Mapping the Innovation Policy Preferences of Canadian ICT Firms

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Abstract:

Innovation policy has gained increased salience as a key feature of the Trudeau Government's approach to economic policy. Historically, Canadian political economists have emphasized the significant influence of private sector policy preferences in underpinning Canada's reliance on supply-side, indirect, and non-targeted innovation policies, such as research and development tax credits. These preferences were informed by Canadian industry's technologically dependent, branch-plant status within American-dominated supply chains. Rapid changes have occurred in the innovation policy subsystem since these seminal studies, such as the growth of homegrown Information Communication Technology (ICT) firms. Little is known about how the innovation policy preferences of this new generation of domestic technology firms compares with research on the preferences of private sector actors from previous eras. To address this gap, this paper performs a qualitative mapping of the policy preferences of 44 domestic 'scale-up' firms, drawing on semi-structured interviews conducted between April 2018 and April 2019 with members of the Council of Canadian Innovators. These interviews provide a window into the innovation policy preferences of Canadian scale-ups who are actively engaged in Canada's innovation policy process. Results reveal that these firms prefer demand-side, direct, and targeted instruments more often than expected given the literature's depiction of historic business interests as preferring supply-side, indirect, and neutral innovation policies. This paper's contribution to developing a more nuanced view of the innovation policy preferences of Canada's private sector is particularly relevant given the federal government's renewed commitment to changing Canada's innovation policy.

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1. INTRODUCTION

Scholars of Canadian political economy have long identified business interests as an influential force in shaping Canada's innovation and industrial policy (Williams, 1983, Atkinson & Coleman, 1989, Smardon, 2014). Focusing primarily on the innovation policy preferences of technologically-dependent, branch plant sectors such as manufacturing, these studies found that businesses prefer a limited, 'market-oriented' role for the state in supporting innovation through supply-side, indirect and neutral instruments (Smardon, 2014). In contrast, this paper examines the innovation policy preferences of a newly-formed coalition of domestic technology firms who prefer a more active role for the state in the form of demand-side, direct, and targeted innovation instruments. This paper examines the following research question**:** how do 'scale-up' members of the Council of Canadian Innovators define their innovation policy preferences compared with expectations of private sector innovation policy preferences in the existing literature? The need for an updated, nuanced understanding of the landscape of private sector innovation policy preferences is particularly acute given the federal government's current efforts to overhaul federal innovation policies (ISED, 2019).

Section 2 will contextualize the research question in the underdeveloped literature on the role of business interests in Canada's innovation policy process. Specifically, section 2.1 will situate Canada's 'market-oriented' approach to innovation policy in comparative context based on the typology of innovation policies that distinguishes demand-side versus supply-side investments, direct versus indirect instruments, and targeted versus neutral recipients. For context, section 2.2 will highlight the inability of Canada's 'market-oriented' innovation policy to alter the firm-level dynamics underpinning Canada's 'low-innovation equilibrium.' Section 2.3 will distill from this literature the prevailing view that Canadian business interests prefer a 'market-oriented' approach to innovation policy consisting of supply-side, indirect, and neutral instruments. Section 3 will outline the methodology employed in generating the sample of 44 domestic 'scale-up' ICT firms, conducting the interviews, coding the transcripts, and analyzing the data for policy preferences. Section 4 discusses the findings, with firm preferences mapped along the three dimensions of demand-side/supply-side, direct/indirect, and targeted/neutral instruments. The interviewees expressed a desire for a more active role for the state in supporting domestic innovation through demand-side, direct, and targeted instruments. This preference set is opposite of previous eras where branch plant, manufacturing business interests preferred the more 'market-oriented' policy approach of supply-side, indirect, and neutral instruments (Smardon, 2014). This is a significant contribution given the causal role attributed to business preferences in explanations of why Canada has relied so heavily on supply-side, indirect, and neutral innovation policies in the face of lackluster business innovation results (Smardon, 2014). This paper's findings add nuance to the understudied role of private sector policy preferences in the larger debate over the determinants of Canada's innovation policy process.

2. CONTEXT & RESEARCH QUESTION

2.1 *Canada's 'Market-Oriented Approach' to Innovation Policy*

Formulating innovation policy involves choosing between three types of instruments: supply-side versus demand-side, direct versus indirect, and neutral versus targeted (Edler, Abdullah, Cunningham, & Shapira, 2016; Nicholson, 2018). Figure 1 summarizes and combines the various typologies of innovation policy instruments available in the literature (Edler, Abdullah, Cunningham, & Shapira, 2016). Compared to other countries, Canada's innovation policy is described as "an exemplary exponent of the neo-liberal policy paradigm" due to its longstanding "market-oriented approach" to incentivizing private sector innovation (Nicholson, 2018, p 27). This "market-oriented approach" has long favoured supply-side investments, delivered via indirect policy instruments, which are employed in a neutral fashion (Nicholson, 2018, p. 28). Inputs to the innovation process have been prioritized, with supply-side investments in firm-level Research and Development (R&D) and university funding for basic research far outweighing policies designed to incentivize demand for innovative products, such as procurement and regulatory standards (Nicholson, 2018). Firm-level innovation supports have long been skewed towards indirect instruments such as tax credits as opposed to direct-to-firm grants, with the Federal government's Scientific Research & Experimental Development (SR&ED) tax credit representing between 74 and 90 percent of total Federal government innovation spending each year since 2000 (OECD, 2019). Finally, Canada's innovation policy has employed its supports in a neutral fashion, primarily through R&D tax credits for any firm that conducts R&D, regardless of sector and firm-type. The remainder of this subsection will elaborate on this typology of innovation policy instruments, which will serve as the conceptual framework for the rest of the paper's analysis of the innovation policy preferences of Canadian 'scale-up' firms.

Figure 1: Taxonomy of Firm-level Innovation Policy Instruments

Firm-level Innovation Policy Instruments*	Policy Decisions			Canada	
	Supply-side or Demand-side	Direct or Indirect	Neutral or Targeted	Pre-Trudeau (pre 2015)	Trudeau Initiatives (2015-present)
Tax incentives for R&D	Supply	Indirect	Neutral	-SR&ED Tax Credits	
Direct support – grants for firm R&D and innovation	Supply	Direct	Both	-IRAP grants; -SDTC grants; -SADI/AIF/ASIP grants	-Increased IRAP & SDTC funding -Strategic Innovation Fund -Innovation Superclusters Initiative -CanExport grant
Technical services and advice	Supply	Direct	Both	-NRC research labs -Trade Commissioners Service -IRAP consultations	-Increased IRAP funding -Accelerated Growth Service
Policies to support collaboration, clusters, and networks	Supply	Both	Targeted	-IRAP -CAIP -NCE	-Innovation Superclusters Initiative -Pan-Canadian Artificial Intelli-gence Strategy
Public procurement policies	Demand	Direct	Targeted	-BCIP	-Innovative Solutions Canada
Innovation Inducement Prizes	Demand	Direct	Targeted		-Smart Cities Challenge

