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Teleworking Across the Border: Insights from Cascadia

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BORDERS IN GLOBALIZATION

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TELEWORKING ACROSS THE BORDER:

Insights from Cascadia

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EXECUTIVE SUMMARY

The COVID-19 Pandemic, supported by the rapid improvements in digital communication tools, has accelerated profound changes in how work is performed as millions worldwide started working remotely. Washington State and British Columbia were among the states/provinces with the highest percentage of people teleworking in the United States and Canada, respectively, mainly due to the developed industries of high technology, including the IT sector. However, as digital solutions allow for working from anywhere, they also boosted the rise of international virtual labor migration (cross-border telework), making labor mobility an even more diverse phenomenon. What remains an open question is whether telework enables a cross-border digital labor market and how work across borders transforms and alters cross-border economic linkages.

The study adopts a three-tiered methodology which involves desk research, document analysis and semi-structured in-depth interviews. Taking the cross-border region "Cascadia" as a case study, this report scrutinizes the development of cross-border telework by exploring its role in cross-border economic integration and the development of cross-border functional areas. The report also explains the relationship between cross-border linkages in the labor market in geographical and digital space and highlights factors fostering and hampering the development of cross-border teleworking in Cascadia. It also addresses the question of the role of the border itself as well as the competing/overlapping regulatory regimes of the US and Canada in this regard.

The study reveals that although contemporary cross-border economic linkages in Cascadia are increasingly shifting into the virtual space, the number of cross-border teleworkers is relatively low, reflecting limited cross-border labor mobility before the COVID-19 Pandemic. The study also shows that cross-border telework in Cascadia is subject to two opposing processes: globalization and regionalization. As digital solutions allow reaching for skilled workers from almost all over the world, Cascadia's cross-border telework market is characterized by global ties and rivalry with California. At the same time, cross-border teleworking in Cascadia remains dependent on geographical proximity due to the demand for knowledge workers in Washington State and access to talent in British Columbia, cultural affinity (language and cultural proximity), mutual trust, lower transaction and information costs, as well as localized knowledge spillovers.

Among the main identified impediments is the lack of adequate regulation of cross-border telework, both in the US and Canada and at the international level. It is especially relevant to challenges such as employment regulations, health insurance and laws protecting the flow of intellectual property across borders, and data security. The lack of specific legal status for cross-border teleworkers makes direct employment of teleworkers still rare in comparison to self-employment or employment through EOR (Employer of Record).

As cross-border telework could strengthen economic integration and improve the cross-border innovation ecosystem in Cascadia, the study suggests implementing a supportive legal framework for cross-border teleworkers and modifying the existing immigration policy for skilled cross-border teleworkers. It also points to the need to negotiate solutions regarding intellectual property and data storage across borders and to undertake joint actions to strengthen the position of Cascadia as a global high-tech hub attracting knowledge teleworkers from all over the world.

AUTHOR

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1. INTRODUCTION

In recent decades concepts such as mobility, flows, and networks have become components of new and emerging spatial formations, i.e., 'spaces of flows,' superseding 'spaces of places' and borders (Castells 1989). This also generated a change in the perception of cross-border areas and a shift from purely spatial approaches (based on proximity to the border) to functional approaches based on the transboundary linkages and interactions, which often play a crucial role as a premise for cross-border cooperation and integration (Jakubowski et al. 2021). Traditionally, physical connectivity (which is facilitated by cross-border transport infrastructure and manifests itself in cross-border flows of goods, services, and mobility of people) is considered essential in this respect.

This also applies to the Cascadia border region (Trautman and Cappellano 2019), home of one of the busiest crossings along the Canada–US border and characterized by many interrelationships, particularly, developed bilateral trade, and policy alignments. The scale of these links is likely to increase further with the development of transportation infrastructure, including a potential high-speed rail service. Additionally, as Brunet-Jailly (2021) notes, many products of recent industries, ICT and potentially ICT-enabled services for example[1], are easily moving across the virtual border. The digital space also creates excellent conditions for information and knowledge transfers, development of value chains, e-commerce, remittances, telemedicine, teleconferencing and more. Digital solutions help reduce the friction of the border which dampens cross-border relations. The results of recent studies show that due to the pandemic, border regions in North America have increased the use of innovative technology to their advantage and have been able to, "even enhance firm cross-border activities without actually having to traverse across the border" (Richardson and Cappellano 2022, p 821).

The same applies to the labor market, as the COVID-19 pandemic proved that many people can successfully work remotely without daily commuting. According to the US Census Bureau (2022) and Statistics Canada (2022), Washington State and British Columbia are among the states/provinces with the highest percentage of people working remotely in the United States and Canada, respectively, reaching one-third of the total number of employees. This may be attributed to the structure of the Cascadia regional economy with developed industries of high technology, including the IT sector (Richardson 2017), where the percentage of employees working remotely is among the highest (Statistics Canada 2022). However, what remains an open question, is what role cross-border remote work plays in cross-border economic integration and the development of cross-border functional areas. At the same time, cross-border teleworking generates additional challenges and consequences for both employees and employers in areas such as taxation, labor law, insurance and access to health care, social security, data protection and implementation of additional legal benefits. It raises a question on the role of the border itself as well as competing/overlapping regulatory regimes of the US and Canada and international agreements in this regard.

1 ICT services are those used to facilitate information processing and communication; potentially ICT-enabled services are services that can predominantly be delivered remotely over ICT networks (The Bureau of Economic Analysis 2023a).

This study hypothesizes that although digital solutions provide connectedness globally, the development of digital linkages may be place-based. According to Castells (1996, p. 413), "the space of flows is not placeless, although its structural logic is. It is based on an electronic network, but this network links up specific places, with well-defined social, cultural, physical, and functional characteristics." This means that, "cyberspaces coexist with geographic spaces, providing a new layer of virtual sites superimposed over geographic spaces" (Kitchin 1998, p. 403). On the one hand, digital linkages extend the geographic realm. On the other hand, digital linkages change geographic space (Zook 2007). It means that cross-border linkages on the Internet may remain territorially embedded.

This report presents the results of a study on cross-border digital linkages in Cascadia using telework as an example. There are several reasons for choosing Cascadia as a case study for evaluating the effects of the digital shift and international borders on a cross-border labor market. As previously mentioned, the region is characterized by a strong high-tech sector of the economy and a relatively high share of knowledge workers in the employment structure on both sides of the border. Cascadia is also home to a cross-border innovation ecosystem promoted by the Cascadia Innovation Corridor (CIC), in which multidimensional cross-border economic ties are developing (Cappellano 2019). Companies from Washington State show interest in better access to talent from Canada and de-bordering the cross-border labor market. Finally, the Canada-U.S. border poses a barrier to cross-border labor mobility (Richardson 2017), thus potentially increasing the attractiveness of cross-border remote work. In turn, the selection of teleworking as an example of digital cross-border functional linkages is primarily motivated by the dynamic growth of remote work around the world during the COVID-19 pandemic that it is so far under-researched, for example, compared to cross-border e-commerce.

2. AIMS OF THE STUDY AND RESEARCH FRAMEWORK

2.1 AIMS OF THE STUDY

This study aims to investigate what role digital linkages play in contemporary cross-border integration processes and the development of cross-border economic ecosystems in the Cascadia Region. The report seeks to explore the development of linkages on the digital cross-border labor market (teleworking) and juxtaposing them with more traditional (physical) forms of cross-border flows, i.e., cross-border labor mobility. More specifically, the study aims at providing knowledge on the digital shift in cross-border economic integration through addressing the following research questions:

- What is the relationship between cross-border linkages in the labor market in geographical and digital space in Cascadia?
- What factors foster and hamper the development of cross-border teleworking in Cascadia?
- What role does the U.S.-Canadian national border, and the associated national and international regulatory regimes play in the development of cross-border teleworking in Cascadia?
- What might further influence the development of digital linkages have on transportation and border infrastructure?

2.1 RESEARCH FRAMEWORK AND METHODOLOGY

A three-tiered study involved desk research, document analysis and semi-structured in-depth interviews.

A desk research study based on secondary data from administrative sources, relevant reports and news articles aimed to assess the development of cross-border teleworking on the background of connectivity and cross-border labor mobility. The following data sources were used to determine the current state and dynamics of the development of cross-border links in digital space:

- Bureau of Economic Analysis, Department of Commerce
- Household Pulse Survey
- Longitudinal Employer-Household Dynamics
- U.S. Census Bureau
- Statistics Canada

Document analysis involved analysis and interpretation of national legislation of the U.S. and Canada and international agreements such as the General Agreement on Trade and Services (GATS), North American Free Trade Agreement (NAFTA), North American Agreement on Labor Cooperation (NAALC) and The Agreement between the United States of America, the United Mexican States, and Canada (USMCA) to understand what conditions for development of teleworking in the Cascadia region are created by existing regulatory regimes.

Finally, semi-structured in-depth interviews method was used to gain new knowledge on the development of cross-border teleworking in Cascadia. A questionnaire including open-ended questions allowed interviewees to add other dimensions to the interview that were not foreseen by the researcher. Interviews were conducted with the 11 representatives of U.S. firms employing teleworkers residing in Canada, business organizations and public administration bodies with a great deal of knowledge of the labor market in Cascadia in general and telework in particular. Interviews were conducted in person or on Zoom/MS Teams between November 2022 and May 2023.

This study has potential limitations. First, cross-border telework is a new phenomenon, undergoing dynamic changes and extremely diverse due to its different forms of provision. The very notion of cross-border telework remains ambiguous and vague, which influences the different ways it is perceived and understood. In addition, telework currently develops in a rather unregulated environment. As a result, there is a lack of data to examine the scale of the phenomenon and its exact characteristics across borders. Second, despite efforts, the research sample proved limited due to the low number of interviewed entities compared to those invited, especially among companies. The process of recruiting respondents was also hampered by the difficulty of identifying entities that employ teleworkers.

3. CROSS-BORDER VIRTUAL INTEGRATION IN CASCADIA

3.1 DEFINING CROSS-BORDER INTEGRATION

Cross-border integration can be thought of as a complex process that fosters a positive impact over cross-border regions contributing to the strengthening of cross-border regionalism (Sohn 2014). According to Sohn (2014, p. 587), cross-border integration "stems from the strategic behavior of actors who actively mobilize borders as resources." Sohn designated the "geo-economic" model of cross-border integration, which is based "on the mobilization of the border as a differential benefit and aims to generate value out of asymmetric cross-border interactions." This form of cross-border integration is reflected in growing cross-border flows (trade, commuting, shopping etc.). At the same time, he proposed an alternative model, called "territorial project," based on the logic of "cross-border hybridization," leading to comprehensive convergence of areas located on both sides of the border. Along the same lines, Reitel (2007) distinguished two types of cross-border integration: spatial integration – which reflects the socio-economic reality of the cross-border space (thus referring to 'spaces of flows' and the functional understanding of cross-border areas) and territorial integration – which is contingent on the intensity of political cooperation and institutionalization.

