pipeline TD, and technical artist—were responsible for more than 2,000 job postings in 2021, and another 2,000 from January to September 2022.

Considering this high demand, the long-term sustainability of BC-born creative tech is at risk without an adequate supply of skilled talent. Filling demand requires a multi-stage approach. This includes boosting domestic supply though expanded training options at post-secondary institutions, as well as evolving immigration policies to support work pathways for international students that choose to study in BC. Committed to addressing the workforce supply imbalance and correcting the talent crunch, DigiBC and ICTC have partnered to develop an action-oriented strategy for the province's creative technology talent pipeline.

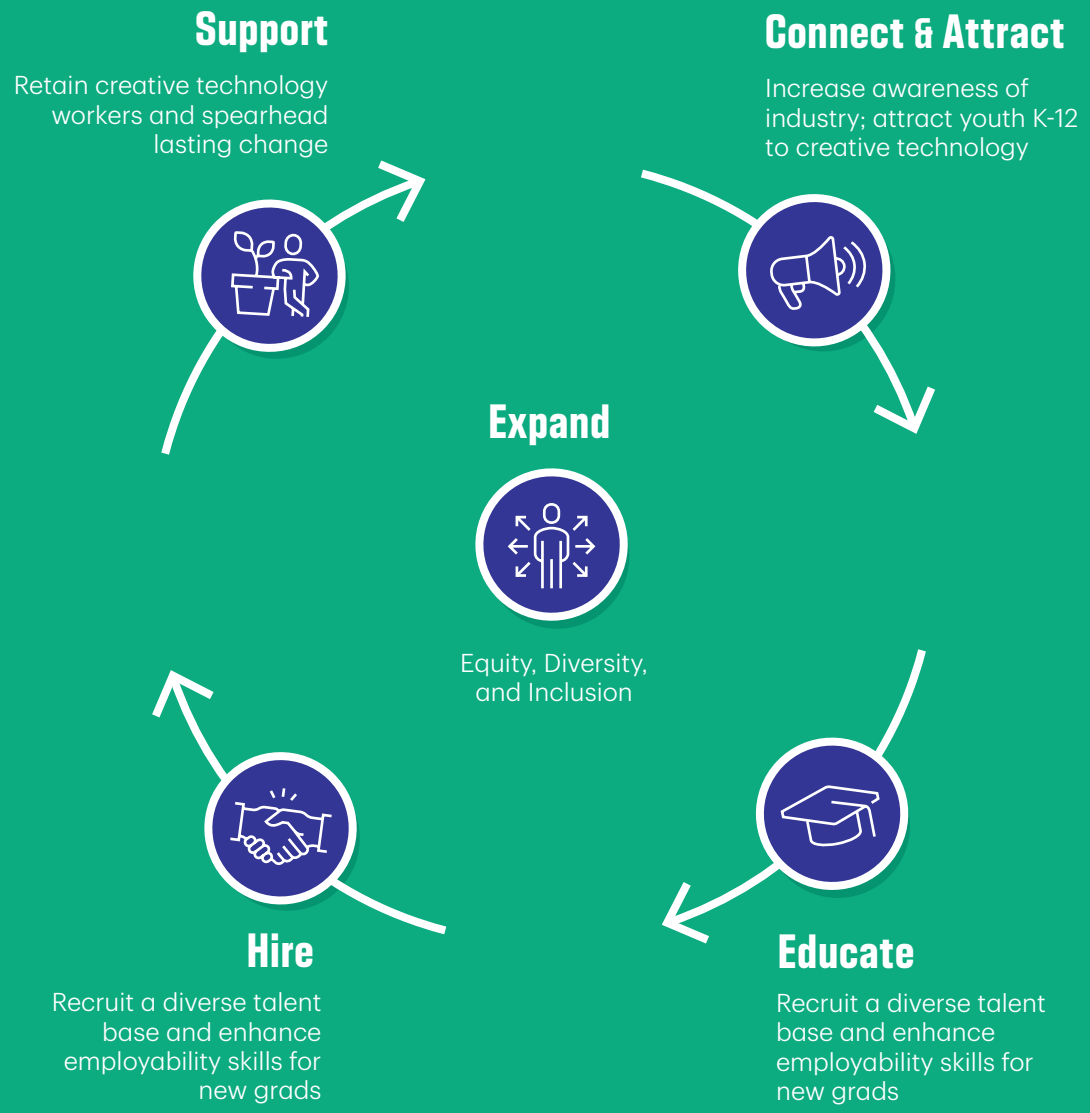
4 *"British Columbia," eTalent Canada, ICTC. Accessed September 10, 2022. https://www.etalentcanada.ca/employment-data/british-columbia/*

5 *Cutean, A., McLaughlin, R., O'Neill, K., Quan, T., "Benchmarking the Creative Technology Ecosystem in British Columbia," ICTC, Jan 2021: https://www.digitalthinktankictc.com/ictc-admin/resources/admin/creative-tech-report.pdf*

Five Areas of Focus

Growing BC's creative technology workforce requires multi-stakeholder collaboration on sector-building activities, including targeted efforts to attract new entrants, create and retain a diverse workforce, and develop and supplement needs-driven educational programming. Together, these efforts will prime BC's creative technology talent pipeline and generate momentum to ensure a critical mass of skilled new talent.

BC's creative tech talent action strategy was designed to promote economic prosperity, high-quality employment for British Columbians, and global leadership in equitable, diverse, and inclusive workplaces. It is rooted in five key interconnected areas.



This strategy describes how the creative technology industry, K-12 and post-secondary educators, government, and ancillary organizations can work together to:

- Connect and attract the next generation of creative tech talent
- Provide clear and flexible education pathways for workers to acquire industry-relevant capabilities
- Recruit and hire skilled talent
- Support and retain creative technology workers in British Columbia
- Expand equity, diversity, and inclusion

ICTC investigated other successful creative technology clusters around the world to better understand challenges, opportunities, and lessons learned for industry talent development. Additionally, ICTC conducted 33 key informant interviews with key players in the creative tech sector, both in Canada and internationally. In this report we will highlight various examples of successful initiatives seen in other jurisdictions.

Image courtesy of Boca del Lupo

4 *"British Columbia," eTalent Canada, ICTC. Accessed September 10, 2022. https://www.etalentcanada.ca/employment-data/british-columbia/*

Connect & Attract

Help new entrants discover opportunities in BC's creative technology sector.

Growing BC's talent pipeline begins by inspiring the next generation of creative technologists. By the time students are in their teenage years, many have already made academic decisions that impact the post-secondary programs they can or will apply to, and based on that, which occupations they can easily pursue. High school students who take electives like visual arts, film and television, and computer programming are building portfolios that will help them meet admissions requirements for creative tech college and university programs in the future. Engaging students *before* they make these decisions is crucial.

An important first step is conveying to K-12 learners that BC has a world-renowned creative technology sector that offers diverse and rewarding career opportunities. When an interest in creative tech is established, it spills into higher learning. By leveraging partnerships with organizations and venues that have established, well respected, and effective K-12 programs, BC's creative technology sector can showcase its accomplishments and broadly connect with students.

Expanding student exposure to creative tech presents various opportunities. In class, young learners will obtain hands-on experience while interacting with, and being inspired by, the technologies that power animation, video games, visual effects, and extended reality. This classroom tech interaction, even at a small scale, can potentially attract young people to the sector in the long run. Novel delivery methods for experiencing creative technologies could also allow students outside of the Greater Vancouver and Victoria areas to participate.

International Youth Attraction Programs: How Does BC Compare?

Other jurisdictions face similar talent shortages in their creative tech sectors and are working to better engage youth. To better understand opportunities, risks, and successes, ICTC consulted with creative technology leaders implementing similar programs in other parts of the world. Participants frequently discussed the importance of educating youth and their parents about the viability of careers in creative tech. Although many suggested that the growing popularity of the video game and screen industries has helped boost awareness of creative tech roles in recent years, more work is needed to turn connection and awareness-building into attraction. The following are examples of youth engagement and attraction programs in Singapore, Texas, Australia, and Germany.

SINGAPORE

SG Women in Tech

SG Women in Tech is a Singaporean initiative led by SG Innovate and industry partners to attract, develop, and retain women in technology roles from an early age. They engage with primary, secondary, and post-secondary students to inspire women and girls to pursue STEM courses and join Singapore's tech sector. The program engages industry leaders like Amazon and TikTok to provide testimonials about opportunities in the sector. The local connector group, SG Women in Tech, hosts public-facing events, workshops, and hackathons while facilitating internship and mentorship programs.

AUSTIN, TEXAS

Student Bootcamps

In Austin, post-secondary education groups work to bolster the creative tech sector, providing short workshops and bootcamps to public school students. These bootcamps, which can run up to two weeks long, help students gain specialized and transferable creative technology skills before they enter college. Organizers report that many students choose to continue learning about creative technology after the bootcamps and have even registered for university courses.

ADELAIDE, AUSTRALIA

Industry-Led High school Courses

In Adelaide, a local animation studio and a local high school partnered to offer animation classes to students, particularly those who have traditionally faced socio-economic barriers, including Indigenous students. To date, the animation course has been well-received by students and has seen high-attendance rates. Class attendance at this school has traditionally been poor, ranging from 20-30%, however, the animation classes had 100% attendance and course completion rates. Participation in this course also helped youth understand the value of portfolios in the animation industry.

BERLIN, GERMANY

Booster Space

Booster Space has seen great success in hosting numerous virtual and in-person events that support the ongoing advancement of the creative tech sector. Booster Space's success in managing events has been through IP development and work-for-hire events engaged in all aspects of the event management lifecycle from concept development to realization.[7] Additionally, Booster Space provides advisory services to businesses and government agencies on how to access public funding.

Although Booster Space's success is largely tied to developing attractive events for various parallels of the creative technology ecosystem, they have been broadly successful at building and engaging the creative technology network at large. Examples include:[8]

- **Dev Booster** – A pitching competition that connects indie game developers with a community of gamers, potential business partners, and investors
- **Gamescom Congress** – a conference aimed at increasing collaboration and knowledge sharing between creative artists, educators, academics, politicians, journalists, and businesses
- **EFM VR NOW Summit** – A summit connecting new entrants to the interactive digital media medium and boosting international VR development efforts
- **A MAZE. / SPACE** – a 3D multiplayer event space, a so-called immersive culture space where the visitors can interact with games, digital art, and other media
- **gamesweekberlin** – a leading cross-industry communication and networking platform for gaming business, development, and culture in Europe

As Booster Space became a central figure in developing a wide range of creative tech events, inclusive and sustainable practices have become central to their growth. *All Booster Space events adhere to a Safe Space Policy and incorporate a certain level of sustainability and localization that further builds trust with the community at large.*[9,10]

7 *"Events," Booster Space, accessed Aug 2022: https://booster-space.com/*
8 *Ibid.*
9 *"Safe Space Policy," Booster Space, accessed Aug 2022: https://booster-space.com/safe-space-policy/*
10 *"Sustainability," gamesweekberlin, accessed Aug 2022: https://www.gamesweekberlin.com/sustainability/*

Connect & Attract Objectives

- Increase awareness of the creative technology industry with K-12 youth through a wide-reaching, first-of-its kind exhibition
- Provide hands-on, interactive creative technology experiences geared to young learners
- Attract the next generation of talent to creative technology by introducing creative technology career options, beginning with K-12 youth and by prioritizing equity-deserving groups

Connect & Attract Program 1:

Science World Creative Technology Gallery

About the Program

Based in Vancouver, Science World is one of Canada's premier science centres and is well known for youth engagement and education initiatives. The charitable not-for-profit teaches learners across the province about science, technology, engineering, art and design, and math (STEM). In the 2018-2019 school year alone, the gamut of Science World programs engaged nearly 50,000 youth from more than 2,000 classrooms and 37 school districts across the province of BC.