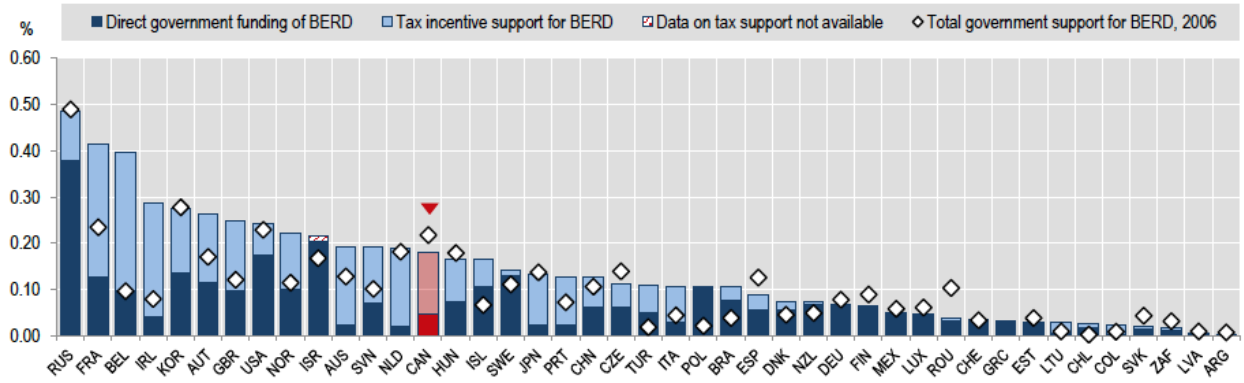
*Adapted from: (Edler, Abdullah, Cunningham, & Shapira, 2016). Acronyms: BDC (Business Development Bank of Canada); SR&ED (Scientific Research & Experimental Development Tax Incentive); IRAP (Industrial Research Assistance Program); SDTC (Sustainable Development Technology Canada); SADI (Strategic Aerospace and Defence Initiative); AIF(Automotive Innovation Fund); ASIP (Automotive Supplier Innovation Program); NRC (National Research Council); CAIP (Canada Accelerator and Incubator Program); BCIP (Build in Canada Innovation Program); NCE (Network of Centres of Excellence)

The first distinction is whether innovation policy instruments invest in the supply-side or the demand-side of the innovation process. Supply-side investments are programs that offset the cost of inputs to the firm-level innovation process, such as research and development (R&D), skills investments, and technical services and advice (Edler**,** Abdullah, Cunningham, & Shapira, 2016). For instance, most OECD countries employ a mix of direct grants and indirect tax credits aimed at reducing the cost borne by firms who engage in R&D (Edler**,** Abdullah, Cunningham, & Shapira, 2016). Often times states will structure supply-side programs to encourage collaboration among firms and academic researchers, organized in geographic clusters and networks. In contrast, demand-side investments attempt to stimulate the demand for innovative products. For example, states can harness their procurement power to create

demand for innovative products (Edquist, Vonortas, Zabala-Iturriagagoitia, & Edler, 2015). States can also employ non-direct (non-firm-level) interventions such as offering consumer incentives or setting regulatory standards in a manner that increases demand for certain innovative products (Edler**,** Abdullah, Cunningham, & Shapira, 2016: Meckling & Nahm, 2018). State's decisions to incentivize innovation inputs versus demand is informed by their diagnoses of the gaps in the system of innovation, as well as interpretations of how specific tools will influence the behaviour of program recipients (typically private firms) (Nicholson, 2018).

The second distinction is whether innovation instruments are direct-to-firm supports (ex: grants and services) or attempt to indirectly influence firm-level behavior (ex: tax incentives). Pierre Mohnen has summarized the choice between direct versus indirect instruments as follows: "the choice between tax incentives and direct support hinges on what is considered to be more important: to have as much neutrality as possible and let the private sector decide which research projects should be pursued, or to proactively discriminate between projects and have the State decide which projects ought to be supported in priority" (Mohnen, 2018, p. 71). Highlighting the political dimensions, Mohnen emphasizes the need to determine whether "the State [has] the capacity and the mandate to choose which among many promising projects ought to be supported first" (Mohnen, 2018, p. 71). Despite momentum towards tax credits by OECD countries, on average, the innovation policy of these advanced economies rely on direct policy instruments, such as grants, loans, and procurement more so than on indirect policy instruments, such as R&D tax credits (OECD 2018a; see figure 2). This reflects the longstanding reliance on direct measures by innovative nations such as the United States, Germany, Korea, and Israel (Weiss 2014; OECD 2018a).

Figure 2: Direct Government Funding of Business R&D and Tax Incentives for R&D, 2016 (nearest year) As a Percentage of GDP



Source: (OECD, 2019)

Finally, a third distinction involves the choice between employing *neutral* policies available to all sectors and firms versus employing *targeted* supports to specific sectors/technologies/firms. The latter approach involves policies that target specific technologies/sectors/firms, often through direct instruments such as grants and public procurement. Alternatively, policymakers can employ a neutral, non-targeted approach of offering universal tax credits for any business that conducts research and development (R&D). Many countries have employed policy mixes of direct and indirect, as well as demand and

supply-side policies in a *targeted* manner, employing many instruments in efforts to support the development of *specific* sectors and technologies. Innovation scholars have emphasized the ability of innovation policymakers to proactively select different pathways to economic development (Breznitz 2007; Ornston 2012; Weiss 2014). The innovation policy literature highlights many examples of small countries strategically targeting support to secure competitive advantage in high-technology segments of global production networks, such as Finland with mobile communication (Ornston 2012), East Asian countries with biotechnology (Wong 2011), Israel with information communication technologies, and Taiwan with semiconductor manufacturing (Breznitz 2007). Strategic targeting of policy support has also been shown to underpin the innovation success of larger, supposedly 'liberal market economies' such as the United States, whose direct military research grants were instrumental in fueling the Information Technology revolution (Mazzucato, 2013; Weiss, 2014; Taylor, 2016; Vogel, 2018).

2.2 Lackluster Results: Canada's Structural 'Low Innovation Equilibrium'

Canadian innovation policy has produced lackluster results, as measured by widening gaps between Canadian businesses and competitor countries' innovation metrics, including Business Expenditure on R&D (BERD), large scale global firms, firm-level productivity, investments in digital technology, and exports (Nicholson, 2018; Wolfe, 2019). Canada's 'market-oriented approach' to innovation policy has failed to break Canada's private sector from its 'low innovation equilibrium' where profitability has not required investments in innovation (Nicholson, 2018; CCA, 2013). Nicholson succinctly summarizes the problem as follows: "So there is really no mystery why Canada is rated an innovation laggard among the advanced economies. Canadian business, in the aggregate, has behaved rationally in acquiring innovation from the world leader and next-door neighbour — in effect, a "buy versus make" decision — and has been only as innovative as it has needed to be. It is as simple as that" (Nicholson, 2018, p. 19). Nicholson's use of the phrase 'low innovation equilibrium' echoes the Council of Canadian Academies' report *Paradox Lost: Explaining Canada's Research Strength and Innovation Weakness:*

> "Canadian business has prospered in its chosen niche. Aggregate profitability ratios have matched or exceeded those in the United States. With little motivation to change a successful formula, many firms have settled into a "low-innovation equilibrium" that has conditioned business habits and ambitions, and shaped the predominant business culture in Canada" (CCA, 2013, p. 29).