Durand broadens our understanding of cross-border integration by distilling its four dimensions (Durand 2015):

- The functional dimension encompasses all the cross-border flows and interactions initiated by the individuals, companies, and other collective actors (cross-border trade, commuting, shopping).

- The institutional dimension refers to more or less formalized and flexible exchanges that occur beyond the borders between various actors, such as public administration, civil society, and entrepreneurs and can be considered synonymous with cross-border cooperation.

- The structural dimension is concerned with the contextual characteristics of the cross-border area in terms of urbanization, infrastructure, economic activity and social composition and highlights the similarities and differences between territories.

- The ideational dimension refers to the perceptions and representations that border societies have of the neighboring societies and regions.

Certainly, while cross-border integration is understood as more of a process than a state, it is a multidimensional concept. While several types of integration can take place together, their different dimensions do not always go hand in hand (Decoville et al. 2013; Brunet-Jailly 2022). This is because borders and border regions are explicitly, "multi-layered and complex as well as context- and practice-bound" (Paasi and Zimmerbauer 2016).

In this report, we will focus on cross-border economic integration as manifested in the growth of cross-border functional relations as a set of interactions (flows) in border territories. In contrast to previous studies, we will focus on new forms of cross-border linkages taking place not in geographical space but in virtual space.

3.2 CROSS-BORDER INTEGRATION IN CASCADIA

The idea of a binational economic and ecological region in the Pacific Northwest and western Canada known as "Cascadia" emerged during the 1990s as a result of growing awareness of intense trade and economic interactions and the ecological interdependence (Alper 1996; Loucky and Alper 2008). The region, having the Vancouver-Seattle megalopolitan area as its core, encompasses Canada's British Columbia, and the U.S. states of Washington and Oregon. The name "Cascadia" is taken from a lower region of the Rocky Mountains that bridges Canada and the United States on their western coast (Brunet-Jailly 2006). Cascadia's uniqueness as a manifestation of socially constructed cross-border regionalism is anchored in the apparent contradiction associated with the existence of two often antagonistic groups: the neo-liberal business community, which defines the border in terms of free trade; and environmentalists, who define the border in terms of eco-systems (Cold-Ravnkilde, Singh, and Lee 2004).

Once largely dependent on the exportation of raw materials, the area is now one of the leading centers of high-tech industries globally. Aviation, defense, computer software, and cultural industries related to music, film, and television as well as the growing biotechnological sector represent an economic base of the cross-border region (Taylor 2001; Cold-Ravnkilde, Singh, and Lee 2004). The region's rapid economic development over the past decades is accompanied by significant levels of cross-border commuting, shopping, and movement of goods and services, which greatly increased with the passage of the Free Trade Agreement (FTA) and the North American Free Trade Agreement (NAFTA) (Konrad and Nicol 2008). Due to the intensity of economic linkages and ties the Canadian and American economies became highly interdependent, something especially evident for Cascadia, where culture and values are most similar (Brunet-Jailly 2008).

The volume and variety of cross-border trade in Cascadia are growing, as are cross-border networks and associations. A substantial number of subnational and transnational programs and organizations have emerged: the Cascadia Project, the Pacific North-West Economic Region, the British Columbia/Washington Council, the Pacific Corridor Enterprise Council, the Cascadian Task Force, and the Main Street Cascadia, which form territorial and institutional networks of cooperation in the binational region. Since its inception, the most ambitious and influential of these is the Pacific Northwest Economic Region (PNWER), which brings together public and private sector leaders to discuss border issues and engage in cross-border economic cooperation (Smith 2004; Trautman 2021).

In addition to the institutions mentioned above, the cross-border region is also home to the Cascadia Innovation Corridor (CIC), established in 2016 by a Memorandum of Understanding among government, academic and business leaders and strengthened by a renewed MOU signed in 2018 by the Governor of Washington and the Premier of British Columbia (Friedman, Conteh, and Phillips 2019; Trautman and Cappellano 2019; Trautman 2021). The initiative was strongly supported by the Microsoft Corporation (which has offices in both Seattle and Vancouver), due to the immigration challenges it faced in reaching talent across the border (Friedman, Conteh, and Phillips 2019; Cappellano, Richardson, and Trautman 2021). The vision of the CIC, "is to become one innovative

economic zone that generates a shared sense of identity and belonging as its centerpiece," by "maximizing the Greater Pacific Northwest's competitive advantages and enhancing [its] position as a global hub of innovation and commerce" ("Cascadia Innovation Corridor" 2018). The CIC focuses on research, economic development, and transportation, enhancing innovation, productivity, and improved connectivity through the planned establishment of the first Ultra-High-Speed Ground Transportation (UHSGT) linking the main cities along the corridor: Vancouver, Seattle, and Portland (WSDOT 2020; Cappellano 2019).

The idea of promoting a cross-border innovation ecosystem in Cascadia is anchored in the innovation potential of the region, bolstered by highly qualified workers and a strong presence of high-tech services (Lundquist and Trippl 2013). What requires further support, however, are greater flows of knowledge, expertise and skills across the border, brought about by higher mobility of students and labor migrants (Richardson 2017).

Following Brunet-Jailly (2008) and Cappellano (2019), in this study we define Cascadia as a geographical cross-border area of the Pacific North West which includes Washington State (U.S.) and the province of British Columbia (Canada) with the metropolitan regions of both Vancouver (Canada) and Seattle (USA).

3.3 TOWARDS CROSS-BORDER VIRTUAL INTEGRATION

The internet introduced entirely new opportunities for cross-border connection, interaction and exchange (Kotowski and Dos Santos 2010). An increasing share of human activities is now taking place in the digital space. Explosive growth in the flow of data and communication touches almost every aspect of our social, economic and political life. It also changes the shape, nature and dynamics of cross-border integration processes.

First, digitalization transforms and enriches cross-border flows, affecting cross-border integration processes in the functional dimension. One of its manifestations is the development of cross-border e-commerce, understood as a remote sale of goods and services over computer networks. It has become increasingly popular as the easiest foreign market entry mode, influencing the growth of physical goods flows across borders (Cassia and Magno 2022). Today, the development of e-commerce is facilitated by e-customs, an online document verification capability, the issuance of electronic commercial documents, and the facilitation of electronic and online payments in foreign currencies (UNCTAD 2017).

Digitalization, however, often replaces the physical flow of goods with digital flows through the creation of purely virtual goods and services (e.g., films, games, music, books, magazines, and newspapers). They can be easily transported across borders, and their supply is almost endless. The impact of digitalization can be seen in the reduction, if not elimination, of marginal costs and distribution costs (Manyika et al. 2014), in which a significant role is played by the mushrooming online platforms enabling production, exchange, and consumption of virtual goods. Indeed, the market for services that can be provided across the border using digital tools is much broader. It includes what is known as the ICT services (computer software, telecommunication and computer services) and potentially ICT-enabled services (business, professional and technical services, such as computers and information services; legal, architectural, consulting and advertising

services; financial services such as online banking and investment activities such as market research and buying and selling shares, as well as insurance services such as digital transmission of premiums and payments for claims online). Their share in the U.S. foreign trade has been steadily increasing, and Canada has remained one of its most important trading partners for years (The Bureau of Economic Analysis 2023b).

The internet is also transforming some cross-border physical flows of people into virtual flows, of which perhaps the most prominent example is the development of cross-border telework using tools for virtual collaboration, i.e. the phenomenon that is the subject of this report.

Second, the growth of digital solutions interacts with cross-border integration on an institutional level, changing the nature, forms and tools of cross-border cooperation. In the case of public administration, the use of information technologies promotes government transformation, which is understood as (1) a transformation of internal processes or (2) a transformation of the relationships between governments and other social and political actors (institutional transformation) (Luna-Reyes and Gil-Garcia 2014). Within the framework of existing structures of cross-border cooperation digital technology can be used as a catalyst for organizational functions and as a tool to enhance the cross-border public services delivery system (Weerakkody et al. 2016). Instead, companies are enjoying significant economic benefits from the digitization of cross-border supply chains (Seyedghorban et al. 2020), the development of digital value chains and the reduction of operational costs of business.

Third, digitalisation is also transforming cross-border integration processes in the structural dimension. While border and transport infrastructure are a prerequisite for cross-border links in geographical space, linkages in the digital space require an efficient internet infrastructure, i.e. a fibre-optic network. The development of transport infrastructure increases the temporal accessibility of areas on the other side of the border and – to some extent – reduces transportation costs, which is particularly important for the cross-border flows of people and goods (Geurs et al., 2001). The impact of internet infrastructure on virtual flows and connections is even more significant. As it expands, the barrier of distance and cost is almost completely disappearing. In the case of Cascadia, this has been served by, among other things, the recent construction of a new fiber-optic cable linking Seattle and Vancouver (T-Net 2021).

Fourth, digitization has a significant impact on ideational cross-border integration. Web portals, online media, or social media help diffuse ideas, strengthen social networks and allow the formation of virtual communities, people who integrate on online platforms and exchange thoughts across national borders. The Internet thus becomes a tool that creates a forum for the connection of individuals, groups and organizations that otherwise would have limited access because of traditional boundaries. At the same time, digital solutions facilitate cross-border interactions and the maintenance of existing ties across borders (Kotowski and Dos Santos 2010). In addition, digital representations of places in social media can change their meaning and perception through visualization and naming (Rzeszewski 2018), the mechanisms called digital place making practices (Główczyński 2022). All of this helps reinforce the idea of cross-border regionalism, mutual proximity and understanding, and changes perceptions of the border and the societies living across the border.

The digitization does not create a new dimension of cross-border integration. However, it does significantly transform and alter the integration processes in each of the identified dimensions (functional, institutional, structural, and ideational) by adding a digital layer. This layer serves as a platform for cross-border interactions and processes that effectively go across the borders through the use of technology.

3.4 CROSS-BORDER TELEWORK

Work has traditionally been tethered to a physical place. This correlation has weakened as people started to work with information – something that could be manipulated remotely. The digital revolution, bringing a variety of new tools and solutions, has made the relationship between place and work even less sticky, as much information-based work can be done from almost anywhere with the use of the Internet and electronic devices (Graham and Anwar 2019). Therefore, as noted by Standing (2016), we are now seeing a mass migration of labor without migration of workers.

According to the UNECE (2022, p. 47), telework is a, "subcategory of remote work where personal electronic devices such as a computer, tablet or telephone (mobile or landline), are used to perform the work, and where the use of the personal electronic device is an essential part of the work". There is considerable overlap between telework and home-based work, as many teleworkers work from home and many home-based workers are teleworkers. These two concepts, however, are distinct.