Science World and DigiBC have partnered on the concept of a new permanent exhibit called the Creative Technology Gallery. This exhibit would provide a space to immerse visitors in a digital experience, showcasing creative technology innovations and made-in-BC creative tech productions across animation, VFX, video games, and extended reality.

Science World anticipates over 2 million in-person visitors over the three-year lifespan of the Creative Technology gallery, providing a robust opportunity to connect with and inspire K-12 students and youth. Students would have the opportunity to experience BC-based creative technology used in well-known movies, animations, and games and learn about the industry and its education pathways.

Program Objectives

- Expand student and youth reach by partnering with Science World to establish a new, permanent, interactive creative technology showcase that will reach thousands of K-12 students and teachers.[11]
- Educate Science World's 750k+ visitors per year about creative technology works produced in BC, creative tech innovation, and educational pathways
- Showcase the diverse backgrounds of people working in BC's creative technology industry

11 *In 2019, Tech-Up reached 18,554 students and 1,282 teachers; in 2020-2021, Tech-Up reached 887 teachers and 9,614 students. See: "2020-21 Annual Report," 2021, ASTC Science World Society, https://www.scienceworld.ca/wp-content/uploads/AR2020-2021_20210520_online.pdf and "2018-19 Annual Report," 2019, ASTC Science World Society https://www.scienceworld.ca/wp-content/uploads/attachments/AR2018-2019_Digital%20June%204.pdf*

Stakeholders

Establishing a new creative technology permanent gallery exhibition with Science World is a high cost, high impact, and resource-intensive project. It will require strong partnerships between industry, content creators and production teams, Science World, and sponsors over the long term.

Key participants and responsibilities are outlined below:

Entity	Responsibility
Science World	Gallery venue
	Gallery design oversight
	Gallery management
	Corporate sponsorship, marketing plan and execution
	Relationships with K-12 schools for planned visits
Industry Association	Representing industry interests during negotiations and project planning
	Liaising between Science World and industry, including establishing industry steering committee and working committees for the project
	Collating and providing industry input to project design
	Recruiting industry subject matter experts to participate in workshop delivery
	Supporting marketing efforts
	Supporting and expanding relationships with K-12 schools
Industry	Identifying participants for steering and working committees
	Providing physical and digital assets and associated required legal clearances for use in gallery
	Providing guidance to gallery design
	Supporting marketing efforts
	Providing in-kind and financial support
Sponsors	Providing program input
	Providing in-kind and financial support

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Establish agreement between industry association and Science World, outlining project timelines, mutually agreed-upon goals, budget, and deliverables	Partner to create content development plan	Launch marketing
Identify funding sources and establish cost-sharing plan	Identify industry participants to provide design input on workshop curriculum	Launch gallery showcasing interactive creative technology tools and end products
Establish industry steering committee representing companies across animation, VFX, and video games	Source case studies from creative tech talent	Secure ongoing sponsorship
Contract production company to produce gallery design and manage construction and installation	Source physical assets to complement exhibit	Identify content for a refresh every 6-12 months
	Source and acquire rights to use digital assets to complement exhibit	Source and acquire rights to use refreshed digital assets to complement the exhibit
	Train facilitators	
	Design marketing plan	

Costs and Funding

Depending on the complexity of the exhibit, a bespoke gallery could stretch to several million dollars in cost for design and construction. Funding for the initial investment is being sought from corporate sponsors, along with financial and in-kind contributions from creative technology companies. Additional sources of funding for initial costs may include government supports.

Period	Cost	Sources
Year 1	$2M Design and construction	Corporate sponsorship Creative technology industry financial and in-kind contributions Other supports
Year 2	$250K-500K Refreshed and new content	Corporate sponsorship Creative technology industry financial and in-kind contributions Other supports Ticket sales

Connect & Attract Program 2:

Science World Creative Tech-Up Workshop

About the Program

Tech-Up is a Science World program that attracts BC's K-12 youth to technology industries. It offers professional development experiences, including in-person and virtual workshops, field trips, and community kits and supports. By providing professional development opportunities to teachers, in addition to students, Tech-Up (an interactive program offering training on key areas of the technology ecosystem, like computer science, coding, computational thinking, and digital skills) helps grow the number of technology champions in BC's K-12 education system. Tech-Up is made possible by a collection of public, private, and not-for-profit funders, and a team of sponsors, mentors, and volunteers.[12] While the existing Tech-Up program tackles broad strokes of the technology ecosystem, a program focused specifically on creative technology will help attract youth to the sector from an early age. To this end, a Tech-Up program for creative technology will be co-created with Science World.

Program Objectives

- Expand student and youth reach by partnering with an existing organization and/or venue to establish a new, hands-on workshop that will reach thousands of K-12 students
- Establish a new Tech-Up program focused on creative technology, either to complement Connect & Attract Program 1 or as a stand-alone program
- Create new professional development opportunities for teachers to grow the number of creative technology champions in BC's K-12 education sector

Stakeholders

Working with Science World to establish a new Tech-Up program focused on creative technology is a medium cost project that will require partnerships between industry, educators, Science World, and government and corporate sponsors over a 24-month period.

Entity	Responsibility
Science World	Workshop design and delivery
	Venue
	Corporate sponsorship, marketing plan, and execution
	Relationships with K-12 schools
Industry Association	Representing industry interests during negotiations and project planning
	Liaising between Science World and industry, including establishing an industry steering committee and working committees for the project
	Collating and providing industry input to project design

12 *UBC Geering Up – Engineering Outreach," The University of British Columbia, accessed Aug 2022: https://geeringup.apsc.ubc.ca/about-us/general-information/sponsor-us/*

Entity	Responsibility
	Recruiting industry subject matter experts to participate in workshop delivery
	Supporting marketing efforts
	Supporting and expanding relationships with K-12 schools
Industry	Responsible for identifying participants for steering and working committees
	Providing physical and digital assets and associated required legal clearances for use in workshops
	Providing guidance to workshop objectives and design
	Supporting marketing efforts
Government	Providing input and sponsorship to program
Corporate Sponsors	Providing input and sponsorship to program

Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Establish agreement between industry association and Science World, outlining project timelines, mutually agreed goals, budget and deliverables	Partner to create content development plan	Launch workshop marketing
Identify funding sources and cost sharing plan	Identify industry participants to provide design input on workshop curriculum	Launch Tech-Up creative technology workshop with Science World, showcasing interactive creative technology tools and end-products
Establish industry steering committee representing companies across animation, VFX, and video games	Identify K-12 educators for input on workshop curriculum	
	Source diverse workshop facilitators and testimonials from working creative tech talent	
	Source physical assets to complement exhibit	
	Source and acquire rights to use digital assets to complement exhibit	
	Train facilitators	
	Test curriculum	
	Design marketing plan (Science World, DigiBC)	

Costs and Funding

The creation and delivery of a new, hands-on workshop focused on creative technology will require an investment of less than $250,000. Funding for the initial creation of the program would be provided by industry financial and in-kind contributions, corporate sponsorship, and government supports.

The program could be nearly or entirely self-sustaining after this initial investment, based on ticket sales.

Period	Cost	Sources
Year 1	$100K-500K Design and construction	Creative technology industry financial and in-kind contributions Corporate sponsorship Other supports

Connect & Attract Program 3:
Expand DigiCamps

About the Program

DigiCamps have been delivered on a small scale by DigiBC and partners for several years. These in-person classroom experiences focus on connecting equity-deserving youth groups with creative tech.

The program began with a pilot focused on attracting girls to video game development. It is delivered by DigiBC in partnership with UTG Academy and with the support of industry sponsors, IUGO Mobile Entertainment and East Side Games.[13] To date, the camps have been delivered during the summer and over spring break, introducing girls aged eight to 13 to programming. The camps are designed for novice coders with no requirement for previous coding experience. Over the course of each camp, instructors and industry guest speakers share stories about their own experiences working in the video game industry, explain what opportunities are available, and share helpful tips. By the end of the camp, kids leave with enhanced knowledge of BC's video game industry and hands-on experience developing their own games using HTML5, PixelPAD, and Python.

The success of DigiCamps is rooted in a learning program that teaches youth about opportunities in creative tech and makes the creative tech sector more welcoming to underrepresented groups. DigiCamps removes barriers to entry for underrepresented groups and demonstrates the diversity of BC's creative technology industry through its speakers. As a result, DigiCamps have proved popular and are regularly fully booked.

13 *"Creative Technology Youth Summer Camps," DigiBC, accessed Aug 2022: https://www.digibc.org/cpages/creative-technology-youth-summer-camps*

Based on this success, the DigiCamps program is ripe for expansion, both in terms of curriculum—to include other creative tech industries, such as animation and VFX—and in terms of the number of camps offered and the involvement of a greater range of youth groups. For example, a camp run in collaboration with a group like the First Nations Technology Council could help engage more Indigenous youth in the sector. A camp targeting older students, on the other hand, could help build a more advanced skill set while working toward micro-credentials or even high school credits.

Program Objectives

- Expand DigiCamps beyond the Greater Vancouver area
- Convert educational content to support blended and remote learning
- Subsidize access to program for youth from low-income households
- Partner with Indigenous-led organizations to Indigenize curriculum and operations
- Expand DigiCamps curriculum to include animation and VFX content

Stakeholders

Entity	Responsibility
Delivery Partner	Curriculum development and delivery Venue and logistics Marketing plan and execution
Industry Association	Project management Obtaining financial and in-kind sponsorship Establishing industry steering committee and working committees Recruiting industry subject matter experts to participate in camp delivery External partnerships Supporting marketing efforts
Industry	Responsible for identifying participants for steering and working committees Providing physical and digital assets and associated required legal clearances for use in DigiCamps Providing guidance to objectives and design Supporting marketing efforts

Entity	Responsibility
Government	Providing input and sponsorship to program
Corporate Sponsors	Providing input and sponsorship to program

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Establish agreement between industry association and Delivery Partner, outlining project timelines, mutually agreed goals, budget and deliverables	Partner to create expanded content development plan	Launch DigiCamps marketing
Identify funding sources and cost sharing plan	Source diverse workshop facilitators and testimonials from working creative tech talent	Deliver expanded DigiCamps curriculum
Establish industry steering committee representing companies across animation, VFX, and video games	Source physical assets to complement DigiCamps	Delivery DigiCamps in Kelowna and Victoria
Deliver existing DigiCamps	Design marketing plan (Science World, DigiBC)	Translate curriculum to permit remote delivery of camps
	Deliver additional DigiCamps	

Costs and Funding

The primary costs for expansion of DigiCamps would be incurred in the first 2 years of program development and deliver, covering the design of additional curriculum for animation and VFX topics, curriculum Indigenization, the delivery of more camps in more regions, translation of curriculum to permit remote delivery of the camps, and the staffing and marketing support required for success.

Period	Cost	Sources
Year 1	$100K-500K Delivery of existing DigiCamps Subsidies for low-income groups Identify requirements to Indigenize curriculum and operations Program staffing Marketing support	Creative technology industry financial and in-kind contributions Corporate sponsorship Other supports
Year 2	$100K-500K Delivery of existing and additional camps Additional subsidies for low-income and underrepresented groups Partner for curriculum Indigenization Development of expanded content Translation of curriculum and delivery method to permit remote participation Program staffing Marketing support	Creative technology industry financial and in-kind contributions Corporate sponsorship Other supports

To date, DigiCamps have been dependent on industry sponsorship. Continued sponsorship in the immediate and medium term will enable continued subsidies for underrepresented and equity-deserving groups.