This profitability has been linked to structural features of the Canadian economy, where "Canada's comparative advantage has for generations been as an upstream supplier of both commodities and cost-competitive manufactured products in highly integrated value networks largely dominated by U.S. firms" (The Council of Canadian Academies, 2013, p. 29). This branch-plant, 'low innovation equilibrium' is reflected in firm-level innovation decisions. To wit, Canadian business expenditure on R&D (BERD) has been in decline from 1.25 percent of GDP in 2001 to 0.82 percent of GDP in 2016, resulting in Canada falling to 22nd in the OECD (ISED, 2019). Furthermore, Canadian business productivity has "lagged far behind that of the United

States, falling from 95 percent of the US level in the mid-1980s to about 75 percent currently" (Nicholson, 2018, p. 19). Canadian industry's lack of innovation has been attributed to the legacy of Canada's branch-plant model of industrialization (Williams, 1983; Smardon, 2014). Bruce Smardon traces this technological dependency and lack of innovative business strategies through Canadian industrial history, from the early twentieth century Fordist era to the period of post-Fordist neoliberal restructuring from the 1970s to the end of the 1990s. Specifically, Smardon asserts that the US branch-plants that were established during the Fordist era were characterized by managers who were not empowered by their US headquarters to conduct extensive R&D. Smardon illustrates how this technological dependency persisted through the period of 'post-Fordist neoliberal restructuring' despite arguments that opening to free trade would boost competitiveness, productivity and innovation of Canadian firms. Smardon notes that "the previous legacy of dependent technological development meant that, with a few exceptions, Canadian manufacturing capital lacked a strong capacity to engage in new areas of innovation-based export growth" (Smardon, 2014, p. 100).

Smardon attributed the sustained policy failure to successive federal governments overemphasizing the innovative ambitions of Canada's private sector (Smardon, 2014). The Federal government's supply-side emphasis on investments in basic research commercialization efforts falsely "assumed a private sector that was primed to increase its commitment to R&D and innovation to a major extent if only state institutions and programs were restructured in appropriate ways" (Smardon 2014, p. 365). This supply-side, tax-credit strategy ignored the fact that "dependent technological development was built into the strategies of accumulation pursued by Canadian industry" (Smardon, 2014, p. 330).

A significant structural element of Canada's low innovation equilibrium is its inability to produce 'scale-up' firms in high technology sectors like ICT. This paper defines scale-ups as small-and-medium sized firms with revenues at or exceeding $10M. Birch et al. (1995) find that scale-up firms have a disproportionate impact on job creation. Sometimes called 'high-growth' firms, more recent research (Tencer 2018) corroborates this finding in both Canada and the United States. Scale-ups in the US account for 28 percent of private sector employment and in Canada they show the strongest revenue growth of any sized firm (43% increase from 2001-2013). Yet, despite a favorable environment for startups, Canadian firms have been unable to reach scale-up or high-growth status. Data show that less than 3 percent of Canadian service firms beyond the five-year mark qualify as "high-growth" (Deloitte 2011).[1] The issue appears to be that Canadian firms fail to sustain their high growth rates as they mature, particularly when compared to other advanced industrial countries (Deloitte 2012). If anything, the number of scale-up candidates is decreasing. Research from the Business Development Bank has found that the number of Canadian mid-sized firms (with between 100 and 499 employees) declined by 17 per cent between 2006 and 2010 (BDC 2013). The Ontario Chamber of Commerce finds that "while Canadians may have greater opportunities to start a business, the next generation of large and globally competitive Canadian firms has not materialized" (2016). Structural impediments to 'scaling up' have been identified, including improper incentive structure,

[1] Deloitte uses the OECD definition of a high-growth firm: annualized growth in employees (or turnover) that exceeds 20 percent per year, over a three-year period, and with 10 or more employees at the start of observation period.

inadequate government support, and a lack of availability to long-term finance (Ontario Chamber of Commerce 2016; Advisory Council on Economic Growth 2017).

2.3 Research Gap: How Do Domestic ICT 'Scale-ups' Define their Innovation Policy Preferences?

This paper examines the following research question**:** how do 'scale-up' members of the Council of Canadian Innovators define their innovation policy preferences compared with expectations of private sector innovation policy preferences in the existing literature? This is an important, yet understudied question because firm preferences for innovation policy have long been a central explanation for the puzzle of Canada's continued reliance on 'market-oriented' tax credits despite long-standing evidence of their ineffectiveness at breaking the 'low innovation equilibrium' (Williams, 1983; Atkinson & Coleman, 1989; Smardon 2014; Nicholson, 2019). Canadian industry's innovation policy preferences have been historically described as follows:

Indirect (R&D tax credits) > direct policy instruments (grants, services)
Supply-side (R&D tax credits) > demand-side (procurement, competition)
Neutral (R&D tax credits) > targeted investments (targeted by sector or firm-type)

Smardon asserts that Canadian businesses have historically favoured weak industrial policy with the goal of continental integration emphasized over domestic innovation (2014). Smardon links this set of laissez-faire innovation policy preferences to Canadian industry's structural technological dependence as follows:

> "the context of dependent technological development… was central in shaping the response of private capital to the various incentive programs and informing the views of the representatives of private capital concerning what should be done. Because of the historical legacy of dependent technological development, Canadian domestic capital did not, for the most part, have a substantial connection to the domestic creation of new technologies. With specific exceptions, such as Nortel and Research in Motion, it avoided entering fields of manufacturing production involving heavy new expenditures on innovative capacities. As a result, domestic capital in the manufacturing sector was not oriented toward using the various federal incentive programs as a means of building industries that rested on novel technologies. There was also little support within domestic capital for federal strategies that…altered the dominant position of American transnational capital in research-intensive areas, or were focused on forms of state-led restructuring of the organizational context of innovation in the Canadian economy" (Smardon, 2014, p. 17).

The durability of Canada's innovation policy approach in the face of lackluster results has been attributed to the policy influence of Canada's branch-plant capitalist class, who preferred 'neo-liberal' and 'market-oriented' innovation policies, such as indirect, supply-side, and neutral tax credits (Smardon, 2014):

> "[For] over fifty years of federal R & D policy from the early 1960s to the early 2010s, the class power of capital continued to be exercised to move

> federal policies in a direction that would support its accumulation interests. This was particularly true of the focus on tax credits, which provided major subsidies to capital without requiring any change in its underlying approach to organizing R&D and innovation in the Canadian economy" (Smardon, 2014, p. 388).