Remote work, which is a broad term, is defined as "situations where the work is fully or partly carried out on an alternative worksite other than the default place of work" (ILO 2020, p. 5). This term applies to employees and dependent contractors as well as to independent workers who either have fixed premises used for carrying out their work or who mainly work from their own homes. In contrast, a mix of in-person and remote work under the control of an employer is described as hybrid work (UNECE 2022). Telework also cannot be directly associated with digital work, which is defined as both income-generating and digitally intensive, rather than just delivered with the use of digital networks (Graham and Anwar 2019).

The term telework is often considered synonymous with telecommuting. Telework is the preferred term in Europe, while 'telecommuting' is more widespread in the U.S. That said, the Washington State Energy Office defines telecommuting as part-time work and transportation alternative that substitutes the normal work commute with the choice of working from home or at an office close to home (Johnson 2013). Therefore, we assume that telework is the broader, and more relevant concept.

Before the advent of ICT tools, cross-border work was performed exclusively by workers physically crossing an international border to reach a particular work location in a different country. However, the development of digital platforms and other information technologies has changed cross-border work location patterns. The category of cross-border workers is broad and includes: (temporary) migrants; cross-border commuters crossing a national

border on a daily basis; seasonal workers; consultants working on a specific project who may cross international borders on a less regular basis; as well as cross-border teleworkers who can work for a company in a given country but choose to live in a preferred different geographic location; and finally, nomadic-workers who do not have any single, fixed residence (Choudhury, Foroughi, and Larson 2021).

Cross-border teleworking provides access to pools of skilled workers elsewhere in the world. There are many reasons behind current interest in this area from both sides of the labor market: competitive pressure from the market place, shortfalls in skilled labor supply, wage differentials and employees' expectations of improved life-work balance and less commuting. Cross-border 'teleworkability,' however, depends on the job, with varying degrees of tasks that can be done remotely across different occupations (UNECE 2022). Generally, it is most common in knowledge-intensive services. For instance, most of IT workforce worldwide is teleworking, while more than 18% is working cross-border remote (Maggioli 2022).

Drawing from the definition proposed by Eurofund (2020), cross-border telework can be defined as any type of work arrangement where both dependent and independent workers work remotely for an employer with a location in a different country from their country of residence, using digital technologies such as networks, laptops, mobile phones and the internet.

Following Zwaan (2022), we distinguish three types of cross-border telework:

- Employment – cross-border telework performed under an employment contract in return for payment for the companies which do not have an entity in a certain jurisdiction.

- Self-employment – cross-border telework performed by working owners of unincorporated enterprises (own account workers) who are not in paid employment but are paid by commercial transactions. This category includes workers with commercial agreements, usually classified as independent workers, and workers in self-employment arrangements who work in a hierarchical relationship of dependency towards a client classified as dependent contractors. The latter category includes workers having contractual arrangements of a commercial nature; being paid by commercial transactions; in employment for profit; do not have an incorporated enterprise; do not employ one or more persons as an employee and are operationally and/or economically dependent on another entity that exercises control over their productive activities and directly benefits from the work they perform (UNECE 2022).

- Employer of record (EOR) – cross-border telework performed for an EOR, a third-party organisation that hires and pays an employee on behalf of another company and takes responsibility for all formal employment tasks. It can take the form of a beneficiary registered in a certain jurisdiction as well as an online platform with a specific mission to simplify cross-border remote working.

Each of the above-mentioned forms of telework generates significant but different legal and practical implications due to its cross-border (international) nature.

4 LABOR MARKET IN CASCADIA

4.1. STRUCTURE OF THE ECONOMY AND LABOR MARKET

According to the Bureau of Economic Analysis, Washington State is the 11th largest economy in the U.S. (by the Gross domestic product, GDP), generating $677.5 billion in GDP in 2021 and providing nearly 3.6 million jobs in 2023. British Columbia's economy generates a GDP of $279.7 billion (CAD $350.6 billion) and provides 2.8 million jobs (as of October 2022). In the structure of Gross Value Added (GVA) creation in both Washington State and British Columbia, the greatest share is held by the finance, insurance, real estate, rental and leasing, information, professional and business services sectors- additionally, the construction industry in British Columbia also makes a significant contribution (Bureau of Economic Analysis, 2022; Statistics Canada 2023).

The employment structures in Washington State and British Columbia have many similarities. Both have a significant proportion of jobs in services, exceeding 80% of total jobs (table 1). Additionally, two main cities in the Cascadia region – Vancouver and Seattle – share similar economic cluster portfolios, characterized by a large number of employees in business services, distribution of electronic commerce, information technology and analytical instruments, financial services as well as marketing, designing, and publishing (Cappellano 2019).

Table 1. Covered employment by industry in 2022*

Industry	Washington State	British Columbia
	%	
All industries	100.0	100.0
Goods-producing sector	17.6	18.7
Agriculture, forestry, fishing, and hunting	3.3	1.6
Mining	0.1	1.0
Utilities	0.2	0.5
Construction	6.4	8.6
Manufacturing	7.6	6.7
Services-producing sector	82,5	81.3
Wholesale trade	3.8	3.4
Retail trade	9.4	12.4
Transportation and warehousing	3.5	5.2
Information	4.4	2.7
Finance and insurance, real estate, and leasing	4.4	5.9
Professional, scientific, and technical services	7.1	10.0
Management of companies and enterprises	3.0	1.3
Administrative and waste management services	5.3	1.9
Educational services	1.3	7.3
Health care and social assistance	12.5	13.4
Arts, entertainment, and recreation	1.5	2.6
Accommodation and food service	8.0	6.7
Other services (except public administration)	2.8	3.7
Total government, all industries, all ownerships	15.4	5.0

* For Washington State as of the 3rd quarter, 2022; for British Columbia as of Oct 2022.

Source: Washington State Employment Security Department (2022); Statistics Canada (2022b).

One of the distinctive features of the two regions is the immense importance of the high technology sector in the economy and the employment structure. For several decades Washington State has been home to large and growing sectors in software publishing and the logistics and aviation industries with companies like Microsoft, Amazon, Boeing, Zillow and Redfin, centered in the Seattle area. At over $138 billion, the economic impact of the technology industry accounts for more than 20% of the Washington state economy, which is the highest rate in the U.S. and well above the national average of 8.8%. In the Seattle-Tacoma-Bellevue metropolitan area, where about 95% of the economic impact of the technology sector is concentrated, the industry accounts for nearly 30% of the local economy (Saldanha 2023).

In contrast with Washington state, the importance of the high-tech sector in B.C.'s economy is smaller. About 10,000 companies providing, i.e., telecommunications services, software and motion picture production & post-production generate more than $17 billion (CAD $21.4 billion) or about 6.6% of the province's economic output (BC Stats; Statistics Canada). Around 70% of B.C.'s high technology businesses are situated in the Mainland/Southwest region, with most of those located in Metro Vancouver (Schier 2021), the fastest-growing high-tech market in North America (CBRE 2022), often described as "the new tech hub" (Vancouver Economic Commission 2023).

The growing importance of the high-tech sector in Cascadia is reflected in the structure and dynamics of the labor market. Washington State has the highest concentration of technology workers in relation to its overall employment base in the U.S., with 1 in 10 workers is employed in the high-tech sector, the highest high-tech share of total employment in the country (with an average of 6.2%). In 2022, the state recorded about 350,000 jobs in technology companies, with more than 80% of tech workers employed in the Seattle-Tacoma-Bellevue metropolitan area (nearly 13% of the total workforce) (Saldanha 2023). In British Columbia, the technology sector employs over 150,000 professionals, 75% of whom work in Metro Vancouver. This accounts for about 6.6% of jobs (compared to 6.0% nationally), ranking the province third in Canada, behind Quebec and Ontario (Schier 2021; BC Stats and Statistics Canada).

Despite the lower importance of the high-tech sector in Canada's economy compared to the United States, Canada has recently recorded a much higher rate of employment growth in the sector. While U.S. high-tech software/services employment grew by 9.8% in 2021 compared to 2020, growth in Canada reached 29.4%. Metro Vancouver topped the list, with the fastest growth in high-tech employment at 44.2%. Despite recent layoffs among U.S. giants such as Microsoft, Google, Amazon, and Meta, Washington State's technology sector is also experiencing rapid growth. Seattle alone saw 18.6% job growth in the high-tech in 2021, ranking it 4th among Tech-30 markets in the U.S. (CBRE 2022).

The sector's rapid growth and increased demand for labor are creating upward pressure on wages. Technology employees working in B.C.'s enjoy 15% higher earnings relative to the national average in the high-tech sector. However, wages for high-tech software/services workers in Vancouver are on average 30% lower than in Seattle. In this regard, Washington State is second only to California, with Seattle behind Silicon Valley and San Francisco (Schier 2021; CBRE 2022; Bureau of Labor Statistics, U.S. Census Bureau).

4.2. CROSS-BORDER LABOR (IM)MOBILITY

The labor mobility often characteristic of many border areas is relatively constricted in Cascadia, especially in relation to developed trade flows (Gibbins 1997). According to the results of a passenger vehicle intercept survey at four ports of entry between British Columbia and Washington State conducted by BPRI in partnership with the Whatcom Council of Governments in 2018, only 3% of Canadians (CAN) and 8% of Americans (U.S.) were crossing the border for work/business purpose as compared to 3% and 13% respectively in 2013 (Border Policy Research Institute 2019). Despite their geographic proximity, Canadians make up a relatively small percentage of the working population in Washington state. According to the Migration Policy Institute, in 2021, Canadian-born individuals accounted for less than 3.9% of the foreign-born workforce (approx. 42,000) (Migration Policy Institute 2023). The data shows limited labor mobility and weak (especially compared to trade links) cross-border labor mobility in Cascadia (Richardson 2017).

There are several reasons for such a situation. First, as Vance (2012, p. 23) points out, "the regulatory environment of the U.S.-Canada border [...] is inherently better equipped to accommodate the movement of material goods than of people". This aspect of cross-border movement of professionals is a concern, especially in the context of the structure of the economy in Cascadia, increasingly reliant on a service-oriented economy. This is problematic because the high-tech services and elements of value chains that play a key role in it rely heavily on interpersonal interaction (Vance 2012; Richardson 2017).

The cross-border movement of skilled labor in the Cascadia region is mainly hampered by the restrictive U.S. immigration policy and visa requirements, despite preferential treatment for Canadians linked to treaty provisions within the North American Free Trade Agreement (NAFTA). Qualified Canadian citizens eligible for TN non-immigrant status, however, must meet a number of criteria that are limited in nature compared to the requirements for the E-2 Treaty Investor visa, H1B visa for specialty workers or EB-category visas, which allow migrants to gain lawful permanent residence in the U.S. if they engage in skilled work (U.S. Citizenship and Immigration Services 2023). The need to meet these requirements means that acquiring talented and skilled workers from Canada has become the domain of large companies that can afford adequate legal assistance (Richardson 2017).