In the long term, the ability to offer DigiCamps remotely to a much larger group of students should create an opportunity for the camps to become self-sustaining through enrolment and tuition revenue.

Connect & Attract Program 4:
Expand Play to Learn

Play to Learn is a DigiBC-led, industry supported initiative that helps students develop STEM literacy and explore STEM careers at an early age. It has engaged over 2,319 students from 78 schools across the province and has delivered over 3,624 hours of programming.[14] Play to Learn helps attract youth to STEM careers by building early STEM skills and helping youth see themselves working in these fields. Play to Learn invites participants to reconsider who is "suited" for a career in STEM.

Play to Learn began with the development of a creative technology unit, sponsored by Electronic Arts in 2017. It has been funded largely by the creative technology industry and government supports since then. This online and in-person classroom experience invites students to learn about career paths in video game design and development.

14 *"DigiBC Impact Report: Play to Learn: 2021-2022 School Year," EverFi.*

Impact assessments of the program show positive outcomes. According to participant feedback, after engaging in Play to Learn, students become more interested in taking classes related to STEM, including statistics, the scientific method, the engineering design process, and algorithms.[15] Play to Learn is also viewed positively by participating teachers: 94% of teachers who participated in Play to Learn during the 2021-2022 school year felt that students were engaged in the content, and 100% of surveyed teachers rated the quality of Play to Learn content as "good" or "very good."[16] Mobilizing Play to Learn to reach a larger group of youth will continue to illuminate STEM career pathways for students.

Educator Rankings

Program Objectives

- Expand access to Play to Learn for underrepresented groups in BC
- Expand Play to Learn curriculum to include animation and VFX content
- Expand Play to Learn delivery across all elementary and middle schools in BC

Stakeholders

Expanding the Play to Learn program's curriculum and footprint will require partnerships between and support from industry, educators, and government sponsors over a 24-month period.

Key participants and responsibilities outlined below:

Entity	Responsibility
Delivery Partner	Curriculum development and delivery platform
	Teacher training and support
	Logistics

15 *Ibid.*
16 *Ibid.*

Entity	Responsibility
Industry Association	Obtaining financial and in-kind sponsorship Establishing industry steering committee and working committees Recruiting industry subject matter experts to participate in curriculum development
Industry	Responsible for identifying participants for steering and working committees Providing physical and digital assets and associated required legal clearances for use in program Providing guidance to curriculum design and development
Government	Providing input and sponsorship to program

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Extend agreement with Delivery Partner, outlining project timelines, mutually agreed goals, budget, and deliverables Identify funding sources and cost sharing plan Establish industry steering committee representing companies across animation, VFX, and video games Deliver existing Play to Learn modules	Expand access to Play to Learn for underrepresented groups in BC Source diverse workshop facilitators and testimonials from working creative tech talent Deliver existing Play to Learn across all BC elementary schools	Develop module for animation and VFX Deliver expanded Play to Learn curriculum across all BC elementary and middle schools

Costs and Funding

The primary costs for expansion of Play to Learn are the development of an additional module, covering animation and VFX, and the expanded delivery of the program across all BC elementary schools.

Period	Cost	Sources
Year 1	$100K-500K Delivery of existing Play to Learn program Program support staffing	Creative technology industry financial and in-kind contributions Government supports
Year 2	$500K-700K Develop additional animation/VFX module Delivery Play to Learn to expanded number of schools Program support staffing	Creative technology industry financial and in-kind contributions Government supports

Play to Learn is dependent on industry sponsorship and government supports.

Connect & Attract Program 5:
UBC Digital Futures

Digital Futures is being developed by the University of British Columbia, in partnership with DigiBC and the Centre for Digital Media, to provide local and international high school students with the opportunity to participate in intensive, on-campus, educational programming. This programming is intended to familiarize students with emerging technologies and creative tech, help them gain leadership and technical skills, and help them identify educational pathways for future careers in tech. Six two-week courses in emerging technologies and creative tech will be piloted in Summer 2023 at the UBC Vancouver and Centre for Digital Media campuses as part of the UBC Future Global Leaders program.

Although this project is still in the early stages of its development, it demonstrates that UBC and the creative technology industry share a common goal of growing BC's skilled workforce by helping to familiarize youth with emerging technologies and the use of emerging technologies in fields such as video game development and VFX.

Having the creative tech industry participate in Digital Futures would expose high school students to creative technology careers and educational pathways, and help post-secondary institutions forge new connections with local youth.

Program Objectives

- Increased awareness of creative technology careers and educational pathways among high school students
- Additional points of connection between post-secondary institutions and local youth.

Stakeholders

Participating in the Digital Futures program will require partnerships between and support from the creative technology industry and UBC program organizers over a 12-month period.

Entity	Responsibility
UBC	Program development and delivery Program management and logistics
Industry	Responsible for identifying participants for working committees Providing physical and digital assets and associated required legal clearances for use in program Providing guidance to curriculum design and development

Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Develop agreement between UBC and industry, outlining project timelines, goals, and deliverables Establish industry working group from companies across animation, VFX, and video games	Develop creative technology content for program Source diverse workshop facilitators and testimonials from the creative tech talent pool	Deliver Digital Futures

Funding Sources

Digital Futures is funded by UBC and is dependent on student tuition fees.

Image courtesy of Centre for Digital Media

Educate

Help students and new employees build the groundwork for a successful career in creative tech.

Attracting talent to the creative technology sector requires expanded and new pathways to education and skill development. Developing top talent in BC depends on strong relationships between the creative technology industry and the ecosystem of post-secondary institutions (PSIs) throughout the province. By participating in meaningful consultation, PSIs and companies across the animation, VFX, and video game sector can ensure that educational programs are in sync with evolving industry needs.

In BC, many ongoing efforts supplement and boost creative technology education. These include efforts by degree-granting institutions like Capilano University, University of Victoria, Emily Carr University, University of British Columbia, and Simon Fraser University, in addition to colleges, private training institutions, and polytechnics.

Beyond the educational programs offered by each of these institutions, there are also new micro-credential programs, ongoing updates to curricula, co-ops and other forms of experiential learning, and job placements following graduation.

Each of these programs can benefit from strong collaboration and communication with industry.

Educate Program 1:

Expand Micro-Credential Programs

About the Program

In 2022, six institutions partnered with the creative technology industry to create new micro-credential programs designed to meet the needs of animation, VFX, and video game companies. This first-of-its-kind collaboration between industry and academia provided industry representatives with the opportunity to participate in program design, development and, in some cases, delivery. In some cases, creative technology workers also helped instruct courses or appeared as guest lecturers.

When properly developed and validated by industry, micro-credentials can offer learners a quick path to employment. Micro-credentials help leaners gain the skills and competencies required by industry and, in many cases, supplement existing education. Micro-credentials are diverse. Some help learners acquire and showcase specific skills, such as design or 3D development skills, while others, such as the Vancouver Community College's Production for Animation credential, help individuals prepare for specific roles.

Expanding the selection and delivery methods of creative technology micro-credentials that are offered in BC will provide flexible learning opportunities to more individuals, whether they are creative technology students, workers transitioning from another industry, or lifelong learners. The development of new micro-credentials will help learners enhance their skills and jumpstart a career in creative technology while strengthening collaboration and communication between industry and educators in the province.

Program Objectives

- Strengthen relationship between industry and PSIs across the province
- Develop evidence-based creative tech micro-credentials in partnership with BC PSIs
- Expand learning methods to include practical application (e.g., capstone, co-ops, upskilling)

Stakeholders

Entity	Responsibility
PSIs	Program development, marketing, and delivery Program management and logistics, including sourcing instructors

Entity	Responsibility
Industry	Guidance and input to curriculum design and development Providing digital assets and associated legal clearances for use in program Providing guest lecturers, testimonials, and recommending instructors
Government	Financial and other supports for new programming

Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Source relevant post-secondary partners	Develop micro-credential curriculum	Deliver program
Source up-to-date labour market intelligence (LMI) to understand evolving industry needs	Develop marketing plan	Measure immediate impacts of training on employment (for learners)
Source key industry leaders to offer review and validation of curriculum	Market new programs	Measure immediate impacts of training on business operations (for employers)
	Develop an assessment framework to measure value to learners	Ongoing industry consultation with PSIs on existing and emerging programs
	Develop an assessment framework to measure value to employers	Ongoing general advocacy and information sharing, and consultation with government to provide support for development and expansion of future programs

Costs and Funding Sources

The 2022 micro-credential program received government support with the anticipation that future program delivery would become self-sustaining through tuition revenue. New micro-credential programs will be dependent on additional government supports and in-kind contributions from industry until marketing efforts have been honed to attract enough students to become self-funded.

Educate Program 2:

Career Pathways Online Hub

About the Program

Jobs in the creative technology sector generally fall into one of five categories: digital, creative, design, production, and operations. While some workers transition between these categories throughout their careers, specific career paths tend to have a similar set of roles, functions, and education and skills requirements.

BC's mature network of creative technology educational programs offers world-class training for prospective students. However, charting a learning path that leverages the full gamut of available options (e.g., micro-credentials, upskilling programs, multi-year certificates, traditional diplomas, and degrees) can be daunting.

A centralized repository or online hub would help address this challenge by providing learners with a clear, objective way to assess their options and design a learning path that meets their unique objectives and needs. The hub would describe the types of roles that are available across the creative technology sector, the specialized and transferable skills required to succeed in these roles, and the learning pathways and programs that can help learners obtain these skills.

Program Objectives

- Develop a creative technology "career pathways" Hub providing learners with a description of career pathways and the educational programs that can help them acquire the skills needed to succeed in creative tech

Stakeholders

Entity	Responsibility
Industry Association	Project management Design oversight Population and maintenance of hub
Industry	Project input and guidance
PSIs	Project input and guidance Provision and review of course information
Web Developer	Design and development of hub
Government	Provide and support career pathway back-end and microservices (e.g., Education Planner BC, digital badging, etc.)

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Identify web developer	Aggregate existing programs and resources relevant to creative tech in BC	Roll out hub
Design online hub	Develop, populate, and test online hub	Work with government and local PSIs to develop and maintain hub
Aggregate and collate updated LMI on industry needs / in-demand jobs	Develop marketing plan for hub	
Create PSI and industry working group		
Review existing career pathway hubs in BC		
Identify partnerships for development and location for creative tech career pathway hub		

Costs and Funding Sources

Period	Cost	Sources
Year 1	<$250K Development of hub Project support staffing Pilot integration with Education Planner BC	Creative technology industry financial and in-kind contributions Organization partners Government supports
Year 2	$100K-500K Testing and roll out Support for ongoing updates Full integration with Education Planner BC	Creative technology industry financial and in-kind contributions Organization partners Government supports

Initial set-up of the hub will require an investment that could be funded by industry contributions and/or a partnership with another creative technology adjacent association. To maintain objectivity, on-site advertisements from PSIs would not be appropriate, however, wider corporate sponsorship and advertisements could be an option to support ongoing maintenance of the hub.

Information on top occupations, skill needs, and skill development pathway is key to attracting, retaining, and educating new talent for in-demand creative tech roles. The table below provides some examples of the types of roles across creative technology in addition to their functions, specialized and transferable skills needs, and educational requirements.