Smardon relies primarily on historical documents and interviews with policymakers to illustrate how domestic and foreign business interests influenced policymakers in different eras to eschew more direct and targeted innovation policies designed to alter Canada's structural technological dependence in favour of free trade and laissez-faire innovation policy. Smardon notes that "there is little evidence that [Canadian high-tech companies] formed a politically organized segment of capital that was pushing for broad-based nationalist industrial strategies designed to increase the domestic basis of technological development" (Smardon, 2014, p. 293).

Smardon does not employ firm-level interviews to probe the motivations for why domestic technology firms pursue innovative strategies, as well as how they conceptualize the role of government in supporting domestic innovation. This type of research is increasingly needed given that the last decade has witnessed the flourishing of a homegrown ICT sector in Canada, with scale-up firms emerging in large clusters like Toronto, Waterloo, Ottawa, Montreal, and Vancouver (Wolfe, 2019). Many of these domestic ICT firms have coalesced behind a set of policy preferences that runs counter to Smardon's portrayal of business interests from previous eras. In 2011, the Federal government appointed the "Jenkins Panel," consisting of Canadian technology CEOs to review Canada's innovation policy (Government of Canada, 2011). The Jenkins Panel signaled a shift in private sector innovation policy preferences towards demand-side, direct, and targeted instruments. The panel's preference for direct and targeted measures called for the government to "rebalance the mix of direct and indirect funding by decreasing spending through the SR&ED program and directing the savings to complementary initiatives strategically focused on serving the needs of innovative Canadian firms" (Government of Canada, 2011, p. 6.4). The Panel called for more direct funding (IRAP, BDC) and demand-side procurement innovation programs (Sulzenko, 2016). The Panel concluded that government's focus should be "to strategically target efforts to support the growth of innovative firms into larger enterprises… thereby allowing… the country's business sector to achieve the scale required to become an innovation leader on the world stage" (2011, p. 7-8). The Jenkins Panel recommendations "essentially sought to transfer resources from the SR&ED tax credit to direct R&D and other program support that could more effectively target high-growth SMEs" (Sulzenko, 2016, p. 10). Preferences for demand-side (procurement), direct (grants), and targeted (to high-growth firms) innovation policy have also been communicated in the 2018 report by the 14 Canadian ICT firms sitting on the federal government's Digital Industries Economic Strategy Table (ISED, 2018).

The 5 years following Smardon's 2014 book also witnessed the rise of new domestic ICT firms and lobby groups, whose innovation policy preferences for demand-side, direct, and targeted do not fit the historical pattern of business interests he described. For example, the emergence of the Council of Canadian Innovators (CCI) adds a countervailing voice to the dominant branch-plant private sector interests of earlier eras:

> "Founded in September 2015 [by Research In Motion co-founder Jim Balsillie and OMERS Ventures CEO John Ruffalo], The Council of Canadian Innovators is the 21st century business council uniquely made up of CEOs from Canada's fastest growing technology companies and is exclusively focused on helping high-growth Canadian technology firms scale-up globally…[and] ensuring Canadian tech leaders and public-policy leaders are working together to shape Canada's innovation agenda" (Canadian Council of Innovators, 2019).

The CCI members interviewed for this paper articulate preferences for altering the structural impediments to domestic technology scale-ups through demand-side, direct, and targeted policies. This runs counter to Smardon's description of the more laissez-faire orientation of branch-plant business interests in previous eras. This is a significant finding given the dearth of literature on the innovation policy preferences of high-growth, domestically-headquartered Canadian ICT firms who are actively engaged in the innovation policy process. Neither historical nor contemporary innovation policy preferences of Canadian ICT firms have ever been systematically studied through firm-level interviews. Previous work relied on policymaker interviews and focused on the policy preferences of foreign-owned subsidiaries and Canadian-controlled firms in the manufacturing sector (Williams, 1983; Atkinson & Coleman, 1989; Smardon, 2014). Therefore, this paper's surveying of the policy preferences of this new generation of domestic ICT scale-ups adds a novel perspective to scholarship on the role of the firm in Canada's innovation policy process (Smardon, 2014).

Finally, this same period saw the beginning of a shift in federal innovation policy, with the Trudeau Government attempting to shift Canada's innovation policy mix towards a more active role for the state in shaping innovation-based economic growth (ISED, 2017; ISED, 2019). Specifically, the government has introduced new programs that employ more *direct*-to-firm instruments, *targeted* at specific sectors and types of firms, with a focus on *demand-side* investment (ISED, 2019, also see figure 1 above). This contrasts with Canada's thirty-year tradition of relying on *indirect* tax credits, applied in a neutral manner to any company that performs R&D. Gauging the degree to which this shift was prompted by business interests is an important task for future research, given the theoretical prominence given to business influence in previous scholarship on the determinants of Canada's innovation policy in previous eras (Smardon, 2014). However, before future research can assess the policy influence of business preferences, a more nuanced understanding of the landscape of business interests vis-a-vis innovation policy needs to be attained. This paper's qualitative mapping of the policy preference of domestic ICT scale-ups is an important step in this inquiry as it illuminates the policy views of a hitherto understudied cohort within Canadian political economy.

3. METHOD

3.1 Sample & Interview Questionnaire

This paper draws on interviews with CEOs of member-firms from the Council of Canadian Innovators (CCI). These firms are, by nature of their CCI membership, scale-up firms, according to this paper's minimum threshold definition of a scale-up (minimum of $10M in

revenue). From July 2018 to October 2019, the author and colleagues from the University of Toronto's Innovation Policy Lab interviewed 44 CEOs (approximately half of the total membership). Semi-structured interviews explored their views regarding access to capital, markets, and talent (see appendix 2). The questions ask about a variety of opinions regarding these three categories, but this paper focuses explicitly on CEOs' policy views. As a business council consisting of policy-conscious members, I am conscious of certain selection biases in the answers we explore. CEOs of domestic ICT scale-ups will be more active advocates for industrial policies and other program supports than you would expect to find among CEOs not belonging to a politically active group. What I am most interested in is in the specific kinds of policies they advocate for and why they are preferred. Furthermore, I consider whether the policy preferences of scale-up firms align with the empirical expectations defined by the literature. As I will show, there is a disconnect between what the literature suggests and what these scale-up firms prefer. Table 3 shows the attributes of the 44 firms sampled. The average revenue exceeds $50M CAD, although this is skewed by a few high-revenue companies. Few firms employ less than 50 employees or more than 200. Most have somewhere between 50 and 200. Most of these firms offer ICT software products and have been founded in the last decade.