Cross-border labor mobility is also negatively affected by various security measures and restrictions, intensified after 9/11, and further hampered by dynamic and uncoordinated changes during the COVID-19 pandemic (Border Policy Research Institute 2020; Trautman 2022). These security measures bring some uncertainty to border crossings, which is experienced especially by Canadian citizens, even when they provide the proper documents (Vance 2012).

Another significant factor limiting cross-border labor mobility is the relatively long distance of Cascadia's major centers of Seattle and Vancouver from the border. Additionally, despite adequate road infrastructure, a bottleneck remains at the border crossing with the need to undergo border control scrutiny. These limitations adversely affect the attractiveness of cross-border labor mobility, especially daily commuting to a workplace located on the other side of the border. Certainly, some improvements in this area have been made with the introduction of various mechanisms to facilitate border crossing, reduce wait time, and increase predictability. For example, the implementation of the passenger preclearance for the land, rail, and marine modes

of transportation (Border Policy Research Institute 2016) and Trusted Traveler Programs like NEXUS. That said, further improving connectivity in the region through ultra-high-speed rail could be beneficial in this regard (WSDOT 2020).

Finally, cross-border labor mobility is often motivated by the existence of a certain level of asymmetry in terms of wage differentials, job availability, and types of employment that make cross-border mobility more enticing. Often the existing differences in the level of wages or prices become a key factor stimulating the growth of cross-border linkages of a functional nature, manifested in the intensification of flows, including increased cross-border trade and labor activity of the population (Jakubowski 2020; Jakubowski and Wójcik 2023; Bergs 2012; Decoville and Durand 2019). Just as access to a wealthier market or lower manufacturing costs generates growth in cross-border trade, access to the more attractive and better-paid jobs stimulates cross-border mobility of workers. It seems that the existing disparities in this regard between Washington State and British Columbia are not large enough to become a driver of large-scale cross-border mobility. With the rise of Vancouver as a global high-tech hub, the push and pull factors of cross-border labor mobility may weaken further.

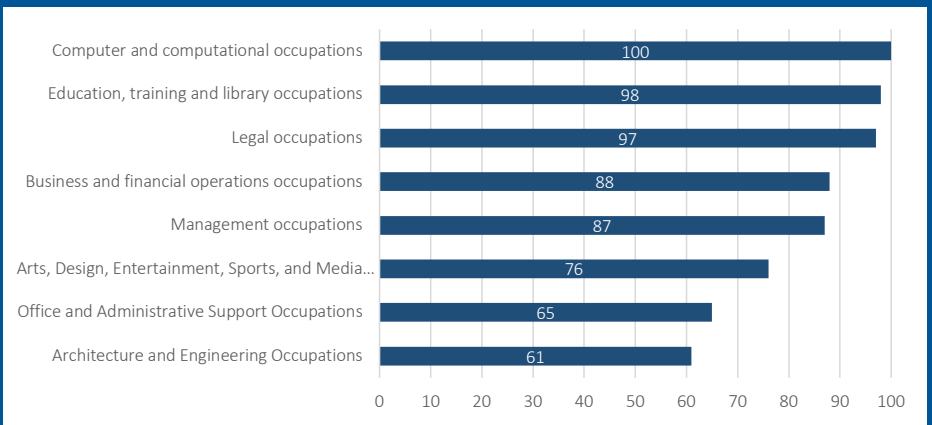
Some opportunity to overcome the unfavorable factors indicated above, especially concerning the first three, brings the increased importance played in the modern economy by ICT and telework.

4.3. JOBS THAT CAN BE DONE REMOTELY AND TELEWORKING

A first wave of telework arose in the 1980s, however the dynamization of the development of this phenomenon has occurred quite recently, with the boom brought about by the induced changes in the labor market during the COVID-19 pandemic reaching a peak during the 2020 lockdowns, when nearly half of the workforce in Australia, France and the UK were teleworking and approximately one third in the U.S. and Canada (OECD 2021).

Although telework has a potentially broad application, not all jobs can be done remotely. Dingel and Neiman (2020) estimated that only 37% of jobs in the U.S. can be performed entirely at home, noting significant variation across the industries (figure 1).

Figure 1. Main occupations, ranked by the share of jobs that can be done at home, by occupation's major group (%)



Source: Dingel and Neiman (2020).

Juxtaposing the employment structure in Washington State and British Columbia provides an estimate of the share of ICT-enabled work that can be done remotely in both regions (Table 2). According to our estimations, it accounts for over 2.2 million jobs, of which 1.22 million are in Washington State and 998 thousand are in British Columbia. Over 423 thousand jobs in the professional, scientific, and technical services sector can be performed remotely, with 166 thousand jobs in the information sector and 153 thousand jobs in the finance and insurance sector. These figures show the potential for cross-border telework in the region.

Table 2. Jobs that can be done at home in Cascadia, by industry

Industry	Share of jobs that can be done remotely (%)	Number of jobs that can be done remotely (Thous.)	
		Washington State	British Columbia
All industries	-	1,220.5	998.1
Goods-producing sector	-	114.7	101.6
Agriculture, forestry, fishing, and hunting	8	9.3	3.5
Mining	25	0.5	7.2
Utilities	37	2.1	5.6
Construction	19	43.2	44.8
Manufacturing	22	59.6	40.5
Services-producing sector	-	1,105.8	896.6
Wholesale trade	52	71.2	48.9
Retail trade	14	46.9	47.6
Transportation and warehousing	19	24.0	27.1
Information	72	113.6	52.5
Finance and insurance	76	74.1	79.6
Real Estate and Rental and Leasing	41	24.0	23.4
Professional, scientific, and technical services	80	203.2	219.9
Management of companies and enterprises	79	83.2	28.5
Administrative and waste management services	31	58.1	16.5
Educational services	83	38.1	167.2
Health care and social assistance	25	111.2	92.2
Arts, entertainment, and recreation	30	16.1	21.7
Accommodation and food service	4	11.3	7.4
Other services (except public administration)	31	31.2	31.4
Total government, all industries, all ownerships	41	223.7	56.1

Source: Own estimation based on the share of jobs that can be done at home, by industry by Dingel and Neiman (2020) and data on covered employment by industry in 2022 (Washington State Employment Security Department 2022; Statistics Canada 2022b).

The number of people working from home has been gradually increasing over the past decade. According to the Census Bureau's American Community Survey (ACS), 163,000 employed in Washington State worked from home in 2010, 5.3% of all those employed. By 2019, their numbers had increased to 242,000 (6.5%). In a relatively brief period, COVID-19 has caused a dramatic acceleration of a previously slow trend. In May 2020, the share of those working from home rose to 9.0% (326,500 employees), and by May 2021, it had reached 24.2% (887,500 employees), placing the state second in the country in this regard. At the time, nearly half of Seattle's workforce (46.8%) was teleworking, the highest percentage among Metropolitan Areas after Washington D.C. (Burrows, Burd, and McKenzie 2023).

In both the United States and Canada, the share of teleworkers peaked in April-May 2020 with another increase in early 2021. The easing of restrictions related to the Covid-19 pandemic has led to a gradual decline in the percentage of the employees working from home (faster in the United States and noticeably slower in Canada) (Clarke and Hardy 2022), however, the share of telecommuters in Washington State and British Columbia still remains very high. According to the more detailed U.S. Census Bureau Household Pulse Survey, in August 2022, 19.0% of Washington State's workforce teleworked, while 14.8% worked in a hybrid system. The state was second only to Washington D.C. and Maryland in this regard (U.S. Census Bureau 2022). Similarly, in October 2022, in the province of British Columbia, the share of workers doing work exclusively at home was 15.9%, while hybrid work was done by another 8.2% (higher shares were recorded only in Ontario) (Statistics Canada 2022a). Adoption of telework is much more pronounced among companies that make extensive use of information and communication technologies (ICTs) and is much more common among knowledge economy workers (Haider and Anwar 2022).

The data discussed above show the volume of telework in Washington State and British Columbia, but it does not provide insight on the scale of the cross-border telework phenomenon. Some light is shed on this issue by the results of the Labor Force Survey (LFS) held by Statistics Canada. As of June 2022, when the LFS included questions on this topic for the first time, 2.6% (87,000) of employees in Canada who work most of their hours at home report to an office or worksite located in a different country. The share of cross-border teleworkers in British Columbia was the nation's highest, at about 4.3% of those working from home (interval from 2.6% to 6.4% at 95% confidence level), i.e. about 16,000 employees. At the same time, in British Columbia, about 10.6% of workers working from home mostly interact with people located in another country (55,100), with a national average of 7.5% (Statistics Canada 2022a).

Although there is a high probability that a sizable portion of teleworkers are employed at workplaces in the U.S., the results of this survey do not answer the question of what percentage of teleworkers report to an office or worksite located in the U.S., or in Washington State. In addition, the survey encompassed only employees in Canada who work most of their hours at home and report to an office or worksite located in a different country, provided that their employer hires them through a Canadian subsidiary. This means that the survey did not include workers directly employed by companies based abroad and self-employed workers working at home who may interact with clients in other countries, while it is most likely that teleworkers belonging to the latter group is the most numerous.

5. CROSS-BORDER TELEWORKING IN CASCADIA

5.1 SCALE, DYNAMICS AND PROSCPECTS OF CROSS-BORDER TELEWORK

The phenomenon of cross-border telework is difficult to measure. Despite the first attempts by Statistics Canada (2022) to survey employees working from home for foreign entities, we have no more detailed information on the subject from statistical or administrative sources. The question of the various forms of telework provision also remains a challenge. These include direct employment with an entity based in another country (in which case the worker counts as part of the workforce of the country in which the company is based), employment through a subsidiary registered in the teleworker's country of residence and self-employment. In the latter two cases, teleworking should be reflected in the statistics of the teleworker's country of residence, while the self-employed group is generally not included in the labor market surveys. In contrast, from a national accounts perspective, their work is treated as a service export.

Considering the results, in some sectors (e.g., software development and other ICT or ICT-enabled services), cross-border teleworking has been developing for at least a few years, while in other sectors it has only become somewhat more evident with the outbreak of the COVID-19 pandemic and the more general shift towards teleworking that it caused. The market for cross-border telework has recently become more diversified, but it is highly differentiated from sector to sector. It has not assumed massive proportions in any of them so far.

While cross-border telework is most prevalent in the software development sector, this industry also has the broadest and almost global range of connections. It makes the cross-border telework market of the information technology services sector fuzzy, characterized by many multi-directional links, and blurred in its coverage. Given the nature of the industry cross-border teams of workers are not limited to the Cascadia region. Rather, the ability to reach for cross-border teleworkers has led some hi-tech companies to seek them out around the world benefiting from the cost advantage. For quite a long time there was also, and still is, a gravitation of B.C. workers toward California (Silicon Valley) over Seattle. Additional opportunities for hiring cross-border telecommuters have been brought by online platforms like Deel (www.deel.com), Oyster (www.oysterhr.com) or Amazon MTurk (https://www.mturk.com), allowing hiring across boundaries and for global payroll.