Digital Roles	Function	Specialized Skills	Transferable Skills	Learning Pathways
Software Developer Software Engineer Programmer Game Developer Graphics Developer Pipeline Technical Director	Helps develop the technical components of the project, including databases, APIs, and other components related to software, data, and artificial intelligence.	General programming languages and software tools, such as C++, Java, iOS, SQL, HTML5, CSS, JIRA, Linux, Tableau, Python, Git, MongoDB, or Azure Software and tools related to video games and VFX, such as Unity 3D, Unreal Engine 4, 3D Studio Max, Blender, Mari, Eclipse, Katana, and Motionbuilder Data analytics software and tools	Teamwork and collaboration Ability to communicate and work with interdisciplinary teams Troubleshooting and problem solving Attention to detail Process and workflow management Ability to apply best practices Curiosity Creativity	College or university diploma or degree in Computer Science, Computer Engineering, or Software Engineering Micro-credentials, bootcamp, or massive open online course in programming Independent, self-directed learning

Creative Roles	Function	Specialized Skills	Transferable Skills	Learning Pathways
Technical Artist Storyboard Artist Modeller Animator FX Artist Concept Artist	Helps generate initial concepts and designs. Leads illustration, rendering, and animation.	Lighting Visual Effects 3D Modelling Digital sculpturing Texturing Programming languages Productivity tools 3D Design, VFX, illustration, and animation software (e.g., Unity 3D, Maya, ZBrush)	Adaptability and flexibility Teamwork and collaboration Analysis and critical thinking Self-motivation and emotional regulation Planning, organization, and time management Communication Conflict Resolution Artistic Ability	College or university diplomas (e.g., Game Art and Design, VFX) Certificates (in video game development, editing, or animation) Highschool-level courses, co-ops, or extracurriculars Micro-credentials for specialized skills or software tools Independent, self-directed learning

Image courtesy of Electronic Arts

Design Roles	Function	Specialized Skills	Transferable Skills	Learning Pathways
User Experience Designer User Interface Designer Campaign Designer Level Designer	Helps deliver end-user-facing elements of the project, such as how users interact with or navigate video games, how systems are designed and used, or gameplay or narrative design	User experience research and design Analytical tools and software Wireframing and prototyping Gameplay mechanics, game design, and game design thinking 2D and 3D visual design software, such as Photoshop, Illustrator, After Effects, Unreal Editor, Zbrush, Premiere, or Maya May Require Knowledge of C#, Git, SQL, Tableau, .NET, or Java	Interpersonal skills, empathy, and emotional intelligence Curiosity Client engagement and management Teamwork and collaboration Communication Creativity Attention to detail	College or University Diploma in User Experience or User Interface Design Certificate in User Experience or User Interface Design Micro-credentials or bootcamp in user experience or user interface design Independent, self-directed learning

Production Roles	Function	Specialized Skills	Transferable Skills	Learning Pathways
Technical Art Director Motion Capture Director Development Director Layout Supervisor and Producer	Helps bring together different components of the project through planning and coordination. Conceptualizes ideas and assembles the project team. Provides leadership, management, and oversight.	Project management software (e.g., Wrike, Asana, MS Project) Programming languages Other software programs, including Maya, Python, Unity 3D, JIRA, Java, .Net, CSS, DirectX, Unreal Engine 3, and Photoshop	Planning, organization, and time management Adaptability and flexibility Problem solving Conflict resolution Teamwork and collaboration Communication Project management People management Hiring and training	College or university diploma in a specialized field, such as film and TV production, motion capture performance, technical art, or 3D animation and VFX Project management or management training Micro-credentials for production roles Comprehensive work experience leading to senior level positions

Hire

Secure talent to drive growth in BC creative tech.

Ensuring that BC not only attracts and educates top creative tech talent but retains workers throughout their careers begins with a smooth transition from education to the work world. This includes both bolstering the domestic workforce, and securing and emboldening employment pathways for international students that choose to study at world-class BC-based institutions. To accomplish this, students need a clear understanding of the opportunities available across the industry and within individual studios, and the opportunity to connect with potential employers in a meaningful way. Conversely, employers must cultivate strong relationships with PSIs and jobseekers so they can market their studio's culture and opportunities.

Hire Program 1:

WIL Supports for Creative Technology

About the Program

Work integrated learning (WIL) programs help students transition from school to the work world by incorporating paid work placements into their academic programs. Paid work placements provide students with the opportunity to apply what they learned in their academic courses in an industry context and, at the same time, experience different work environments and cultures.

WIL is a widely recognized practice with numerous benefits for both students and employers. However, despite the many benefits of WIL, some companies—and particularly SMEs—struggle to take advantage of WIL programs due to lack of resources and other common barriers. Some employers find it difficult to find students, secure funding, and/or satisfy mandatory requirements around training, administration, and reporting without dedicated staff. A WIL "online hub," "concierge," and dedicated funding would help SMEs take advantage of WIL programs by reducing information and funding barriers.

WIL Online Hub

Both employers and students would benefit from a centralized "one-stop shop" for fulsome information about the range of WIL programs offered through PSIs and other organizations in BC. For students, the online hub would provide a bird's-eye view of programs that offer practical work experiences as part of their curriculum. For employers, the hub would provide an accessible catalogue of WIL programs, including relevant details about each program, such as the application process, funding amounts, term length, and reporting requirements.

WIL Concierge

DigiBC would hire a full-time WIL concierge to build relationships with the administrators of BC's various WIL programs and maintain up-to-date information about WIL opportunities in BC. Through its network of WIL program administrators, PSIs, recruiting professionals, and SMEs, the WIL concierge would form the "missing link" that exists between many WIL programs and SMEs. This centralized resource would provide support to all creative tech companies in BC that are currently working with, or want to work with, WIL students—assisting them with their applications and reporting processes, helping them recruit and interview candidates, and answering frequently asked questions about WIL.

WIL Blanket Funding

Leveraging existing programs and sources of funding to support WIL in the creative technology sector is key. Where possible, industry associations and other partners could pursue blanket funding for WIL placements across a number of creative technology companies, which would particularly benefit small and medium-sized companies that often lack dedicated resources to engage in the process. With this type of blanket funding in place, the WIL Concierge role could function as an administrator of paid work placements at creative technology companies.

Work Integrated Learning Programs and Creative Tech

In BC, creative technology companies can take advantage of numerous WIL programs that provide wage subsidies to hire students. For instance, numerous wage subsidies are provided to companies through Employment and Social Development Canada's (ESDC) Student Work Placement Program (SWPP). Core delivery partners offering wage subsidies for employers that engage students in technology fields are the following:

- ICTC's WIL Digital Program
- Magnet's Student Work Placement Program
- TECHNATION's Career Ready Program
- CMPA's Student Work Placement Program
- Venture for Canada's Internship Program

Note: although companies cannot apply for funding from multiple SWPP-funded programs at the same time (e.g., from ICTC's and Magnet's program at the same time), companies that have applied and received funding from one program are still eligible to receive funding from the same or another program in a future term.

Other wage subsidy-based programs available for creative technology companies include:

- WEX Program
- Innovation BC's Innovator Skills Initiative
- Canada Summer Jobs
- Province of BC's Youth Employment Program
- Mitacs programs for students: Accelerate, Business Strategy Internship
- BC Tech's Digital Lift Tech Internships
- ICTC's Youth Dividend Program (for new graduates only)

Program Objectives

- Develop WIL program hub for students and employers, providing a one-stop information centre with all relevant WIL programs offered for students in BC, along with program contacts and funding information and full program application and reporting information for employers
- Create a WIL concierge role for creative technology employers—a human resource to facilitate relationships between SMEs, students, and PSIs, answer questions, assist with applications and reporting processes
- Source WIL funding for employers under an umbrella application for the sector if/where available

Stakeholders

Entity	Responsibility
Industry Association	Recruit and hire WIL concierge Project manage online hub Maintain hub with up-to-date information and new programs Prepare umbrella applications for WIL programs where applicable
PSIs	Provide up-to-date information and relevant contacts for WIL programs Work directly with WIL concierge to facilitate applications and placements Provide feedback to improve process
Industry	Work directly with WIL concierge and PSI programs to hire WIL students

Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Design online WIL hub	Develop, populate, and test online hub	Roll out WIL hub
Define WIL concierge role	Develop marketing plan for online hub	Deliver additional 50 WIL placements in 18-24 months
Hire WIL concierge	Match employers with WIL students	Collect and analyze post-placement data
Apply for bulk WIL placement funding for the sector	Support employers throughout WIL placements	Develop new sources of funding for WIL programs (Mitacs, ESDC)
Aggregate WIL information and resources for employers	Deliver 50 WIL placements in 6-18 months	
Aggregate relevant creative tech LMI and WIL program information for students		
Establish relationships with all PSI WIL program teams		

Costs and Funding

Period	Cost	Sources
Year 1	$100K-500K WIL Concierge employee WIL Online hub development Marketing support Project support staffing	Industry financial and in-kind support Government and other supports
Year 2	$100K-500K WIL Concierge employee WIL Online hub maintenance Marketing support Project support staffing Secure e-learning resources Develop catalogue of e-learning resources	Industry financial and in-kind support Government and other supports Fee structure

Establishing an online hub and hiring a full-time resource dedicated to WIL would require an initial investment by the industry organization, possibly with government and/or PSI support. In subsequent years, funding for the WIL hub and concierge could be sourced either directly from industry, or, once the program has become established enough and received enough uptake, from administrative fees charged to participating companies.

Work Integrated Learning Experiences

ICTC and DigiBC conducted two parallel surveys to assess work integrated learning in BC's creative technology sector. One survey engaged representatives from post-secondary institutions with creative tech programs in BC, while the other engaged creative tech employers who have participated in WIL.

Key Findings: PSI WIL Survey

Representatives from 10 of BC's post-secondary institutions responded to ICTC and DigiBC's WIL survey.

Respondents from nine of the 10 PSIs felt that their WIL and/or co-op placements help them attract more applicants to their creative technology programs. Additionally, respondents from six of the 10 PSIs felt that compared to five years ago, creative technology students are more inclined to pursue WIL opportunities.

Respondents from eight of the 10 PSIs indicated that since March 2020, more than 50% of their WIL and/or co-op placements have taken place in a hybrid or remote work setting. Notably, six of 10 ten PSIs felt that the quality of WIL placements has decreased since the transition to remote work. When asked why they thought the quality of WIL placements has decreased since the transition to remote work, respondents indicated that:

- Employers need training on how to hire, onboard, and manage remote WIL students more effectively
- Remote WIL and/or co-op placements provide students with less exposure to work cultures and less opportunities to develop soft skills
- Some students experience challenges with remote WIL placements because they don't have the right technology for their remote placements
- Some small to medium sized enterprises lack the funds and/or capabilities to onboard students remotely
- Respondents felt that when it comes to participating in WIL programs, the biggest pain points for employers are:
- The amount of time required from companies to take part in WIL
- The cost of student wages (particularly for SMEs)
- Having to adapt their hiring plans to the university's calendar

Alternatively, respondents felt that the biggest pain points for students are:

- A perceived gap between their program's academic requirements and their work placement's skills requirements
- Low compensation for their time (students have not yet completed their studies and therefore receive a "less-than-entry-level" salary)
- A lack of mentorship opportunities
- Potentially being taken advantage of by employers

Respondents felt that businesses could do more to improve WIL programs and the school-to-work transition for students, such as being involved in mentorship programs and more actively communicating their needs to PSIs. For their part, respondents felt that PSIs could centralize WIL and/or co-op administration by creating a centralized office to handle most WIL placements (they felt this would enable them to be more reactive to industry needs, provide better admin support, etc.) and be more flexible with program administration (such as letting employers hire students part-way through a term).

Overall, respondents felt that computer science and software engineering students were easiest to find placements for because their programs are applicable to many different aspects of creative tech. Conversely, the respondents felt that visual arts and English second language students are the most difficult to find placements for.