Figure 3: Firm Attributes

REVENUE	
Average Revenue	$68,153,571
Median Revenue	$15,000,000
Number of Firms with Revenue Unassigned	16
Number of Firms with Revenue over 50 Million	6
EMPLOYEES	
Average Employees	235
Median Employees	95
Number of Firms with Employees Unassigned	3
Number of Firms with Employees over 50	32
Number of Firms with Employees over 200	9
AGE	
Average Year Founded	2007
Median Year Founded	2009
LOCATION	
Number of Firms Located in Toronto	17
Number of Firms Located Outside Toronto	27

3.2. Coding of semi-structured interviews:

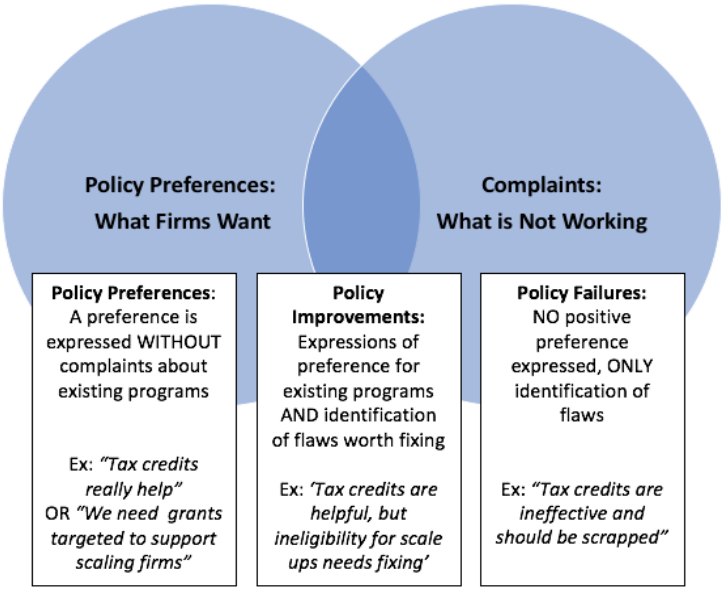
The transcripts of semi-structured interviews were analyzed using the qualitative data analysis (QDA) software program Nvivo (Deterding & Waters, 2018). Interview questionnaires were semi-structured to enable open ended answers to general questions probing the role of government in supporting innovation. Interview transcripts were analyzed to map the views expressed by ICT firms in their discussion of the appropriate role of government in supporting innovation. Firms' views were coded according to preferences for specific programs as well as the general problem definitions/policy rationales used to justify government intervention. The categories of policy preferences were selected according to the three major types of innovation

policy: supply-side versus demand-side, indirect versus direct, and neutral versus targeted (Edler, Abdullah, Cunningham, & Shapira, 2016). Transcript excerpts were coded as "Preferences: What Firms Want" wherever an interviewee expressed a positive sentiment (preference/desire/approval) about a certain type of government policy. Similarly, the same policy categories were used to code 'Complaints: What is Not Working' whenever an interviewee expressed negative sentiment (flaw/frustration/disapproval) about a certain type of government policy.

3.3 Analysis

Applying the same node hierarchy of types of innovation policies (indirect/direct, supply-side/demand-side, and neutral/targeted) enables evaluation of expressions of 'policy preferences' (what firms want) and 'policy complaints' (what isn't working). This involves sum totals for expressions of preferences and complaints for each category, as well as sum totals of how many individual firms expressed preferences and complaints for each category. This yields insight into both how popular a sentiment was overall, and how many individual firms expressed a given sentiment (see figure 5 in the results section). In addition, using the same typology of innovation policies to code preferences and complaints enables analysis of desired areas for 'Policy Improvement', where a firm spoke positively about the promise of a policy while also citing complaints/areas for improvement (see figure 6 in the results section). The analysis stage identified these preferences for 'policy improvements' by counting the number of overlapping coding of 'preference' and 'complaint' for a given policy type (see figure 4).

Figure 4: Analysis Combining Preferences and Complaints



4. RESULTS: Firm Preferences for Demand-side, Direct, and Targeted Innovation Policies

Firms stated preferences for demand-side, direct, and targeted instruments more often than expected given the literature's depiction of historical business interests as preferring supply-side, indirect, and neutral innovation policies (Smardon, 2014). Instead, preferences for more active innovation policy that shifts the structural framework of the 'low innovation equilibrium' contrast with the historical preferences of branch-plant manufacturers described by Smardon (2014). Figure 5 illustrates these findings. For each policy type and subcategory, the columns display the overall number and percentage proportion of statements of preference and complaint, as well as the number and percentage proportion of distinct firms expressing those sentiments. As the table illustrates, preferences were concentrated in demand-side policies like Procurement and Regulation & Competition, supply-side investments at the firm-level like R&D costs and Talent, supply-side investments at the system-level in the Talent Pipeline, direct instruments like Grants and Services, and policies targeted specifically to Scale-ups. These preferences were popular both by total number of statements and by number of distinct firms who stated them.

Figure 5: Preferences and Complaints, By Type of Innovation Policy

Preferences and Complaints, By Type of Innovation Policy									
		Number of Statements				Number of Firms			
		Preferences		Complaints		Preferences		Complaints	
		What Firms Want		What is Not Working		What Firms Want		What is Not Working	
DEMAND-SIDE	Procurement	78	8%	66	11%	28	64%	27	61%
	Regulation & Competition	75	8%	65	11%	26	59%	26	59%
SUPPLY-SIDE	R&D Costs	73	8%	42	7%	36	82%	27	61%
	Talent	82	9%	31	5%	38	86%	18	41%
	Technology & Equipment	9	1%	7	1%	6	14%	5	11%
	Financial Ecosystem	24	3%	22	4%	16	36%	14	32%
	Incubators & Accelerators	9	1%	10	2%	7	16%	8	18%
	Talent Pipeline	59	6%	40	7%	31	70%	20	45%
	University Research	26	3%	19	3%	15	34%	14	32%
DIRECT	Grants	94	10%	61	10%	38	86%	28	64%
	Loans	34	4%	19	3%	20	45%	14	32%
	Services	91	10%	42	7%	30	68%	20	45%
INDIRECT	Tax Credits	49	5%	34	6%	31	70%	26	59%
NEUTRAL	Neutral	9	1%	22	4%	6	14%	14	32%
TARGETED	Domestic	55	6%	7	1%	23	52%	6	14%
	Foreign	1	0%	48	8%	1	2%	18	41%
	Scale ups	116	12%	20	3%	33	75%	14	32%
	Start ups	8	1%	15	3%	7	16%	9	20%
	Sector	39	4%	19	3%	22	50%	13	30%

Complaints were concentrated in largely the same policy areas as preferences, most frequently stated as a desire for policy improvement, with firms lamenting policy shortcomings in types of policies that they preferred. Figure 6 illustrates the amount of times firm's comments were coded as overlapping complaints and preferences, shown in the 'Preference & Complaint' column. These are instances where firms expressed desire for a 'policy improvements' (the center part of the Venn diagram in Figure 4). Demand-side policies like Procurement and Regulation & Competition were most commonly discussed as 'policy improvements', with firms often lamenting the lack of effectiveness of current approaches. Supply-side policies like R&D Costs and Talent were discussed in both strictly positive sentiments as well as in terms of desired 'policy improvements', with firms expressing preference for funding programs that offset costs of R&D and personnel and also highlighting areas for improvement. This same pattern is seen for preferences for direct Grants and Services as well as indirect Tax Credits. There is a distinct lack of overlap on the neutral/targeted dimension, with statements of preference for targeted programs for Scale-ups rarely being simultaneously coded as a complaint. This reflects firm's desire for novel scale-up-targeted programs amidst a current program landscape that lacks these types of programs. This contrasts with discussion of demand-side/supply-side and direct/indirect, where existing programs were often preferred and complained about simultaneously ('policy improvements'). Finally, neutral policy approaches and policies that were perceived to target Foreign firms were discussed in a purely negative manner as 'not working', with no positive preference or desire for 'policy improvement' stated. The next three sections of the paper will explore in more detail

these high-level findings across the three policy distinctions of demand-side/supply-side, direct/indirect, and targeted/neutral.