Although Cascadia's cross-border telework market is characterized by global ties and rivalry with California, the (growing) intensity of cross-border telework within the region is apparent. Some unidirectionality of the phenomenon is also noticeable - respondents remain unanimous that it is much more common for British Columbia employees to telecommute with Washington State companies than vice versa. From the perspective of Canadian companies, sourcing labour from the United States is not attractive, mainly because of higher wage expectations.

According to interviewees, the development of cross-border telework in Cascadia also shows another interesting feature. In the pre-pandemic period, sourcing talent from Canada was the domain of mainly large and medium-sized companies. To do so, they

attracted knowledge migrants using institutional capacities that allowed them to overcome barriers related to U.S. visa policies, or they established offices on the other side of the border (such as Microsoft Development Centre or Amazon Vancouver). In the process of sourcing Canadian workers, small (and to some extent medium-sized) companies could not compete equally. The development of cross-border telecommuting in Cascadia has levelled the playing field between companies of varied sizes and thus can be considered more favourable to small businesses.

The COVID-19 pandemic has proven that cross-border telecommuting helps overcome many of the barriers associated with sourcing talent from Canada, which should encourage its further development. However, according to interviewees, it is also likely that employers can expect at least occasional face-to-face contact and office visits from employees in the future. In Cascadia, this could mean the evolution of cross-border telework into cross-border hybrid work.

Respondents pointed out that the understanding of telework adopted for the survey is incomplete. After all, remote work tools are quite invaluable for performing many professional duties, including, above all, maintaining contacts with foreign partners. Thus, cross-border telework, in this broader sense, has revolutionized cross-border professional and business ties. The changes that have taken place are irreversible and will likely only deepen.

5.2 DETERMINANTS AND DRIVERS OF CROSS-BORDER TELEWORK

Two main groups of determinants and drivers of cross-border teleworking in Cascadia can be distinguished as those of a general nature and those specific to the region. The first group encompasses more general factors, including, i.e.: the digitalization of the economy, the spread of teleworking forced by the COVID-19 pandemic, the dynamic development of teleworking tools and the greater effectiveness of teleworking in comparison to stationary work, and the increase in popularity of this form of working in the broader context of the cultural changes taking place. However, the importance of these factors remains strongly dependent on the sector.

Besides factors of a general nature, it is possible to identify several factors that influence the development of cross-border teleworking in Cascadia:

- First, cross-border telecommuting facilitates access to talented knowledge workers in British Columbia. Due to the prominent level of education at Canadian universities and more liberal migration policies, British Columbia residents have long been an attractive group of potential employees for companies in the booming high-tech industry in the Seattle Metropolitan Area. The large and growing demand for knowledge workers in Washington State cannot be met in the domestic market. To some extent, the development of telework overcomes the existing barriers to cross-border labour mobility identified in this report.

- Second, a key factor influencing the development of cross-border telework in Cascadia remains the wage gap (wages for high-tech software/services workers in Vancouver are, on average, 30% lower than in Seattle). Existing asymmetries mean that hiring

teleworkers from British Columbia increases the cost-effectiveness of U.S.-based businesses and makes them more competitive, which also contributes to lower costs associated with running an office.

- Third, geographic proximity is a key factor identified by respondents. Although cross-border telework is a solution that significantly reduces the role of the geographic factor in international flows of employees and the way the work is performed, geographic proximity and the associated lack of time zone differences positively affect the course and efficiency of the tasks performed by employees in international teams (compared to telework teams that include employees based in Asia or Central and Eastern Europe).

- Fourth, a factor having a positive impact on the development of telecommuting in Cascadia is the language and cultural proximity of Americans and Canadians, which is even more pronounced in the Pacific Northwest, according to respondents.

- Fifth, a factor influencing the development of cross-border telecommuting in Cascadia is also the relatively good knowledge of the labor market by businesses from Washington State. For the past several-some years, Vancouver has been developing as a spearhead for many Seattle-based technology sectors, facilitating further cross-border expansion and the development of telework across the border.

- Finally, according to some respondents, the growth of cross-border telework may also be a kind of hedge for companies against the US's uncertain migration policies, as highlighted by the COVID-19 pandemic and the border crossing restrictions introduced because of it.

5.3 OBSTACLES AND HINDRANCES OF CROSS-BORDER TELEWORK

While there are many factors stimulating the development of cross-border telework in the Cascadia region, respondents also point to numerous barriers, constraints and factors that negatively affect its growth. According to respondents, the most important of these are the following:

- First, the main barrier is the lack of adequate regulation of cross-border telework, both in the U.S. and Canadian legal systems and at the international level (bilateral and within the USMCA). It is especially relevant to challenges such as employment regulations, health insurance and medical care issues, tax regulations, laws protecting the flow of intellectual property across borders, and data security. This issue is discussed in subsection 5.6.

- Secondly, telework development in Cascadia may also be negatively affected by the rapid growth of the high-tech sector in Vancouver Metro, the associated increase in demand for knowledge workers and pressure-driven wage increases in British Columbia. It could have the effect of equalizing wage levels between Washington State and British Columbia and reducing the importance of the cost advantage. On the one hand, this may result in an even greater tendency for companies to seek workers globally, especially in markets where the cost advantage is much greater. On the other hand, this process could lead to the development of more balanced, bilateral cross-border links in the telecommuting area in Cascadia.

- Third, one threat to the development of cross-border links in Cascadia's telework market is the competitiveness of California-based companies, primarily located in Silicon Valley. Due to the size of the sector, it is characterized by a greater supply of jobs and a slightly higher level of wages, which translates into its attractiveness. This factor is further strengthened by the fairly long tradition of cross-border labour mobility ties of this spatial arrangement, highlighted by respondents.

- Fourth, respondents predict that the cross-border telework market could be negatively impacted by the fast-changing corporate culture associated with the work delivery. While Seattle high-tech companies tend to accept telecommuting, in California some managers have begun to expect employees to return to the office.

- Finally, respondents point to remaining deficiencies in Internet infrastructure, especially in remote, outlying parts of Washington State and British Columbia.

5.4 THE IMPACT OF COVID-19

COVID-19 did not introduce entirely new trends in cross-border telework, but it accelerated - exponentially - trends already in place. Enforced by periods of lockdown and supported by rapid improvements in digital communication tools, the shift toward telework was also reflected in the dimension of cross-border ties. At the same time, cross-border telework in Cascadia during the COVID-19 pandemic did not reach such significant proportions as in some cross-border areas of the European Union (MOT 2022). The phenomenon took on considerable proportions where developed cross-border labour markets existed prior to the outbreak of the pandemic, characterized by substantial numbers of frontier workers and cross-border commuters, among others.

According to respondents, the changes brought about by COVID-19 in cross-border telework will be long-lasting (as one interviewee phrased it, "The genie is out of the bottle"). However, this does not mean that its forms and nature will not evolve in the future. Much will depend on the direction of changes in corporate culture (workplace culture), the interplay between the supply and demand sides of the labour market and regulatory regimes. According to respondents, cross-border telework in Cascadia, due to geographic proximity, may evolve into cross-border hybrid work. It could mean that some cross-border teleworkers will have to periodically check in at an office located on the other side of the border.

5.5 IMPACT OF THE BORDER

The role of the border on cross-border teleworking is ambivalent. On the one hand, it is a strong barrier, on the other hand, the border reinforces differences in the two labor markets that can be capitalized on by knowledge workers seeking employment on either side of the border. This makes the border an asset for cross-border knowledge workers and increases the attractiveness of employment on the other side of the border.

Respondents agree that crossing the US-Canada border for work and employment presents some challenges (visa regime, need to legitimize the purpose of travel). Many interviewees noted that the border causes some friction due to the experience of uncertainty while crossing it. In addition, in the years leading up to the outbreak of the COVID-19 pandemic, the border became quite congested, which harmed border crossing times, despite the implementation of some solutions to facilitate it. Finally, crossing the border became particularly troublesome during COVID-19. This is causing companies to look for alternative ways to work and collaborate across the border to reduce the friction associated with its existence. Cross-border telework appears to be a largely appropriate solution to the problems outlined above.

5.6 ROLE OF THE REGULATORY REGIMES

Due to its transnational nature, much of today's digital labor is unbound by regulations (Graham and Anwar 2021). According to Policy Horizons Canada (2016), "virtual work is relocating the job from a regulated environment to an unregulated one where current labor law does not necessarily apply". By breaking the link between the country of residence and the place of work, telework enforces changes in the implementation of existing legal frameworks concerning employment, including labor and tax legislation, employment standards, occupational health and safety, and equality. In many states, including U.S. and Canada, there is no specific legal status for employees who work remotely from a different country. This does not mean, however, that cross-border telework is taking place in an environment devoid of any regulation. As noted by Graham and Anwar (2019, p. 185), "if digital labor is seen to take place in a global digital market, some would argue that the reason why it is largely unregulated is that it is unregulatable"(Graham and Anwar 2019, p. 185). To counter this idea, they recognize that "digital work is not global. Rather, it is international. It has clear concentrations, and always/inherently falls under the jurisdiction of at least one place". It proves problematic in this regard to determine under which jurisdiction a cross-border teleworker falls, and to what extent?

The legal framework for economic integration in North America was characterized by a progression from protectionism to the Auto Pact in 1965, the Canada-United States Free Trade Agreement (CUSFTA) in 1989, the North American Free Trade Agreement (NAFTA) in 1994 (Konrad and Nicol 2008), and United States-Mexico-Canada Agreement (USMCA) in 2020 (Dewey Lambert 2021). As a result of these agreements, U.S. and Canada have seen their trade and investment relations undergo an exponential growth (Hufbauer and Vega-Canovas 2003; Brunet-Jailly 2006). These achievements however, have not translated into deeper labor market integration.

According to the interviewees, with both NAFTA and USMCA emphasizing the regulation of foreign trade and investment, cross-border labor migration has been and continues to be largely neglected. Established under the North American Agreement on Labor Cooperation (NAALC) and operating from 1994 to 2020, the Commission for Labor Cooperation promoted cooperative activities regarding migrant workers of the Parties (U.S., Canada and Mexico) and provided mechanisms to ensure that labor laws are being enforced in all three states (North American Agreement on Labor Cooperation 1993). However, the actions taken by the Commission did not address the challenges generated by the development

of cross-border telework. Although the USMCA generally strengthens provisions of NAALC related to labour (Chapter 23), it does not introduce new regulations relating neither to cross-border workers nor to cross-border teleworkers. Chapter 16 of USMCA facilitates the movement of business travellers between the U.S. and Canada and thus has a positive impact on cross-border labor mobility (Richardson 2017). However, according to respondents, too little effort was made to renegotiate its provisions vis-à-vis NAFTA. Considering the far-reaching changes in the global economy, the USMCA defines the terms of digital trade (Chapter 19), and cross-border trade of services (Chapter 15)[2], regulates cross-border flows of the data and improves protection of intellectual property rights between parties (Agreement between the United States of America, the United Mexican States, and Canada 2020). The impact of the digital shift on cross-border virtual labor mobility, however, has not been similarly reflected in USMCA provisions.