Key Findings: WIL employer survey

Nineteen creative technology employers responded to ICTC and DigiBC's employer survey. Of these:

- nine were video game companies, five were animation companies, three were VFX companies, and two were companies that work in both VFX and animation
- 10 had more than 250 employees, two had 100 to 250 employees, one had 51 to 100 employees, four had 26 to 50 employees, and two had zero to 10 employees.

When asked if they currently hire co-op or intern students, 16 of the companies said "yes." Respondents were also asked how many students they hire per year: 14 respondents answered this question, and of these, seven indicated that they hire one to four students per year, three indicated that they hire five to eight students per year, two indicated that they hire nine to 12 students per year, and two indicated that they hire 17 to 20 students per year. Nearly all of the respondents (13 out of 14) indicated that were very interested in hiring more students in the future.

Respondents were asked which PSIs they most often source students from. With respect to universities, respondents most frequently mentioned Simon Fraser University, the University of British Columbia, and Capilano University. With respect to colleges, respondents most frequently mentioned the British Columbia Institute of Technology and Langara College. Finally, with respect to private institutions, respondents most frequently mentioned Vancouver Film School, Lasalle College, and Lost Boy Studios.

In terms of program, students were more frequently sourced from computer science or specialized animation programs than specialized VFX or game development programs.

When asked what types of skills they hire students for, respondents indicated technical skills related to software, programming, animation, and VFX.

Respondents were also asked what they perceive as the greatest barriers or pain points to hiring students. According to respondents, the greatest barriers are:

- A lack of internal resources to train, supervise, and support students
- The reality that hiring students can put a strain on the production timeline
- The difficulty of finding students with sufficient technical skills (e.g., C++, Unreal Engine, Unity, and Maya)

In general, a lack of internal capacity was perceived the largest barrier to hiring more WIL students. When asked what additional resources would help create the ideal training/work arrangement, respondents indicated more entry-level job training while in university and more support coordinating and administering WIL placements.

Respondents were also asked whether they would be interested in exploring new types of WIL placements, such as longer-term placements or other novel work arrangements, and what types of arrangements they would be most interested in.

Employers did express interest in exploring such arrangements in the future so long as the necessary supports were provided. In terms of specific types of arrangements, respondents most frequently selected:

- Longer-term work arrangements (e.g., five to eight months, year-long placements) and multi-year apprenticeships
- Mentorship programs (e.g., pairing students with industry coaches)
- Part-time coursework that is relevant to their company and offered to students through placements

According to respondents, the ideal training/work arrangement would include more technical training (provided by schools in a classroom setting), followed by on-site, in-person training (provided by companies), and complemented longer placements.

Hire Program 2:
Labour Market Information for Students

About the Program

Labour market information (LMI) is a valuable resource for students. LMI helps students understand which roles are in demand in different areas of the economy, such as creative tech, and provides students with a "big picture" understanding of how different roles and skill sets evolve over time. Several existing resources can help students gain access to valuable LMI and help them plan their future careers:

- The Labour Market Information Council maintains free-to-access dashboards that summarize Canadian and provincial job trends and earning trends for trade certificate holders and post-secondary graduates.
- ICTC maintains free-to-access dashboards that provide labour market information for Canada's digital economy. These dashboards summarize job counts, in-demand skills, and average wages for over 65 roles in the digital economy, including 10 creative technology roles. Labour market information is provided for 10 provinces and 22 Canadian cities, including Vancouver and Victoria.
- WorkBC and Creative BC provide information about various employment pathways, including in creative technology
- ICTC offers a free-to-access web-based skills matching tool. The tool enables jobseekers to take stock of their existing skills, identify relevant career paths based on these skills, and highlight skills gaps. After self-selecting their existing skill sets, users are mapped to numerous in-demand jobs across the digital economy, provided a "fit score" for each of the jobs, and directed to short-duration, industry-validated courses that can help them close their identified skill gaps

Program Objectives

- Promote existing LMI to students and jobseekers
- Leverage development of an online hub to secure and promote LMI
- Promote LMI through ancillary channels

Stakeholders

All players in the creative technology ecosystem could promote and share labour market information at a centralized location.

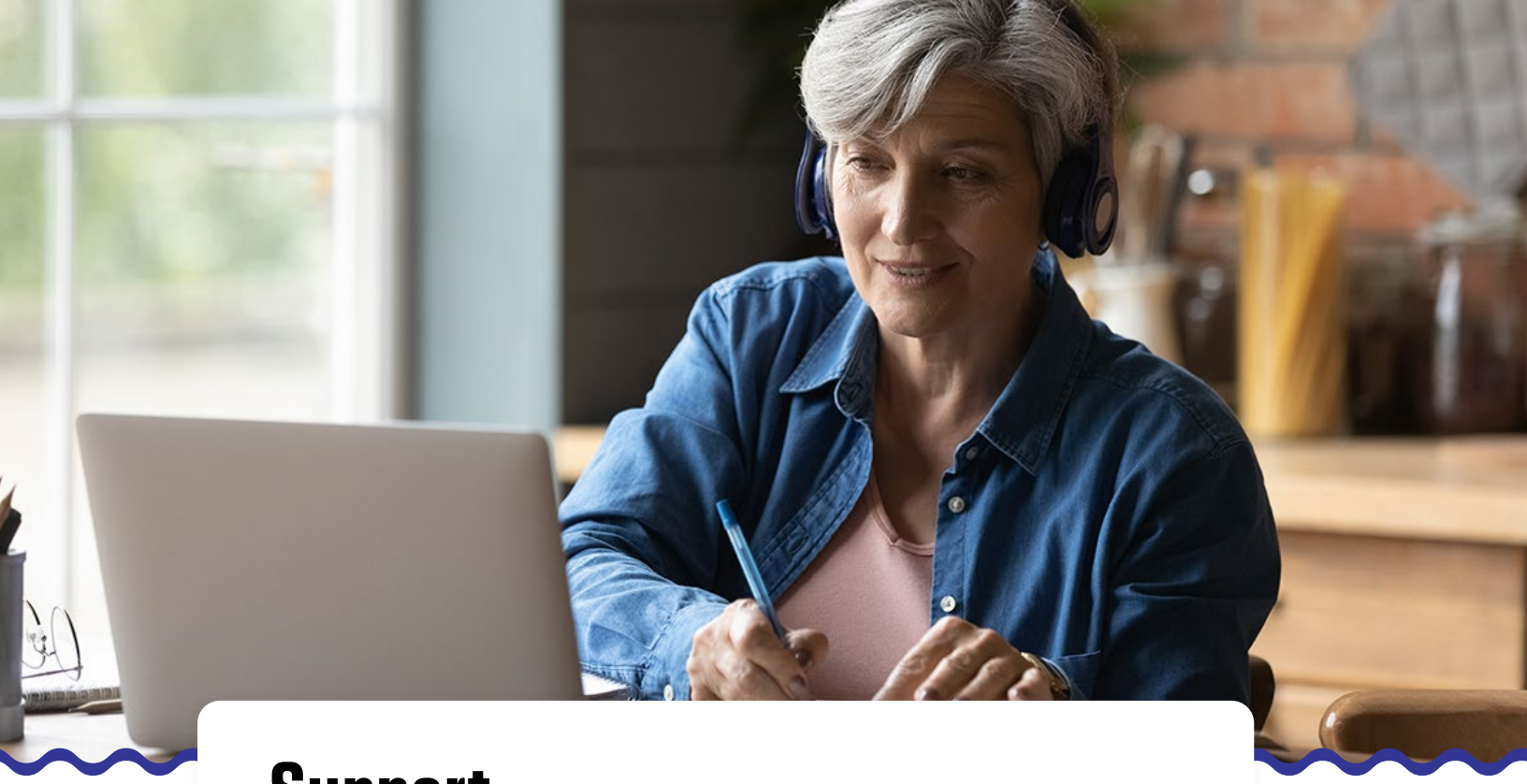
Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Aggregate relevant LMI, dashboards, and other resources for students and jobseekers at a centralized location Promote LMI to students and jobseekers through existing channels	Continue to promote LMI to students and jobseekers through existing channels Search for new channels to promote LMI Make LMI available through the online hub	Maintain LMI resources and keep online hub up to date with newly available LMI tools Continue to search for new channels to promote LMI Continue to promote LMI to students and jobseekers

Costs and Funding

The Hire Program 2 objectives can be largely accomplished using existing channels (DigiBC website, partner organization websites, PSIs) and resources (existing LMI resources).

Period	**Cost**	**Sources**
Year 1	<$100K BC creative tech data dashboard (five cities, 20 jobs) Marketing support	Industry financial and in-kind support Government and other supports
Year 2	<$100K BC creative tech data dashboard maintenance Updates to dashboard (10 cites, 35 jobs) Marketing support	Industry financial and in-kind support Government and other supports



Support

Promote lifelong learning through access to professional development and educational resources and mentorship, starting with post-secondary students.

Once creative technology talent is hired and engaged in the sector, ongoing supports, including professional development, mentorship, and other services can help drive employee retention.

Support Program 1:
Online Learning Resources

About the Program

E-learning courses and other lifelong learning tools can help employees learn new competencies and skills long after post-secondary graduation. For students, e-learning courses are a useful way to supplement formal academic curricula, develop industry-ready skills, and more smoothly transition from education to the work world.

Several of the WIL delivery partners highlighted in Hire Program 1 provide e-learning courses to students at no extra cost. E-learning courses can help improve the experience of participating students and enhance their employability upon graduation. ICTC's WIL Digital, for example, gives students access to free online courses developed in partnership with PSIs, industry leaders, and subject matter experts. The courses cover topics relevant to the students' work, including accessibility in tech, big data, cybersecurity, artificial intelligence, cloud computing, blockchain, fintech, ecommerce, and service design. In the future, there are plans to create additional courses on subjects such as digital transformation and creative tech.

Developing e-learning courses or making existing courses available to WIL students would augment students' WIL experiences and increase their employability upon graduation. Additionally, e-learning courses would help reduce in-house training needs that employers find hard to meet. Existing courses would be aggregated and delivered online using a self-paced training model and would prioritize skills highlighted by the industry as in-demand (for example, remote work etiquette, communication, and collaboration).

Program Objectives

- Develop new e-learning courses for WIL students or make existing e-learning courses available to WIL students
- Ensure the availability of e-learning courses that are specific to the creative technology sector

Stakeholders

Entity	Responsibility
Industry Association	Assess existing e-learning courses and other e-learning resources, and shortlist resources for pilot program Determine whether any new courses need to be created Work with partner organizations to secure access to existing e-learning courses, develop a secure portal for students to access resources, and monitor course delivery Work with industry and partner organizations to obtain feedback
Parner Organizations **(including PSIs)**	Partner with industry association to help industry organization secure access to existing e-learning courses Partner with industry association to develop secure portal for students to access resources Partner with industry association to roll our e-learning courses to WIL students Partner with industry association to plan the development of new e-learning courses Monitor and manage students' course completion
Industry	Respond to surveys about the quality and effectiveness of e-learning courses Work with partner organization to provide WIL students with access to e-learning courses

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Assess existing e-learning resources	Partner with relevant organizations to secure access to existing and newly developed e-learning courses	Curated and packaged e-learning resources rolled out to WIL students
Determine any new resources to be created	Develop secure portal for students to access resources	Monitor and manage students' course completion
Shortlist e-learning resources for pilot program	Engage employers to showcase the value of e-learning courses for WIL students	Plan new e-learning resources
	Collect and analyze data from student and employer surveys (surveys to be conducted after courses are complete)	
	Expand the catalogue of e-learning courses for WIL students	

Costs and Funding

Period	Cost	Sources
Year 1	<$100K Secure e-learning resources	Industry financial and in-kind support Government and other supports
Year 2	<$100K Develop catalogue of e-learning resources Create secure portal for student access	Industry financial and in-kind support Government and other supports Fee structure

The cost of e-learning resources is difficult to predict and will vary based on course and vendor selection. Some WIL delivery partners supply pre-packaged resources that may be adapted to the creative technology sector without extensive cost. The initial acquisition of e-learning resources will require an investment from industry, in addition to government or other supports. However, following the initial pilot, maintenance costs could be accounted for by businesses via a pay-for-access service model.