Figure 6: Statements of Preference Only, Preference & Complaint, and Complaint Only

Statements of Preference Only, Preference & Complaint, and Complaint Only, By Type of Innovation Policy				
		Preference Only	Preference & Complaint	Complaint Only
		What Firms Want	Policy Improvements	What is Not Working
DEMAND-SIDE	Procurement	13	65	1
	Regulation & Competition	15	60	5
SUPPLY-SIDE	R&D Costs	43	30	12
	Talent	57	25	6
	Technology & Equipment	4	5	2
	Financial Ecosystem	11	13	9
	Incubators & Accelerators	8	1	9
	Talent Pipeline	28	31	9
	University Research	14	12	7
DIRECT	Grants	51	43	18
	Loans	19	15	4
	Services	60	31	11
INDIRECT	Tax Credits	33	16	18
NEUTRAL	Neutral	9	0	22
TARGETED	Domestic	53	2	5
	Foreign	1	0	48
	Scale ups	102	14	6
	Start ups	8	0	15
	Sector	28	11	8

4.1. Demand-side & Supply-side Investments

Of the 153 preferences stated for demand-side policies, 78 were related to a desire for government to stimulate demand for firm-level innovation through public procurement and 75 were preferences for using regulation as a demand-side pull for innovation. In contrast, there were 273 preferences stated for supply-side investments, with the most popular being firm-level supports for talent (82), firm-level R&D costs (73), system-level investments in the talent pipeline (59), system-level investments in university research (26), system-level investment in incubators (9), and firm-level investment in technology and equipment (9). Preferences for demand-side policies were stronger than expected given the literature's portrayal of businesses primarily desiring minimally-intrusive incentives for supply-side inputs such as R&D (Smardon, 2014). Furthermore, supply-side policies are naturally more likely to be discussed given emphasis on supply side investments in Canada's current innovation policy mix (Nicholson, 2018). What is most striking is the lack of 'complaint only' responses for both demand-side policies of procurement and regulations (see Figure 6). This means that firms predominantly expressed a 'policy improvement' perspective, typically desiring changes to Canada's procurement and regulatory policies to more effectively harness their market-shaping, 'demand-pull' potential for supporting innovation. This stands in contrast to preferences for supply-side investments in R&D costs and talent, which were more evenly split between preferences and desires for 'policy improvements.'

Procurement was one of the most preferred innovation policies. Respondents often described the value of procurement as more of a benefit to firm-level innovation than supply-side tax incentives and grants, conceptualizing this benefit in terms of a preference for the government acting as a 'customer' rather than a source of incentives. One CEO noted, "give us a vehicle to interact with [public organizations] we'd actually think that is more valuable than just getting the straight capital on our balance sheet... [we] solve a real problem instead of an implied one. We always have to dream up the problem with IRAP. Programs are more supply than demand driven." Firms reported the value of government sales revenue in increasing a firm's ability to attract capital from investors and boost their ability to attain subsequent exports due the government acting as a 'reference customer': "there is a signaling aspect of it that is absolutely critical when it comes to some of these technologies because that's the way the game is played." Procurement was desired beyond just the 'first customer' stage: "I would do something similar to what the U.S. does, that at all levels of government, a certain percentage, about 2% or so, of their spending should have to go to Canadian organizations for real projects, not for pilot projects. The current program we have in place is limited to only pilots. Pilots don't help companies get references that they can use to sell to additional clients," said one interviewee. Finally, firms who prefer government procurement have an overlapping complaint about foreign firms being preferred in Canada (13 overlapping nodes). These sentiments are further described in section 4.3 in regards to preferences for policies targeted to Scale-ups.

Regulation and competition were often preferred as mechanisms to alter the structural impediments to growth for domestic scale-ups. Firms expressed a desire for the government to regulate more competition into the banking sector to make them more willing to purchase from and lend debt financing to technology firms. Preferences for 'regulations & competition' overlapped with preferences for 'financial ecosystem' 9 times. Another popular category included calls to re-work or create novel regimes for the protection of Intellectual Property (IP). Firms expressed desires for restricting the approval process for foreign acquisition and university IP arrangements, often citing the winner-take-all dynamic of powerful foreign technology firms absorbing Canadian-generated IP. Finally, the desire to change regulations governing procurement processes to support domestic firms is evidenced by the 15 overlapping preferences for Procurement and Regulation & Competition. Firms also expressed desires for the government to be more strategic in crafting standards and regulations so as to create markets for scale-up firm' products, through close collaboration with firms in the regulatory process. For example, one cleantech firm lamented the fact that US environmental regulators were more engaged in creating markets for their technology through emission standards than Canadian regulators. Relatedly, firms valued the services of the Standards Council of Canada in protecting product niches in foreign multinational-dominated international standard-setting bodies. These preferences for the state to alter the structural framework of the 'low innovation equilibrium' are notably less laissez-faire than the historical preferences of branch-plant manufacturers described by Smardon (2014).

Firms valued supply-side investments that provided non-dilutive capital for talent and R&D. Preferences for SR&ED praised it for offsetting the firm's talent costs, with 14 overlapping preferences for 'talent' and 'tax credits.' Similarly, statements of preference for 'talent' were also often overlapping with preferences for 'grants' (20) and 'services' (25), with firms

appreciating provincial and federal grants that offset salary costs (such as MITACS) and R&D costs (such as IRAP). Preferences for supply-side, direct-to-firm service programs were also frequently praising IRAP. Talent preferences were typically positively referencing the Global Skills Strategy immigration service. A significant number of firms expressed desire for policy improvements in streamlining the application process for supply-side programs related to R&D costs (30) and talent (25). These firms often desired changes to eligibility for SR&ED tax credits, IRAP grants, and hiring incentive programs, raising employee and revenue caps to ensure continued eligibility as firms scale up. Beyond a preference for investments in the talent pipeline of post-secondary training, there were relatively few preferences stated for other supply-side programs aimed at the system-level, such as funding for university research.