In parallel, only some of the challenges of cross-border telework have been regulated in bilateral agreements. For instance, the issue of avoiding double taxation has been settled in the Canada-United States Convention with Respect to Taxes on Income and on Capital (1980) signed in Washington on September 26, 1980, as amended by the Protocols signed on June 14, 1983, March 28, 1984, March 17, 1995, and July 29, 1997. The Convention provides exceptions that change the tax treatment of nonresident alien employees concerning services performed in the U.S. or Canada, which are generally subject to federal, state and local income taxes and withholding. Similarly Social Security agreement between the U.S. and Canada signed on August 1, 1984 (often called the "Totalization Agreement") eliminates dual Social Security taxation and helps to fill gaps in benefit protection for cross-border teleworkers among others (Totalization Agreement with Canada 1984).

In the general absence of relevant regulations at the international or bilateral level, telework in the U.S. and Canada is mainly subject to national jurisdiction. Regulations and their interpretation in the U.S. and Canada differ, leaving some legal aspects of cross-border telework unclear. Moreover, while the US and Canada enforce employment laws at the federal level, they are different with regard to certain employment aspects at the state/provincial level (taxes, social security, and other benefits). The rules for hiring cross-border teleworkers and tax obligations also may vary by worker classification (foreign employee, independent contractor, or individual hired through an EOR). Generally, however, both the U.S. and Canada do not have specific requirements governing cross-border remote work. All of this prompted one of the experts to describe the cross-border telework market as a "regulatory wild west."

2 In accordance with USMCA Article 15.6, "No Party shall require a service supplier of another Party to establish or maintain a representative office or an enterprise, or to be resident, in its territory as a condition for the cross-border supply of a service" which is important for the provision of cross-border services using digital tools by the self-employed teleworkers.

In the view of some interviewees, however, this vagueness has its positive side. Current immigration and visa regulations in the U.S. have very narrow and, to some extent, archaic definitions of work activities. Cross-border telework allows U.S. companies to circumvent these regulations, making it possible to reach out to talent that would not be obtained otherwise, not only among Canadian citizens but also citizens of other countries with legal status in Canada as long as they have consent from their employer, follow local laws regarding visas, and file taxes with their country of tax residence. However, this only applies to fully remote workers, as for hybrid work the visa requirement must be fulfilled (e.g., based on a TN visa).

In the case of Canada, by contrast, the efforts of companies in attracting qualified high-tech talent are supported by the government, which launched a new H-1B Open Work Permit Program, enabling H-1B visa holders in the U.S. to live and work in Canada. What is more, a planned Innovation Stream under its International Mobility Program, should enable talented remote workers generating foreign income to live and work in Canada on a digital nomad visa (Singer 2023). This should only strengthen the position of Canada which is already a number one destination for digital nomads according to the Digital Nomad Index (2023).

However, in the opinion of interviewees, apart from the visa, tax and social security regulations, the main obstacle to cross-border telework of knowledge workers, especially software developers, is the question of data storage and data privacy due to more restrictive policy in B.C. in this regard, as well as the intellectual property protection. These issues are addressed in the USMCA in relation to international trade, but they do not apply in the same way to telework. Among the main promoters of international/bilateral regulations in these areas are large technology corporations such as Microsoft or Amazon.

5.7 ROLE OF THE INFRASTRUCTURE

In many cases, digitalization replaces the physical flows of goods with digital flows (e.g., movies, games, magazines). Similarly, teleworking enables a digital market for knowledge workers and teamwork across borders. As Hartmann points out, these effects should lead to less transportation (Hartmann 2019). However, in the opinion of the interviewees, there are several indications that the possible further development of cross-border teleworking should not have a substantial impact on the reduction of cross-border flows of people in Cascadia.

Firstly, the share of people crossing the border for work-related purposes has been relatively low so far. It means that the digital shift observed in the labor market is unlikely to result in a substantial reduction in the number of border travellers. Secondly, the Seattle and Vancouver metropolitan areas are experiencing rapid population growth in recent years. Thus, a possible decrease in the number of workers crossing the border associated with the increased popularity of teleworking is going to be offset by population growth. Thirdly, the most likely direction for the evolution of cross-border telework in Cascadia points to a shift towards hybrid working. It means that workers will probably have to move periodically across the border. Thus, in the opinion of interviewees, plans to build a high-speed rail between Seattle and Vancouver (WSDOT 2020) appear to be justified.

However, interviewees point out that while the development of cross-border teleworking may result in a reduction of congestion at border crossings, it will certainly require the development of a cross-border Cascadia broadband network between the Vancouver, BC, and Seattle, WA by Cascadia Gateway and its affiliate Cascadia FiberNet Inc. (T-Net 2021). In alignment with the rural broadband initiatives in both regions, the completion of the Cascadia network will benefit businesses and citizens it connects by providing open access, competitive ultra-high-speed bandwidth to urban, suburban, and rural communities on both sides of the border, what may make cross-border teleworking more accessible and effective.

5.8 A NEED FOR A POLICY AGENDA?

The COVID-19 pandemic has powerfully demonstrated that uncoordinated unilateral decisions on securitizing borders lead to disruption in cross-border linkages. According to respondents, there is a need for a cross-border policy agenda at the federal (interstate) level, as well as between Washington State and the British Columbia, that would avoid the negative effects of potential crises on cross-border labor mobility in the future. As cross-border teleworking complements, and in some cases replaces, cross-border labor mobility, an adequate policy framework is also required to make sure that everybody has the same understanding of how that should unfold.

According to respondents, the different regulations in the labor market in the U.S. and Canada are both a disadvantage and an advantage. On the one hand, they can be seen as growth assets that generate benefits from the differences. On the other hand, they give rise to numerous doubts and dilemmas relating to how cross-border teleworkers are employed, how labor is accounted for and how it is taxed. Different regulations regarding intellectual property protection and data security are also becoming a challenge. According to respondents, close integration of the U.S. and Canadian labor markets, which could include health care or pension issues, should not be counted on in the near future. For mutual benefit, however, it is worth doing more to facilitate and improve cross-border labor mobility and teleworking by reducing existing legal barriers.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

As Friedman, Conteh, and Phillips (2019, p. 1) point out, "Canada and U.S. stakeholders have a mutual interest in supporting cross-border innovation ecosystems." Integration of the systems of production, provision and distribution of goods and services between regions of geographic proximity creates joint economic gain based on "strategically leveraging differences or complementarities." Similar benefits may stem from the cross-border integration of labor markets through the creation of a larger pool of knowledge workers.

The COVID-19 pandemic has accelerated profound changes in the way in which work is performed as millions of people across the world started to work remotely. Although with the end of the pandemic, many people have returned to their offices, much work that does not require daily personal interaction with clients, supervisors or colleagues is still being done remotely (Finlayson 2021). These developments also paved the way for the rise of international virtual labor migration (cross-border telework) making labor mobility an even more diverse phenomenon.

Taking the Cascadia Region as a case, the aim of this report was to investigate the development of cross-border linkages in the digital labor market. Our estimations suggest that the potential for cross-border telework in Washington State and British Columbia includes approximately 2.2 million jobs that can be performed remotely, of which 0.4 million jobs are in the professional, scientific, and technical services sectors. Although contemporary cross-border economic linkages in Cascadia are increasingly shifting to the virtual space, the number of cross-border teleworkers has not reached a significant level there, as, for instance, at some internal EU borders (MOT 2022). We may assume that cross-border telework has boosted mainly in borderlands characterized by high cross-border labor mobility before the COVID-19 pandemic according to the assumption that the linkages in the digital space reflect, to some extent, the linkages in the geographical realms. Based on the case of Cascadia, we may conclude that digitalization is complementing the traditional cross-border linkages on the labor market in some areas (e.g. through remote meetings in the course of professional duties with partners from abroad and the establishment of international working groups), replacing them in others (e.g. by substituting labor migration and cross-border commuting with telework), as well as creating entirely new modes of cross-border interaction (e.g. through the emergence of internet platforms allowing hiring across boundaries and for global payroll).

The integration of virtual labor markets in Cascadia is subject to two opposing processes: globalization and regionalization. On the one hand, the development of digital solutions allows for working from anywhere (digital nomads) and reaching for skilled workers from almost all over the world. On the other hand, many factors favour the regionalization of cross-border telework, especially that fully remote work is often replaced by hybrid work, requiring periodic check-in at an office. As argued by Leamer and Storper (2001), the Internet tends to "produce economic geographies with an increased number of "conversations" (via e-mail and other electronic media) between distant locations" but often still require 'localized clusters where face-to-face interaction [...] can take place". This "compulsion of proximity" (Gillespie, Richardson, and Cornford 2001) provides impetus to spatial agglomeration.

Among the main factors fostering the regionalization of cross-border telework in Cascadia are the large demand for knowledge workers in Washington State that cannot be met in the domestic market and access to talented knowledge workers in British Columbia. To some

extent, the development of telework overcomes the existing barriers to cross-border labour mobility identified in this report. Cross-border teleworking in Cascadia remains also dependent on geographical proximity due to cultural affinity (language and cultural proximity), mutual trust, lower transaction and information costs, as well as localized knowledge spillovers.

While there are many factors facilitating cross-border telework in the Cascadia region, our study allows to point to some obstacles. Among the main impediments is the lack of adequate regulation of cross-border telework, both in the US and Canada and at the international level. It is especially relevant to challenges such as employment regulations, health insurance and laws protecting the flow of intellectual property across borders, and data security. Due to the lack of specific legal status for cross-border teleworkers and associated uncertainty, direct employment of teleworkers is still rare and is being superseded by self-employment (which gives greater freedom to work remotely across borders but limits employee benefits) or employment through EOR (see: Grzegorczyk, Nurski, Schraepen 2022).

As crossing the US-Canada border for work and employment presents some challenges (due to the visa regime and a need to legitimize the purpose of travel), companies are looking for alternative ways to work and collaborate across the border to reduce the friction associated with its existence. Since telework is one of such solutions, in the light of the above it can be concluded that the existence of the US-Canadian national border is among both important drivers and obstacles for the development of cross-border teleworking in Cascadia.