Support Program 2:

Mentorship Matchmaking

About the Program

Mentorship programs and other talent development programs for junior and aspiring workers in creative tech are highly valued. As such, almost every post-secondary training institution that has programs for creative technology roles (whether production, design, creative, or digital) also has an industry-oriented internship or mentorship opportunity. However, while internships and other experiential learning programs tend to be highly institutionalized and come with formal processes and results-measurement practices, mentorship programs (in tech more generally) often lack this level of organization.

In creative tech, mentorship programs are often company-based, and as such are limited in size, not easily visible, accessible, or trackable. The siloed nature of mentorship programs creates an extra level of complexity when trying to understand how many people are actively participating them (particularly when these relationships are informal rather than managed by an industry association). Consultations with international creative technology experts echoed a similar reality. That is, although mentorship programs are seen as high-value investments, they are usually not institutionalized for the sector; like in BC, these programs are often led by individual businesses, at times with support from local industry associations as conveners.

There is notable opportunity for BC to demonstrate leadership and move toward institutionalizing the mentorship process for the creative technology sector. One example of an existing model that could be adapted to suit the sector is Women in Communication Technology's national and regional mentorship program. Additionally, connection platforms offered by organizations like Magnet Today can be leveraged to streamline processes.

Women in Communications Tech Mentorship

Women in Communications and Technology (WCT) is a Canadian not-for-profit that helps women succeed in Canada's digital economy. They provide professional development opportunities, conduct research, and advocate on behalf of women in creative tech. Their two main programs are described in further detail below.

WCT's National Mentorship Program, which has been in place for more than 20 years, provides leadership training for women at all career levels. As part of the program, WCT members are matched with a mentor based on their experience, goals, and network. Members work with their mentors for a one-year period, during which they receive counselling, leadership training, and professional development. Mentors help develop their mentees' leadership skills, help them define their career goals, and help them develop strategies to reach them.

WCT's Regional Mentorship Circles provide like-minded professionals from the telecom, media, and tech industries with the opportunity to form strategic partnerships with their peers. The program helps participants build confidence, overcome career challenges, and build communication and leadership skills. Participants come from varied backgrounds and have varying levels of expertise. While the structure of each Mentorship Circle is designed by local, regional chapters, the guiding principles remain the same. Regional Mentorship Circles currently operate in London, Waterloo, and the National Capital Region (Ottawa-Gatineau metropolitan area).

Program Objectives

- Spearhead creative tech mentor matchmaking program, beginning with a pilot mentorship program for WIL students
- Develop a cross-sector program that matches students with mentors across departments, companies, and sub-sectors

Stakeholders

Entity	Responsibility
Industry	Provide student mentor volunteers Provide financial and in-kind support of the program Evangelize program with WIL students and existing staff
Industry Association	Manage mentoring program and matchmaking tool Secure funding and manage budget Monitor commitments and progress Measure impact of the program
External Partners	Mentor and mentee guidelines and training Development/provision of matchmaking tool

Program Activities

Immediate Term (1–6 months)	**Medium Term** (6–18 months)	**Long Term** (18–24 months)
Create working group with PSIs and industry participation Assess and select matchmaking tools Secure student mentor volunteers from industry	Develop and test matchmaking process Provide training to student mentor volunteers	Roll out pilot of mentoring program to WIL students Monitor commitments and progress Measure the impact of the program Expand the matchmaking program beyond WIL

Costs and Funding

Period	Cost	Sources
Year 1	$100K-500K Program set-up staffing Licensing and testing for matchmaking tool Training resources for mentors	Industry financial and in-kind support Government and other supports
Year 2	<$100K Program support staffing Licensing of matchmaking tool Training resources for mentors	Industry financial and in-kind support Government and other supports Corporate sponsorship

The mentoring program will require an initial investment to staff the program, identify and acquire the appropriate technology to support mentor/mentee matchmaking, and identify and deliver appropriate training to mentors and mentees.

The initial set-up phase for this program would require considerable effort and financial and in-kind support from industry along with other sources, such as government. Once the program has expanded beyond the pilot phase and has attracted a larger number of participants, funding for its maintenance and support in subsequent years could be derived from a combination of sources, including corporate sponsorship and a fee structure for companies sponsoring WIL participants.

Expand

Building and leading diverse, equitable, and inclusive workplaces.

A robust creative technology sector must be rooted in mutual respect and acceptance, with EDI as a central component. Greater awareness of EDI gaps has increased the number of EDI initiatives taking place in creative tech in recent years, but despite many isolated initiatives, widespread, long-lasting change is lacking. While the sector has made strides, continued work and dedication are needed.

Importantly, while BC's creative technology sector is growing rapidly, with increased labour demand, a portion of BC's talent pool remains untapped. Prior research found that in 2020, women, certain racial and ethnic groups, Indigenous Peoples, and people who identify as having a disability are underrepresented in creative technology roles.[20] Yet, due to a lack of reliable data, the extent of this underrepresentation in BC's creative technology sector is largely unknown.

Prior research also found that in 2020, most businesses in BC's creative technology sector are not collecting relevant diversity data, have not yet implemented standard EDI practices, and are not yet working with organizations that support equity-deserving groups.[21]

Despite these gaps, most businesses are keen to prioritize EDI and have generally committed to "doing more."

20 *Cutean, A., McLaughlin, R., O'Neill, K., Quan, T., "Benchmarking the Creative Technology Ecosystem in British Columbia," ICTC, Jan 2021: https://www.digitalthinktankictc.com/ictc-admin/resources/admin/creative-tech-report.pdf*

21 *Ibid.*

Expand Program 1:

Measuring Progress – EDI Survey for BC's Creative Technology Sector

About the Program

To ensure that EDI efforts across the creative technology sector are both meaningful and impactful—and better inform future programs—it is imperative to understand the current state of workforce diversity in the sector. To date, one of the only sources of EDI data for BC's creative technology sector was the *Benchmarking the Creative Technology Ecosystem in British Columbia* report. Therein, creative technology companies were asked to estimate workforce diversity in four types of roles: digital or technical; design; artistic or creative; and production.[22]

To briefly recap the findings of this previous work (according to the surveyed businesses), women account for about 20% to 25% of workers employed in creative, technical, and digital roles. While a handful of studios had proudly reached gender parity, or close to it, most were near or below the one-quarter mark.[23] Larger studios were more likely to be gender diverse than smaller studios, and animation studios were more likely to be gender diverse than VFX or video games. The representation of gender nonconforming, non-binary, or gender fluid individuals was mostly unknown, as was the representation of other aspects of identity, such as ethnic or cultural identity, Indigenous identity, and disability. Nearly half (49%) of studios interviewed for the study did not collect information about Indigenous identity and could not identify whether their employees identified as such. Similarly, 43% did not know whether their employees identified as having a disability because they had never asked. To address the lack of data on diversity in the creative technology workforce, DigiBC and ICTC developed a survey for the sector which was tested in 2022. In order for the survey to yield meaningful data and inform EDI policies over time, it should be deployed annually, in close partnership with other organizations seeking similar data, to prevent duplication of efforts and survey fatigue in the industry.

Program Objectives

- Develop and deploy an annual creative tech EDI survey in partnership with a neutral third-party organization
- Leverage synergies with other organizations gathering data to minimize duplication of effort and maximize industry participation

22 ***Digital (or technical) roles*** *focus primarily on the technical aspects of creative tech and can include software developers, game developers, graphics developers, and pipeline technical directors;* ***Design roles*** *that focus on end-user facing elements and can include user experience designers, user interface designers, campaign designers, and level designers;* ***Artistic or creative roles*** *focus on artistic and creative elements and can include technical artists, storyboard artists, modellers, animators, visual effects artists, and concept artists;* ***Production roles*** *help bring different project components together and can include technical art directors, motion capture directors, development directors, layout supervisors, producers, and coordinators*

23 *These findings mirror Canada's overall technology sector, where about one-quarter (25%) of technology roles are filled by women, whereas women represent nearly half (45%) of the total Canadian workforce.*

Stakeholders

Entity	Responsibility
External Research Partner	Work with other industry and industry-adjacent organizations to identify most effective survey option Develop and deploy survey Monitor industry completion rate Survey analysis and report-back
Industry Association	Collate industry feedback into survey development Monitor and encourage industry participation

Program Activities

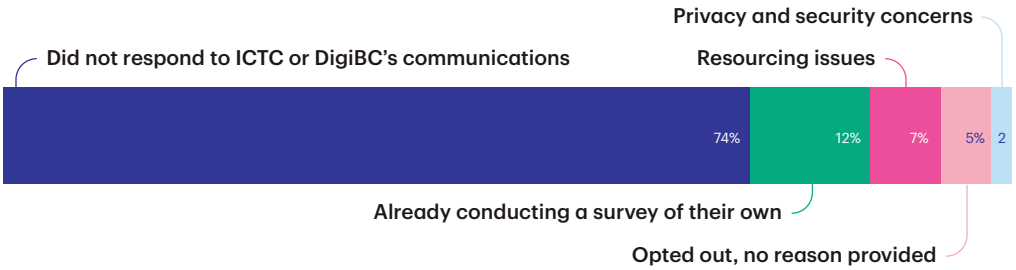
Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Source appropriate technology or licences to ensure appropriate security and data storage considerations are met Complete survey outreach and secure large-scale participation	Incorporate findings from inaugural survey process and participation rates to address issues raised by industry Refine and deploy second edition of annual survey	Deploy third edition of annual survey Complete survey analysis, including sector comparisons Report findings to industry participants Implement effective, regular EDI data gathering across creative technology Use EDI survey data to track trends over time, and deploy strategies and measurable actions

EDI in BC's Creative Technology Sector Survey

ICTC and DigiBC are laying the groundwork to collect better EDI data for BC's creative technology sector, help shape an impactful EDI strategy, and monitor the progress of EDI initiatives over time. From July to October 2022, ICTC and DigiBC ran the inaugural EDI in British Columbia's Creative Technology Industry survey.[24]

In total, 77 companies were invited to participate and of these, 29 (or 38%) distributed the survey to their employees. Among the companies that did not participate in the survey, 74% did not respond to ICTC and DigiBC's communications about the survey, 12% opted out because they were already conducting an EDI survey of their own and did not want to overburden their employees, 7% had resourcing issues, meaning they didn't have the time or human resources to participate, 5% opted out but did not provide a reason, and 2% had privacy and security concerns.

Companies' reasons for not participating in the survey



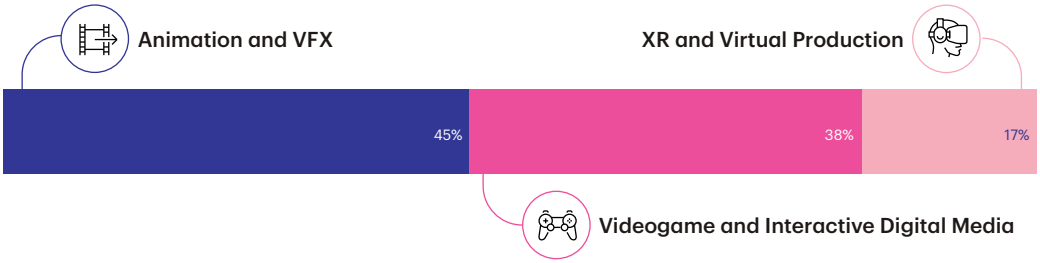
Based on these findings, future editions of the survey would be more successful if:

- DigiBC and ICTC engaged with the companies that did not respond to communications about the survey to find out why they were not inclined to participate
- Companies combined or aligned their respective EDI surveys with ICTC and DigiBC's (or vice versa), thereby making the data comparable
- ICTC and DigiBC engaged with companies that did not have the resources to participate to find out what additional supports would enable them to take part
- ICTC and DigiBC utilized a more secure survey tool that satisfied companies' privacy and security concerns

In terms of subsector, 13 (or 45%) of the companies that participated in the survey were animation and VFX companies, 11 (or 38%) were videogame and interactive digital media companies, and 5 (or 17%) were extended reality and virtual production companies.