4.2. Direct > Indirect Policy Instruments

Support for direct funding was a common theme running throughout the interviews, with 94 preferences for direct grants, 91 for direct services, and 34 for loans. Compared to indirect support (65 preferences), direct support, specifically grants, is a more popular and desired policy instrument. Given Canada's long-standing preference for indirect support in the form of tax credits (usually to offset the costs of R&D, e.g., SR&ED), this is notable. Interviewees spoke positively of policies like SR&ED in helping their firms in the early days of growth and for effectively subsidizing employment in smaller firms, but for scaling-up or maintaining scale, there is a clear preference for direct policy supports. Firms that prefer direct policy support also complain about tax credits (15 overlapping preferences/complaints) and, relatedly, about neutral government supports (11). "When it comes to scaling a company, it's pretty clear: it's not tax credits. If you're trying to grow something really successful, and accumulating tax credits for down the road when you may not make it , it is not doing you any good. You need capital to grow," said one respondent.

Overlapping preferences and complaints for direct grants (43) often desired a more streamlined process for grant approval, along the lines of IRAP. Regarding direct support, grants were the most popular overlapping preference (31), followed by services (15), such as trade commissioner support or program coordination (such as better IRAP support, advice, and guidance), and loans (5). Exploring responses matching this overlapping preferences reveals an alarming sense of frustration at the ability for Canadian scale-ups -- firms which have already proven they have a viable business model, marketable product or service, and stable revenue -- to get funding for business expansion or product development and commercialization. It is not that firms think federal or provincial grants do not work. Firms recognize that federal and provincial grants are preferred. Positive evaluations can be read about Ontario's Scale-up Voucher, grants from the Ontario Centres of Excellence (esp. Regarding autonomous vehicles), and NRC-IRAP grants.

4.3. Targeted > Neutral

As argued above, there has been a long-held belief in the Canadian public policy literature that business interests prefer neutral policy supports, rather than an interventionist government that 'picks winners' by targeting direct support to specific firms or industrial

sectors (Smardon, 2014). However, this paper's interviewees expressed a strong preference for innovation policies that were targeted directly at scale-up firms (116), rather than those targeted by sector (39) or offered more widely in a neutral fashion (9). While this preference for targeted supports may seem obvious and rational, the long-standing belief is that Canadian business thinks the best government is one that stays out of the way (Smardon, 2014). Therefore, interviewee's preferences for targeted supports to domestic scale-ups are notable in that they buck the historical trend of laissez-faire innovation policy preferences of Canadian businesses.

Said one respondent, "I don't find [indirect policy supports] the most strategic. They are trying to take a resource and spread it really thin [...] and therefore no-one can get tactical benefits. It's a ubiquitous Canadian problem; we don't make bets." Another firm noted that the government's Supercluster Initiative did not go far enough in concentrating support to Canadian scale-ups, arguing the government ultimately fell back into the pattern of 'spreading the peanut butter too thin'. "Maybe initially the thought was -- correctly – 'Let's not spread the peanut butter so thin. Let's actually try to stand up like world-leading units.' But then, that went down a layer and they spread it thin anyways [by picking] ten cities that are geographically spread out and then further allocating funding from the city into RICs [Regional Innovation Centres]." Another respondent was more direct, saying "We have to pick a couple of industries. We don't have the ability to take our limited capital and spread it across a large war front. We have to be very, very selective as to what part of the line we're going to breach." Interviewees frequently root these preferences for targeted supports in the need to respond to Canada's structural position as a small country in an oligopolistic global ICT sector.

Interviewees expressed overlapping policy preferences for targeted support with preferences for demand-side and direct supports (see Appendix 1). Regarding demand-side support, the most commonly cited was government procurement (23 references) followed by talent (22), R&D costs (15), and regulation and competition (11). On the last item, this usually meant the government intervening through stricter foreign acquisition and IP rules to 'level the playing field' vis-à-vis multinational firms.

Firms also frame their disadvantage vis-à-vis foreign multinationals as structural when discussing direct grants and demand-side procurement, because either their firm cannot spare the resources necessary to navigate a procurement Request for Proposal (RFP) or because of unequal scrutiny to prove their firms' products have a viable market fit. Firms complain that direct grants to attract foreign direct investment need to take into account the structural power differential between foreign and domestic firms in the winner-take-all market structure of the technology industry. One quote highlights both this frustration and, relatedly in this case, the need for government to support equal access to scarce management talent that can support scale-ups:

> "Stop encouraging the FANG [Facebook, Amazon, Netflix, Google] companies to come to Canada, because when they come they are not [helping the ecosystem]. No one is going to be worried about hiring the architects and the developers. There are lots and we can use immigration to fill the void [anyway]. It's on the senior management level. We don't have many in Canada. We really, really don't. And each time you bring in a FANG company and they suck up a few of those, that's it…So, [the government] has to kind of stop doing that."

A common complaint among Canadian scale-ups is that government grants for clusters and research consortiums are designed without domestic firms in mind -- often eliminating them for consideration by design. This was noted with regards to the Evolution of Networked Services through a Corridor in Québec and Ontario for Research and Innovation (ENCQOR). Reported one ICT firm working on 5G wireless technologies:

> "As soon as I saw the announcement [for ENCQOR inclusion), I picked up the phone and called the OCE [and] all the other guys and said, "What is going on here? Is there a position for us to participate in this 5G network as a Canadian company?" [...] The answer to me was, "Well, you could go and participate by talking to Ciena and Ericsson [foreign MNCs involved]." I said, "Well, we're competing with them and [it ended there]."

This quote reflects a popular frustration that supposedly neutral policy approaches vis-à-vis innovation policy function to 'tilt the playing field' in favour of large multinational firms, stemming from policymaker's ignorance of the structural power imbalances facing Canadian firms in competition with large ICT multinationals.

6. Conclusion

The 44 domestic 'scale-up' ICT firms interviewed in this paper want a more active role for the state in shifting the structural impediments to domestic innovation through demand-side, direct, and targeted instruments. This is a stark departure from historical patterns of laissez-faire preferences of branch-plant business interests, who rarely preferred policies that challenged the "dominant position of American transnational capital in research-intensive areas, or were focused on forms of state-led restructuring of the organizational context of innovation in the Canadian economy" (Smardon, 2014, p. 17). The qualitative mapping of these views adds valuable nuance to existing literature on the innovation policy preferences of Canadian business, revealing a more varied and contested landscape of business interests. Future research will utilize these interviews as a window into the coalition-formation process, reporting on the role played by the Council of Canadian Innovators in catalyzing the formation of a coalition of firms sharing a set of innovation policy preferences unique from those of branch-plant firms and other ICT firms. While the orientation of this new coalition's policy preferences runs counter to Smardon's description of business interests from previous eras, his overall contention that innovation policy is shaped by business interests may remain unchallenged. This paper sets the groundwork for future contributions to debates on the role of 'Advocacy Coalitions' in the policy process (Sabatier & Jenkins-Smith, 1993; Weible & Sabatier, 2017), as well as the ongoing debate over the sources of influence in Canada's innovation policy process (Atkinson & Coleman, 1989; Smardon, 2014).