Although the digitalization of cross-border integration processes leads to profound changes in the cross-border economic ecosystem in Cascadia, our findings suggest that cross-border teleworking should not result in the reduction of cross-border flows of people that could affect the use of transportation and border infrastructure. Thus, the potential further development of remote work across the national border should not be considered a factor limiting the viability of a high-speed rail between Seattle and Vancouver.

Since remote work is here to stay and cross-border telework could strengthen economic integration and improve the cross-border innovation ecosystem in Cascadia, we recommend:

- Implementation of a supportive legal framework for cross-border teleworkers at the international and federal levels to remove the uncertainty associated with their status and secure employee benefits.

- Modification of the existing immigration policy by lifting the visa requirement (TN visa) for skilled cross-border teleworkers (hybrid teleworkers) who occasionally cross the border as part of their professional duties.

- Cooperation of public authorities and representatives of corporations as well as cross-border remote workers to determine optimal solutions regarding intellectual property and data storage across borders, ensuring security while not limiting development

- Joint actions to strengthen the position of Cascadia as a global, high-tech, and attractive location for knowledge teleworkers from all over the world instead of growing competition between companies for Washington State and British Columbia.

REFERENCES

Agreement between the United States of America, the United Mexican States, and Canada. 2020. Office of the United States Trade Representative. https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between

Alper, Donald K. 1996. "The Idea of Cascadia: Emergent Transborder Regionalisms in the Pacific Northwest-Western Canada." Journal of Borderlands Studies 11 (2): 1–22. https://doi.org/10.1080/08865655.1996.9695488

Bergs, Rolf. 2012. "Cross-Border Cooperation, Regional Disparities and Integration of Markets in the EU." Journal of Borderlands Studies 27 (3): 345–63. https://doi.org/10.1080/08865655.2012.751710

Border Policy Research Institute. 2016. "Passenger Preclearance in the Pacific Northwest." 4. Border Policy Research Institute Publications. https://cedar.wwu.edu/bpri_publications/4

Border Policy Research Institute. 2019. "Passenger Flows through the Cascade Gateway: Changes from 2013 to 2018." 114. Border Policy Research Institute Publications. Bellingham. https://cedar.wwu.edu/bpri_publications/114

Border Policy Research Institute. 2020. "A Border Policy Framework for Safe Travel Between Canada and the US" 125. Border Policy Research Institute Publications. . https://cedar.wwu.edu/bpri_publications/125.

Brunet-Jailly, Emmanuel. 2006. "NAFTA and Cross-border Relations in Niagara, Detroit, and Vancouver." Journal of Borderlands Studies 21 (2): 1–19. https://doi.org/10.1080/08865655.2006.9695657

Brunet-Jailly, Emmanuel. 2008. "Cascadia in Comparative Perspectives: Canada-US Relations and the Emergence of Cross-Border Regions." Canadian Political Science Review 2 (2): 104–24.

Brunet-Jailly, Emmanuel. 2021. "US–Canada Border Cities and Territorial Development Trends." In Border Cities and Territorial Development, edited by Eduardo Medeiros, 209–27. London: Routledge.

Brunet-Jailly, Emmanuel. 2022. "Cross-Border Cooperation: A Global Overview." Alternatives: Global, Local, Political 47 (1): 3–17. https://doi.org/10.1177/03043754211073463

Burrows, Michael, Charlynn Burd, and Brian McKenzie. 2023. "Home-Based Workers and the COVID-19 Pandemic." US Census Bureau.

Canada-United States Convention with Respect to Taxes on Income and on Capital signed at Washington on September 26, 1980, as amended by the Protocols signed on June 14, 1983, March 28, 1984, March 17, 1995 and July 29, 1997. 1980. https://www.canada.ca/en/department-finance/programs/tax-policy/tax-treaties/country/united-states-america-convention-consolidated-1980-1983-1984-1995-1997.html

Cappellano, Francesco. 2019. "Cross Border Innovation Economies: The Cascadia Innovation Corridor Case." Border Policy Research Institute Publications 116. Bellingham, WWU: Border Policy Research Institute. https://cedar.wwu.edu/bpri_publications/116

Cappellano, Francesco, Kathrine Richardson, and Laurie Trautman. 2021. "Cross Border Regional Planning: Insights from Cascadia." International Planning Studies 26 (2): 182–97. https://doi.org/10.1080/13563475.2020.1779672

"Cascadia Innovation Corridor." 2018. 2018. https://connectcascadia.com/

Cassia, Fabio, and Francesca Magno. 2022. "Cross-Border e-Commerce as a Foreign Market Entry Mode among SMEs: The Relationship between Export Capabilities and Performance." Review of International Business and Strategy 32 (2): 267–83. https://doi.org/10.1108/RIBS-02-2021-0027

Castells, Manuel. 1989. The Informational City: Information Technology, Economic Restructuring and the Urban-Regional Process. Oxford: Blackwell.

Castells, Manuel. 1996. The Rise of the Network Society. Malden, Massachusetts: Blackwell Publishers.

CBRE. 2022. "Tech-30 2022. Measuring the Tech Industry's Impact on US & Canada Office Markets." CBRE Research. CBRE.

Choudhury, Prithwiraj (Raj), Cirrus Foroughi, and Barbara Larson. 2021. "WORK-FROM-ANYWHERE : The Productivity Effects of Geographic Flexibility." Strategic Management Journal 42 (4): 655–83. https://doi.org/10.1002/smj.3251

Clarke, Sean, and Vincent Hardy. 2022. "Working from Home during the COVID-19 Pandemic: How Rates in Canada and the United States Compare." Economic and Social Reports. Statistics Canada. https://doi.org/10.25318/36280001202200800001-eng

Cold-Ravnkilde, Signe Marie, Jaidev Singh, and Robert G. Lee. 2004. "Cascadia: The (Re)Construction of a Bi-national Space and Its Residents." Journal of Borderlands Studies 19 (1): 59–77. https://doi.org/10.1080/08865655.2004.9695617

Decoville, Antoine, and Frédéric Durand. 2019. "Exploring Cross-Border Integration in Europe: How Do Populations Cross Borders and Perceive Their Neighbours?" European Urban and Regional Studies 26 (2): 134–57. https://doi.org/10.1177/0969776418756934

Decoville, Antoine, Frédéric Durand, Christophe Sohn, and Olivier Walther. 2013. "Comparing Cross-Border Metropolitan Integration in Europe: Towards a Functional Typology." Journal of Borderlands Studies 28 (2): 221–37. https://doi.org/10.1080/08865655.2013.854654

Dewey Lambert, Patricia. 2021. "The Pacific NorthWest Economic Region: An Institutional Analysis of Effective Regional Governance." In Navigating a Changing World, edited by Geoffrey Hale and Greg Anderson, 285–312. University of Toronto Press. https://doi.org/10.3138/9781487537708-014

Digital Nomad Index. 2023. Circle Loop. https://www.circleloop.com/nomadindex
Dingel, Jonathan I., and Brent Neiman. 2020. "How Many Jobs Can Be Done at Home?" Journal of Public Economics 189 (September): 104235. https://doi.org/10.1016/j.jpubeco.2020.104235

Durand, Frédéric. 2015. "Theoretical Framework of the Cross-Border Space Production – The Case of the Eurometropolis Lille–Kortrijk–Tournai." Journal of Borderlands Studies 30 (3): 309–28. https://doi.org/10.1080/08865655.2015.1066701

Eurofund. 2020. "Living, Working and COVID-19: First Findings – April 2020." Dublin.
European Commission. 2023. "Framework Agreement on the application of Article 16 (1) of Regulation (EC) No 883/2004 in cases of habitual cross-border telework". https://ec.europa.eu/social/main.jsp?catId=868&langId=en

Finlayson J. 2021. The Work From Home Phenomenon - Will it Stick? Business Council of British Columbia 28(3): 1-6. https://bcbc.com/dist/assets/publications/the-work-from-home-phenomenon-will-it-stick/PPv28n3_2021-09-08-204122_pfwj.pdf

Friedman, Kathryn, Charles Conteh, and Carol Phillips. 2019. "CROSS-BORDER INNOVATION CORRIDORS: How to Support, Strengthen and Sustain Cross-Border Innovation Ecosystems." 42. NCO Policy Brief. Niagara Community Observatory.

Geurs K.T., Ritsema van Eck J.R. 2001. "Accessibility measures: review and applications. Evaluation of accessibility impacts of land-use transportation scenarios, and related social and economic impact." Bilthoven: National Institute of Public Health and Environment.

Gibbins, Roger. 1997. "Meaning and Significance of the Canadian American-Border." In Borders and Border Regions in Europe and North America, edited by Paul Ganster, Alan Sweedler, James W. Scott, and Wolf-Dieter Eberwein, 315–31. San Diego, Calif.: San Diego State University Press, Institute for Regional Studies of the Californias.

Główczyński M., "Toward User-Generated Content as a Mechanism of Digital Placemaking-Place Experience Dimensions in Spatial Media." International Journal of Geo-Information, 11(4), 261. https://doi.org/10.3390/ijgi11040261

Graham, Mark, and Mohammad Amir Anwar. 2019. "Labour." In Digital Geographies, edited by James Ash, Rob Kitchin, and Agnieszka Leszczynski, 177–87. Los Angeles: SAGE.

Grzegorczyk M., Nurski L., Schraepen T. 2022. Cross-border telework in the EU: fab or fad? Bruegel, https://www.bruegel.org/blog-post/cross-border-telework-eu-fab-or-fad

Haider, Murtaza, and Amar Iqbal Anwar. 2022. "The Prevalence of Telework under Covid-19 in Canada." Information Technology & People, March. https://doi.org/10.1108/ITP-08-2021-0585

Hartmann, Julia. 2019. “Digitalization and Regionalization.” https://www.hartmann-sustainability.com/post/part-3-trends-affecting-logistics-digitalization-and-regionalization

Hufbauer, Gary Clyde, and Gustavo Vega-Canovas. 2003. “Whither NAFTA: A Common Frontier?” In The Rebordering of North America. Integration and Exclusion in a New Security Context, edited by Peter Andreas and Thomas J. Biersteker. London and New York: Routledge.

ILO. 2020. “ILO Technical Note: Defining and Measuring Remote Work, Telework, Work at Home and Home-Based Work. COVID-19: Guidance for Labour Statistics Data Collection.” Geneva: International Labour Office.

Jakubowski, Andrzej. 2020. “Asymmetry of the Economic Development of Cross-Border Areas in the European Union: Assessment and Typology.” Europa XXI 39. https://doi.org/10.7163/Eu21.2020.39.6.

Jakubowski, Andrzej, and Piotr Wójcik. 2023. “Towards Cohesion at the Interface between the European Union States? Cross-Border Asymmetry and Convergence.” Regional Studies, April, 1–14. https://doi.org/10.1080/00343404.2023.2187767

Johnson, Mike. 2013. Teleworking. 0 ed. Routledge. https://doi.org/10.4324/9781315042718

Kitchin, Rob. 1998. Cyberspace: The World in the Wires. Chichester, West Sussex: Wiley.