24 *The survey was developed in accordance to HRC guidelines.*

Breakdown of Companies that Participated in the Survey



Overall, 46% of the animation and VFX companies that received the survey decided to participate, compared to 45% of the XR and virtual production companies and 28% of the videogame and IDM companies. Based on these findings, future editions of the survey would be more successful if there was more buy-in and participation from companies in the videogame and IDM industry.

Of the companies that participated in the survey, 28 companies had respondents living in BC. In total, the survey reached 1,453 individuals working in BC's creative technology sector. Of the1,453 BC-based respondents, 75% work in the animation and VFX subsector, 25% work in videogames and interactive digital media, and 1% work in extended reality and virtual production.

Breakdown of BC-Based Respondents

Survey Limitations

Demographic Groups

Some demographic groups may be more likely to respond to EDI surveys than others and therefore overrepresented in the survey findings.

Findings Pertaining to Specific Demographic Groups

Only a small number of respondents identified as being part of the following demographic groups:

- Individuals who identify as gender-nonconforming, gender fluid, gender queer, non-binary, questioning, or agender
- Individuals who identify as First Nations, Metis, or First Nations and Metis (Cree)
- Individuals who identify as a person living with a disability

Because of this, there is a high risk that findings about these groups are not representative. This risk is particularly high for findings related to First Nations, Metis, and First Nations and Metis (Cree) respondents.

Need for Long-Term Data

While the inaugural survey data offers a snapshot of the demographic make-up of the creative technology sector in summer 2022, long-term data collection is required to paint an accurate picture of EDI successes, shortfalls, and opportunities over time. Time-series data and longitudinal analysis can be leveraged to design impactful, data-driven strategies that drive change.

Image courtesy of ILM Vancouver

Expand Program 2:
EDI Hub for Employers

About the Program

Creative technology companies have made strides toward diversity in workforce, products, and services that better reflect society. Research shows that EDI is not just an ethical imperative, but also a sound business choice: a Boston Consulting Group study found that companies with more diverse management teams have 19% higher revenues due to innovation.[25] Yet, many companies struggle to sift through the ever-growing and disparate supply of EDI research and resources, sometimes creating confusion and apprehension for leadership and management teams. A curated, centralized library of trusted EDI resources will help creative technology companies sort through the available resources and draft an EDI strategy that works for their business.

25 *Eswaran, V., "The business case for diversity in the workplace is now overwhelming," World Economic Forum, Apr 29, 2019: https://www.weforum.org/agenda/2019/04/business-case-for-diversity-in-the-workplace/*

Practical Steps to Address EDI: Job Postings

Numerous easy-to-implement strategies can help businesses improve the inclusivity of their job postings, and in turn, their diversity. One low-cost and easily implemented strategy is a job posting review, including posting salary ranges. Here, companies review the content of their job postings and the process they use to *distribute* their job postings using an EDI lens.

In terms of content, companies can review whether the language and media used in their job postings are inclusive. Companies should flag and avoid gendered words and job titles such as "journeyman" or "camera man," words rooted in oppressive or racist contexts, and corporate jargon that has been proven to discourage certain candidates from applying.[26] Companies can also include language in their job postings that encourages underrepresented groups to apply, such as an intentional and explicit statement to let candidates know that underrepresented groups will be prioritized during the hiring process. As a rule of thumb, job postings should use plain language and focus on results.[27]

Beyond language, companies should flag and avoid "required qualifications" that are ingrained hiring norms but not actually necessary for a candidate to have.[28] This is particularly important for qualifications that pose high access barriers such as formal education, and for standard requirements like "Canadian work experience," which can be difficult or impossible for some candidates to meet. Finally, companies can use their job postings to emphasize flexible work arrangements such as flex hours or remote work, which can help reduce geographic,[29] emotional,[30] and other barriers.

In terms of distribution, companies should ensure they are distributing their job postings not only through their own personal and corporate networks, but also through channels that are visible and connected to underrepresented groups. Examples of job boards with a broad community reach include the DigiBC job board, Aboriginaljobboard.ca, and the Women in Animation job board.

The popout to the left provides a tangible, low-cost, and easy-to-implement EDI effort that makes job postings more inclusive—but it is just one example. Beyond inclusive job postings, EDI efforts can include non-discriminatory recruiting and hiring practices, fair and transparent processes for employee evaluations and promotions, fair and transparent compensation, flexible work arrangements, feedback and accountability mechanisms for direct reports and managers, and EDI training for managers and staff. To be impactful, many of these must be implemented formally through explicit company policies.

26 *Huppert, M., "5 Must-Do's for Writing Inclusive Job Descriptions," LinkedIn, Apr 9 2018: https://www.linkedin.com/business/talent/blog/talent-acquisition/must-dos-for-writing-inclusive-job-descriptions*

27 *"How to Write an Inclusive Job Posting," Hire for Talent, accessed Aug 2022: https://hirefortalent.ca/toolkit/recruitment/item/4-3-how-to-write-an-inclusive-job-posting*

28 *Huppert, M., "5 Must-Do's for Writing Inclusive Job Descriptions," LinkedIn, Apr 9 2018: https://www.linkedin.com/business/talent/blog/talent-acquisition/must-dos-for-writing-inclusive-job-descriptions*

29 *Mondal, S., "Diversity Hiring: 6 Steps To Hiring More Diverse Candidates," ideal, Sep 14 2020: https://ideal.com/diversity-hiring/*

30 *Smith, M., "Flexible work arrangements can help companies become more diverse and inclusive—here's how," CNBC, Apr 20 2022: https://www.cnbc.com/2022/04/20/how-flexible-work-arrangements-can-help-companies-become-more-diverse-and-inclusive.html*

Online resources

- ICTC's WIL Digital Program
- Magnet's Student Work Placement Program
- TECHNATION's Career Ready Program
- CMPA's Student Work Placement Program
- Venture for Canada's Internship Program
- Creative BC's Creative Equity Roadmap

Program Objectives

- Provide a centralized, trusted EDI information "Hub" for creative tech employers, providing links to relevant training and policy recommendations

Stakeholders

Entity	Responsibility
Industry Association	Collect relevant EDI information Manage hub creation Promote hub Manage hub updates
Industry	End users of and contributors to hub

Program Activities

Immediate Term (1–6 months)	Medium Term (6–18 months)	Long Term (18–24 months)
Aggregate relevant EDI information and resources for creative tech (completed in summer 2022) Describe the resources, including target audience, intended use, and expected outcome	Refine the online platform, translating existing content to a more sophisticated "hub" that allows for easy sorting and filtering of data as the number of resources grows. Market and launch hub	Continually update and maintain the hub

Costs and Funding Sources

DigiBC has collected and curated an initial set of EDI resources[31], which are available on its website

31 *DigiBC 2022, https://www.digibc.org/cpages/edi-resources*

Beyond the programs suggested in this section, individual companies can take steps to address and enhance equity, diversity, and inclusion. Some recommendations are the following:

Additional Recommendation

Leverage Existing EDI Champions

The Creative Tech EDI survey is the first step to making BC's creative technology sector more welcoming for equity-deserving groups. To identify the most worthwhile and impactful next steps, ICTC conducted a series of local, national, and international consultations with EDI experts. The experts unanimously acknowledged the importance of EDI initiatives for creative tech but highlighted that creating a welcoming environment will necessarily require widespread employer and workforce education.

BC's creative technology sector is fortunate to be supported by numerous EDI champions. One prominent example is the TAP (Tech + People) Network, a not-for-profit organization that fosters connection, collaboration, and knowledge sharing within the tech sector. The TAP Network supports EDI initiatives in tech through its resource hub and training and diversity dashboard, which companies can use to track and report progress in EDI.[32] Other examples include Women in Animation Vancouver and Women in Games Vancouver, which champion the representation of women in creative tech, and organizations like QMUNITY, which provide training and support to companies that want to be 2SLGBTQIA+ inclusive.[33]

Globally, organizations like Access VFX, Rise Up Animation, Pipelines,[34] and the BRIC Foundation[35] are recognized for their work in EDI as are individual companies, including Industrial Light and Magic and Dreamworks. Finally, some government agencies have implemented successful EDI programs, such as Screen Queensland, which is recognized for its SBS Diversity Talent Escalator Program, dedicated to underrepresented groups.[36]

Build Stronger Community Relationships

Another way to improve EDI in creative tech is to build stronger relationships with underrepresented communities through organizations dedicated to their support. Creative technology companies can form partnerships with organizations like Women in Gaming Vancouver, Women in Animation, Black Boys Code, and the First Nations Technology Council—many of which offer services that help companies enhance their EDI. The First Nations Technology Council, for example, runs a program called Moving Beyond Inclusion that advances Truth and Reconciliation by creating corporate cultures that make space for Indigenous cultures and views. As highlighted by one Indigenous-led organization that was interviewed for this study, "putting in the time" is key to building strong partnerships and trust—historical injustices have made it crucial for Indigenous communities to understand the intentions of organizations that want to partner with them, as well as the value they provide. Developing strong and equitable partnerships can be a lengthy process, but it creates strong ties and can promote lasting change.

32 *"Diversity & Inclusion Tech Project," TAP Network, accessed Aug 2022: https://www.tapnetwork.ca/cpages/diversity-and-inclusion-tech-project*
33 *"What is QMUNITY," QMUNITY, accessed Aug 2022: https://www.qmunity.ca/about/*
34 *"The best way to meet underrepresented talent," Pipelines, accessed Aug 2022: https://www.pipelines.pro/*
35 *"The best way to meet underrepresented talent," Pipelines, accessed Aug 2022: https://www.pipelines.pro/*
36 *"SBS Diversity Talent Escalator Program – Placement Opportunity," Screen Queensland, Mar 2022: https://screenqueensland.com.au/investment-support/closed-initiatives/sbs-dte-placement-opportunity/*

Employee Retention

While the threat of a global recession and high inflation could tip the bargaining scale in favour of employers once again, retention will remain a core priority for sectors like creative tech, which have specialized skills needs and a limited talent pool. To this end, companies and industry organizations should prioritize initiatives that make their workers feel valued and empowered.[37] Examples include:

- Investing in low-cost employee benefits, such as flexible work arrangements
- Providing avenues for employee training and professional skills development
- Building a sound company culture by investing time in issues that are valued by employees and promoting EDI (a recent survey of American gen-z workers found that 76% of respondents considered workforce diversity an important factor when evaluating job offers; 37% would not apply to a company that had disparate satisfaction ratings among different ethnic groups).[38]