Appendix 1: Statements of Overlapping Preferences, By Type of Innovation Policy

Statements of Overlapping Preferences, By Type of Innovation Policy

			PREFERENCES: WHAT FIRMS WANT																			
			DEMAND-SIDE		SUPPLY-SIDE							DIRECT			INDIRECT	NEUTRAL	TARGETED				
			Procurement	Regulations & Competition	R&D Costs	Talent	Technology & Equipment	Financial Ecosystem	Incubators & Accelerators	Talent Pipeline	University Research	Grants	Loans	Services	Tax Credits	Neutral	Domestic	Foreign	Scale up	Start up	Sector
PREFERENCES: WHAT FIRMS WANT	DEMAND-SIDE	Procurement																			
		Regulation & Competition	15																		
	SUPPLY-SIDE	R&D Costs	7	3																	
		Talent	0	4	20																
		Technology & Equipment	1	0	6	2															
		Financial Ecosystem	0	9	5	5	0														
		Incubators & Accelerators	0	0	5	3	1	1													
		Talent Pipeline	0	5	4	39	1	3	1												
		University Research	0	0	13	3	3	0	2	8											
	DIRECT	Grants	8	3	37	20	8	4	2	10	10										
		Loans	1	3	5	1	4	7	1	0	0	10									
		Services	4	11	15	25	2	4	6	9	4	25	13								
	INDIRECT	Tax Credits	4	4	38	14	1	4	2	3	0	12	1	4							
	NEUTRAL	Neutral	0	0	6	3	0	0	0	2	0	0	0	0	7						
	TARGETED	Domestic	13	10	7	9	3	2	1	14	6	16	4	14	1	0					
		Foreign	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1				
		Scale ups	23	11	15	22	4	6	1	22	8	42	12	30	7	1	51	1			
		Start ups	1	0	3	1	0	0	0	1	0	3	1	3	1	1	1	0	6		
		Sector	8	6	8	1	2	1	1	4	3	14	5	10	2	1	8	0	13	2	

Appendix 2: Interview Questionnaire

The Scale-up Experience
Innovation Policy Lab
Munk School of Global Affairs and Public Policy

The objective of this study is to gain a more nuanced understanding of how Canadian technology scale-ups fit into the larger discussion of Canada's long-term economic prospects. Successfully scaled firms are the focus of this study. We ultimately want to know what challenges have scale-up firms encountered while growing? How do they view the role of government in supporting (or not) scale-ups? Accordingly, we have crafted a questionnaire in accordance with the Council of Canadian Innovators's three priorities for scale-up firms. That is, access to talent, markets, and capital.

By systematically collecting qualitative experiences from Canadian scale-ups and augmenting them with empirical research of the impact and relative importance of scale-ups on Canada's economy, we aim to generate a nuanced picture of three things: 1) What is a scale-up, and what is it like to scale a technology firm in Canada? 2) What government programs are effective in supporting firm growth and where are the policy gaps or mismatches? 3) What is the long-term impact of scale-ups on Canada's economic prosperity -- now and in the future? We will use these findings to work with the Council of Canadian Innovators to advise innovation and economic development policies and support programs for scaleup firms.

Markets

1. What is the overall proportion of your sales or source of revenue from the home market versus markets abroad? What proportion of your sales are to private sector clients versus public sector clients?
2. What is in the rate of growth in your sales over the last five years: from abroad versus at home?
3. What have been the main barriers to the growth of your firm? How have you been able to surmount or overcome them?
4. What is your market access strategy? Do you utilize resellers?
5. Is the public sector a target market? If so, have you been successful?
    a. Are there any barriers to your company obtaining access to government procurement?
    b. Have you leveraged existing government procurement programs in Canada to grow your company? Were they helpful?
6. Have you pursued markets outside of North America?
    a. Have you used gov't resources to facilitate international expansion?
7. Have you undertaken strategic co-development with key customers? Who are your reference customers?

Talent

1. What is the open headcount at your company?
    a. How many are technical versus non-technical jobs?
    b. How many hires do you plan on making in the next 1-2 years?
2. Where do you recruit?
    a. Have you used recruiters
3. How long, on average, does it take you to fill vacancies?
4. Do you feel the postsecondary educational institutions are meeting the skill needs of your company?
    a. Do you have access to the best talent graduating from Canadian universities?
    b. Are there any specific mismatches between skills brought by new graduates and those needed by businesses?
5. Do Canada's personal taxation rates or other tax policies help or hinder your company in hiring?
6. Have you been able to recruit talent from outside the country, including the US?
    a. Have you hired people back from the US?
7. Do you use any government programs to help you recruit?
    a. Are you aware of the federal government's Global Skills Strategy program?
        i. Have you used it? Which category (A and/or B)?
    b. Are there specific subcategories of technical or managerial HR requirements that you need to successfully scale your firm? Can you find the talent that you need?
8. Do you have talent retention challenges?
    a. Are you losing more talent than you are bringing in?
    b. In specific categories: management, technical, marketing, sales, design.

Capital

1. How are you financed? (self-financed, VC, PE, etc.)
    a. Do you offer employee stock options?
    b. Do you have an employee equity plan?
2. Can you access the working capital that you need to grow your company?
    a. What is the source of the working capital?
    b. What assets do you need to provide or demonstrate to access capital?
3. What are the factors that determine where you raise capital?
4. What's your horizon on a liquidity event?
5. Are you trying to grow your company through acquisitions?
    a. If so, how are you financing those acquisitions?
6. How are your intangible assets valued?
    a. Will a bank finance your company if you mostly have intangible assets?
    b. What proportion of your assets are intangible?
7. Which type of policy approach is more effective in supporting Canadian scale-ups: tax-based policy supports such as SR&ED or more direct supports such as IRAP, Mitacs, and other programs?

IP Strategy (Markets 2)

1. Does your company have an IP strategy?
2. How many patents does your company hold?
3. Did you collaborate with local research institutions, such as universities or community colleges?
    a. If so, how effective was this collaboration?
4. What other strategies does your company employ to increase your freedom to operate?
5. Do you have technology or products that can be certified by international standards setting bodies?
    a. Have you worked with the standards Council of Canada?

Government Support

1. Is the government supporting your investments in innovation?
    a. If so, how?
    b. If not, what should be done about that?
2. What policy measures have been most helpful in supporting your firm's growth and innovation strategy?
    a. Do you see a different role for tax-based policy supports such as SR&ED versus direct supports such as IRAP, Mitacs, and other programs?
3. What role do companies play in influencing policy?
    a. [If appropriate] Does the government actively seek your input? If so, do you think your input affects policy-making?
4. Which stakeholders do you think have significant influence driving innovation policy?

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