Konrad, Victor, and Heather N. Nicol. 2008. Beyond Walls: Re-Inventing the Canada-United States Borderlands. Border Regions Series. Aldershot and Burlington: Ashgate.

Kotowski, Michael R., and Gildásio M. Dos Santos. 2010. “The Role of the Connector in Bridging Borders through Virtual Communities.” Journal of Borderlands Studies 25 (3–4): 150–58. https://doi.org/10.1080/08865655.2010.9695777

Leamer, Edward E., and Michael Storper. 2001. “The Economic Geography of the Internet Age.” Journal of International Business Studies 32 (4): 641–65. https://doi.org/10.1057/palgrave.jibs.84909988

Loucky, James, and Donald K. Alper. 2008. “Pacific Borders, Discordant Borders: Where North America Edges Together.” In Transboundary Policy Challenges in the Pacific Border Regions of North America, edited by James Loucky, Donald K. Alper, and J.C. Day, 11–37. Calgary: University of Calgary Press.

Lundquist, Karl-Johan, and Michaela Trippl. 2013. “Distance, Proximity and Types of Cross-Border Innovation Systems: A Conceptual Analysis.” Regional Studies 47 (3): 450–60. https://doi.org/10.1080/00343404.2011.560933

Maggioli, Rita. 2022. “Cross-Border Remote Work Is Trending and Europe Is the Top WFH Destination for IT Professionals.” Landing.Jobs (blog). 2022. https://landing.jobs/blog/cross-border-remote-it/

Manyika, James, Jacques Bughin, Susan Lund, Olivia Nottebohm, David Poutler, Sebastian Jauch, and Ramswamy Sree. 2014. Global Flows in a Digital Age: How Trade, Finance, People, and Data Connect the World Economy. McKinsey Global Institute. https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/global-flows-in-a-digital-age#

Migration Policy Institute. 2023. "Workforce: Washington," 2023. https://www.migrationpolicy.org/data/state-profiles/state/workforce/WA#

MOT. 2022. "Impacts Du Teletravail Frontailer. Le Télétravail Frontalier: De Marginal à Indispensable." Paris: Mission Opérationnelle Transfrontalière.

North American Agreement on Labor Cooperation. 1993. https://www.dol.gov/agencies/ilab/naalc

OECD. 2021. "Teleworking in the COVID-19 Pandemic: Trends and Prospects." OECD Policy Responses to Coronavirus (COVID-19). https://www.oecd.org/coronavirus/policy-responses/teleworking-in-the-covid-19-pandemic-trends-and-prospects-72a416b6/

Paasi, Anssi, and Kaj Zimmerbauer. 2016. "Penumbral Borders and Planning Paradoxes: Relational Thinking and the Question of Borders in Spatial Planning." Environment and Planning A: Economy and Space 48 (1): 75–93. https://doi.org/10.1177/0308518X15594805

Policy Horizons Canada. 2016. "Canada and the Changing Nature of Work." PH4-160/2016E-PDF. Ottawa.

Reitel, Bernard. 2007. "Are Cross-Border Urban Spaces European Integration Patterns at Local Level? Analysis of the Management of Urban Areas astride the "French Border"." In Borders of the European Union: Strategies of Crossing and Resistance.

Richardson, Kathrine. 2017. Knowledge Borders. Temporary Labor Mobility and the Canada-US Border Region. New Horizons in Regional Science. Cheltenham and Northampton: Edward Elgar. https://doi.org/10.4337/9781785369032

Richardson, Kathrine Eileen, and Francesco Cappellano. 2022. "Sieve or Shield? High Tech Firms and Entrepreneurs and the Impacts of COVID 19 on North American Border Regions." Journal of Borderlands Studies, February, 1–20. https://doi.org/10.1080/08865655.2022.2038230

Rzeszewski M. 2018. "Geosocial capta in geographical research – a critical analysis" Cartography and Geographic Information Science, 45(1): 18-30. https://doi.org/10.1080/15230406.2016.1229221

Saldanha, Alison. 2023. "How Tech Jobs in WA Are Growing despite Layoffs in Seattle Area." The Seattle Times. https://www.seattletimes.com/business/how-tech-jobs-in-wa-are-growing-despite-layoffs-in-seattle-area/

Schier, Dan. 2021. “Profile of the British Columbia Technology Sector: 2020 Edition.” Victoria: BC Stats.

Smith, Patrick J. 2004. “Transborder Cascadia: Opportunities and Obstacles.” Journal of Borderlands Studies 19 (1): 99–121. https://doi.org/10.1080/08865655.2004.9695619

Sohn, Christophe. 2014a. “Modelling Cross-Border Integration: The Role of Borders as a Resource.” Geopolitics 19 (3): 587–608. https://doi.org/10.1080/14650045.2014.913029

Sohn, Christophe. 2014b. “The Border as a Resource in the Global Urban Space: A Contribution to the Cross-Border Metropolis Hypothesis: The Border as a Resource in the Global Urban Space.” International Journal of Urban and Regional Research 38 (5): 1697–1711. https://doi.org/10.1111/1468-2427.12071

Standing, Guy. 2016. The Corruption of Capitalism: Why Rentiers Thrive and Work Does Not Pay. London: Biteback.

Statistics Canada. 2022a. “Labour Force Survey, June 2022.” https://www150.statcan.gc.ca/

Statistics Canada. 2022b. “Labour Market Bulletin - British Columbia: October 2022.” https://www.jobbank.gc.ca/trend-analysis/job-market-reports/british-columbia/bulletin

Taylor, Lawrence D. 2001. “Approaches to Building Cooperative Linkages in Human Resources Development in the San Diego-Tijuana and Vancouver-Seattle Binational Corridor Regions.” Journal of Borderlands Studies 16 (2): 41–69. https://doi.org/10.1080/08865655.2001.9695574

The Bureau of Economic Analysis. 2023a. “Digital Economy.” https://www.bea.gov/data/special-topics/digital-economy

The Bureau of Economic Analysis. 2023b. “ International Transactions, International Services, and International Investment Position Tables.” https://apps.bea.gov/iTable/?reqid=62&step=9&isuri=1&product=4

T-Net. 2021. “Cascadia Gateway Announces Construction and Financing Deal with Quanta for High Density Fiber Optic Network to Connect Vancouver and Seattle.” 2021. https://www.bctechnology.com/news/2021/3/30/Cascadia-Gateway-Announces-Construction-and-Financing-Deal-with-Quanta-for-High-Density-Fiber-Optic-Network-to-Connect-Vancouver-and-Seattle.cfm

Totalization Agreement with Canada. 1984. Social Security Administration. https://www.ssa.gov/international/Agreement_Pamphlets/canada.html

Trautman, Laurie. 2021. “Connecting Border Studies and Border Policy: Exploring the Canada–US Context.” Journal of Borderlands Studies 36 (5): 833–52. https://doi.org/10.1080/08865655.2021.1968925

Trautman, Laurie. 2022. “The Impact of COVID-19 Test Requirements on Cross-Border Travel: A Case Study of Blaine.” Border Policy Research Institute Publications. https://cedar.wwu.edu/bpri_publications/130

Trautman, Laurie, and Francesco Cappellano. 2019. “The Cascadia Innovation Corridor: Advancing a Cross-Border Economy.” 14. Border Policy Brief. Border Policy Research Institute.

Turner, Clara, Tobias Chilla, and Stefan Hippe. 2022. “Cross-border integration patterns in the context of domestic economic development : a case study of the Upper Rhine.” Europa XXI. https://doi.org/10.7163/Eu21.2022.43.2

UNCTAD. 2017. “Information Economy Report 2017. Digitalization, Trade and Development.” https://unctad.org/system/files/official-document/ier2017_en.pdf

UNECE. 2022. Handbook on Forms of Employment. Geneva: United Nations.

US Census Bureau. 2022. “Household Pulse Survey.” https://www.census.gov/data/tables/2022/demo/hhp/hhp48.html

US Citizenship and Immigration Services. 2023. “TN NAFTA Professionals.” https://www.uscis.gov/working-in-the-united-states/temporary-workers/tn-nafta-professionals

Vance, Annelise. 2012. “Crossing Bridges: Observations and Strategies by Cross-Border Business Communities in an Evolving Regulatory Environment.” 71. Border Policy Research Institute Publications.

Vancouver Economic Commission. 2023. “Technology.” 2023. https://vancouvereconomic.com/focus/technology/

Washington State Employment Security Department. 2022. “2021 Labor Market and Economic Report.” https://media.esd.wa.gov/esdwa/Default/ESDWAGOV/labor-market-info/Libraries/Economic-reports/Annual-Report/2021-labor-market-and-economic-report.pdf

WSDOT. 2020. “Cascadia Ultra High Speed Ground Transportation. Framework for the Future.” Washington State Department of Transportation.

Zook, Matthew. 2007. “The Geographies of the Internet.” Annual Review of Information Science and Technology 40 (1): 53–78. https://doi.org/10.1002/aris.1440400109

Zwaan, Jessica. 2022. “The Legal Implications of Remote Working Cross-Border.” 2022. https://jessicamayzwaan.medium.com/the-legal-implications-of-remote-working-cross-border-64904d274c0d

APPENDIX A: Interview questions

Q1. Introductory question: what is the type and (if applicable) size and a business sector of your organization?

Q2. How many of the company's employees work remotely while residing in Canada or vice versa? Please, describe how teleworking is organized? (company) | How do you assess the scale, dynamics and prospects of the cross-border telework market in the Cascadia region in general? (business organization, public administration)

Q3. What are the main drivers of employing teleworkers residing in Canada in your company? (company) | What are the main drivers of the development of cross-border teleworking in general? (business organization, public administration)

Q4. What are the main obstacles to employing teleworkers residing in Canada in your company? (company) | What are the main obstacles to development of cross-border teleworking in general? (business organization, public administration)

Q5. What was the role of the COVID-19 pandemic and related border restrictions on the use of cross-border teleworking in your company? ...the development of cross-border teleworking in the Cascadia region? Are these transformations likely to be long-lasting?

Q6. Does the US-Canadian national border create friction that makes teleworking more attractive?

Q7. What role do the different regulatory regimes in US and Canada play in the use of cross-border teleworking in your company? (company) | ...in the development of cross-border teleworking in the Cascadia region? (business organization, public administration)

Q8. What could be the potential impact of further development of cross-border teleworking on the use of transportation and border infrastructure by the employees in your company? (company) | ...in the Cascadia region in general? (business organization, public administration)

Q9. Does the further efficient development of cross-border teleworking in Cascadia need an appropriate policy agenda and efforts? if so, which ones and in which areas?