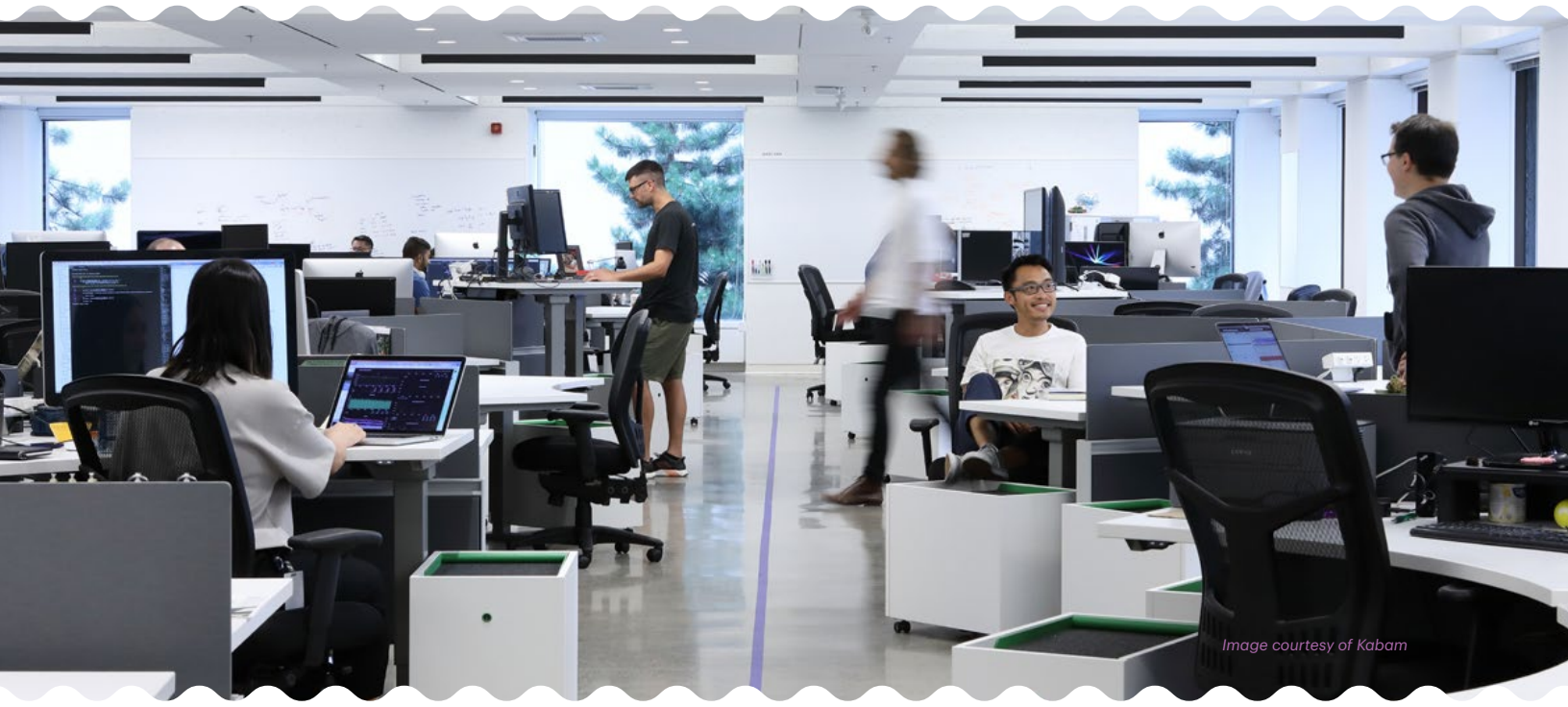
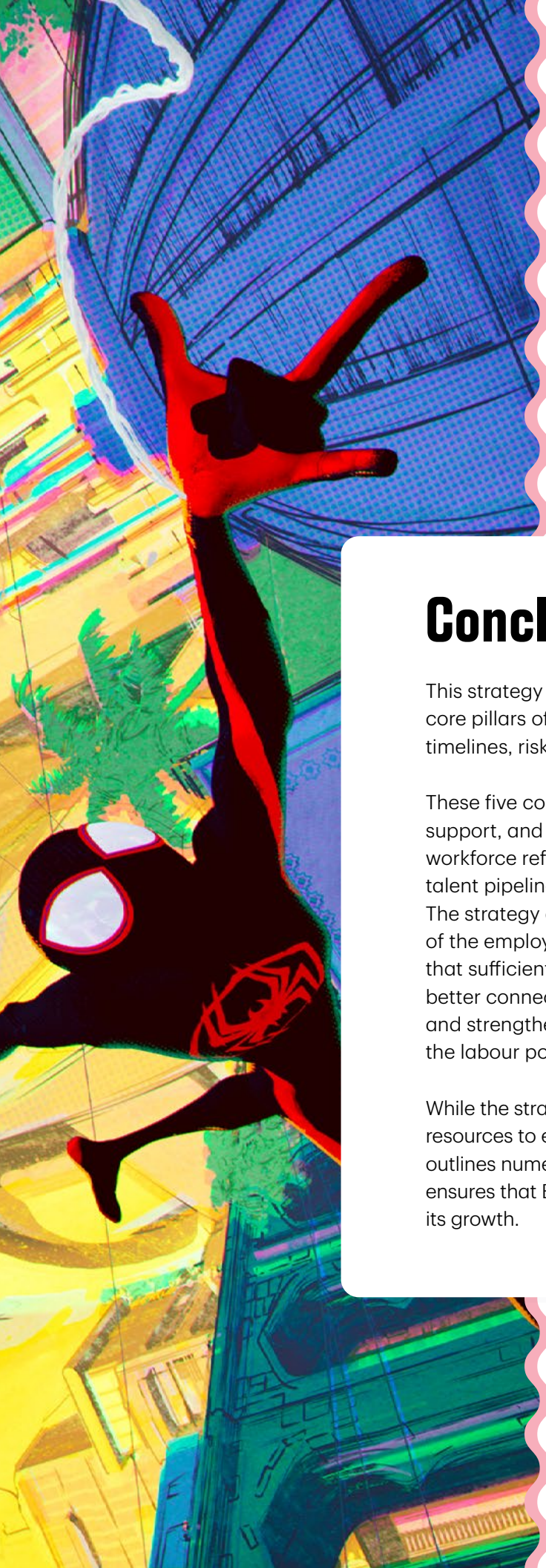


Image courtesy of Kabam

37 *Li, L., "10 Companies with Strong Employee Retention Strategies You Can Learn From," TinyPulse, Aug 3 2020: https://www.tinypulse.com/blog/employee-retention-examples*

38 *"Diversity & Inclusion Workplace Survey," Galssdoor, 2020, https://www.glassdoor.com/employers/blog/diversity-inclusion-workplace-survey/*



Conclusion

This strategy has identified action items under five core pillars of change, each with unique requirements, timelines, risks, and other considerations.

These five core areas to attract & connect, educate, hire, support, and expand the province's creative technology workforce reflect the need to successfully expand the talent pipeline for BC's growing creative technology sector. The strategy entails a range of actions to raise awareness of the employment opportunities in creative tech, ensure that sufficient training and education is in place, foster better connections between companies and job seekers, and strengthen EDI principles that simultaneously expand the labour pool and help underrepresented groups thrive.

While the strategy will require additional planning and resources to ensure successful execution, this report outlines numerous pathways to doing so, which, in turn, ensures that BC's creative technology sector will continue its growth.

Image courtesy of Sony Pictures Imageworks

APPENDIX A: METHODOLOGY AND LIMITATIONS

This strategy was developed using a combination of primary and secondary research.

Secondary Research

In terms of secondary research, the research team conducted a literature review of Canadian and international publications about EDI. The literature sought to identify EDI theory, strategies, and programs relevant to BC's creative tech sector.

Primary Research

In terms of primary research, the research team conducted a series of key informant interviews and an industry survey. These are described in further detail below.

Key Informant Interviews

Primary research for this study consisted of a series of key informant interviews (KIIs) and was held with a variety of subject matter experts in BC as well as in other jurisdictions in Canada and internationally. A total of 33 key informant interviews were completed in this study. This includes representatives from 17 international organizations and three Canadian organizations from outside of BC to provide insights from other successful creative tech clusters. These interviews were primarily conducted with companies while 4 were part of supporting ecosystems (ie incubators, tech parks, or educators). There were also interviews with 13 BC-based organizations. This reflected different parts of BC's creative tech ecosystem (including industry groups/NFPs) and six post-secondary institutions.

KIIs played an important role in gathering insights on trends, specifically as they related to general perceptions, personal experiences, and first-hand accounts related to challenges and new opportunities.

Industry Survey

ICTC and DigiBC are laying the groundwork to collect better EDI data for BC's creative technology sector, help shape an impactful EDI strategy, and monitor the progress of EDI initiatives over time.

From July to October 2022, ICTC and DigiBC ran the inaugural EDI in British Columbia's Creative Technology Industry survey. In total, 77 companies were invited to participate: 29 companies distributed the survey to their employees; of these, 28 companies had respondents living in BC. In total, the survey reached 1,453 individuals working in BC's creative technology sector.

In terms of subsectors, 13 (or 45%) of the companies that participated in the survey were animation and VFX companies, 11 (or 38%) were videogame and interactive digital media companies, and 5 (or 17%) were extended reality and virtual production companies.

Of the 1,453 BC-based respondents, 75% work in the animation and VFX subsector, 25% work in videogames and interactive digital media, and 1% work in extended reality and virtual production.

WIL Surveys

From September to November 2022, ICTC and DigiBC ran two surveys to better understand the needs and opportunities for work-integrated learning in BC's creative technology sector. The first survey targeted post-secondary representatives supporting WIL programs; this survey received 10 responses. The second survey targeted creative technology employers that participate in WIL programs; this survey received 19 responses.

Study Limitations

While ICTC attempted to ensure that the research process for this study was as exhaustive as possible, there are inherent limitations to the sample size and the qualitative nature of the interviews.

EDI Survey Limitations

Diversity in the Creative Technology Sector as a Whole

Some demographic groups may be more likely to respond to EDI surveys than others and therefore overrepresented in the survey findings.

Findings Pertaining to Specific Demographic Groups

Only a small number of respondents identified as being part of the following demographic groups:

- Individuals who identify as gender-nonconforming, gender fluid, gender queer, non-binary, questioning, or agender
- Individuals who identify as First Nations, Metis, or First Nations and Metis (Cree)
- Individuals who identify as a person living with a disability

Because of this, there is a high risk that findings for these groups are not representative. This risk is particularly high for findings related to First Nations, Metis, and First Nations and Metis (Cree) respondents.

APPENDIX B: FURTHER RESOURCES

EDI Resources and Tools

The following table is a non-exhaustive list of various organizations, resources, and tools that can be used for talent development, training, and education for both creative technology workers and organizations.

Career Exploration Tools

Work BC - Explore Careers

ICTC's Skill-to-Job Matching

Discover! Creative Careers

TAP Network Tools and Resources

CES - Career Education Society

Creative Pathways by CreativeBC

Organizations and Programs Dedicated to Improving EDI

Black Screen Office (BSO)

Racial Equity Screen Office (RESO)

Indigenous Screen Office (ISO)

IM4Lab

Coalition of Innovation Leaders Against Racism (CILAR)

Black Innovation Fellowship

Women in Animation Vancouver's (WIA) ACE Program

Women in Games - Vancouver

Creative Manitoba Youth and Young Adult Mentorship Programs

Reboot Representation Tech Coalition

ACCESS: VFX - X-VFX and Q-VFX

Rise Up Animation

EDI Education and Training - Creative Technology and General Options

TAP (tech & people) Network D&I Training

Diversity Works

Diversity and Inclusion Certificate Program - Cornell University

Compliance Training Group - Diversity and Inclusion in the Workplace Training

Centre for Creative Leadership - EDI Training

HRx

WithYouWithMe (WYWM)

QMUNITY

Creative Equity Roadmap by CreativeBC