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THE GLOBAL INNOVATION CLUSTERS: CANADIAN EXPERIENCE OF PUBLIC-PRIVATE PARTNERSHIP

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Purpose of the article is the research of the modern trends of global innovation clusters development in Canada that based on public-private partnership model, and to identify their features during last years. The hypothesis is that it is possible to formulate the hypothesis that at the postwar period, Ukraine would form a new innovation strategy that will push country to become global competitively and innovatively. The methods of scientific research were applied to research the global innovation system of Canada and the development of Canada's superclusters: theoretical generalization, empirical method and methods of statistical analysis. The supercluster is a new initiative promoted by the Canadian federal government to strengthen Canada's most promising clusters and allow innovative firms to operate more productively in sourcing inputs and accessing information, knowledge, and technology. The Innovation superclusters have many positive characteristics as a new framework to rethink Canada's innovation strategy based on public-private partnership model. The specific measures for development of industrial clusters in Ukraine at the postwar period, and elaboration of national strategy for the development of innovation system in Ukraine can be research objects in future research.

Keywords: public-private partnership, innovation, cluster, supercluster, Canada, innovation system, university, project.

Formulation of the problem

Canada has a long history of public-private partnership spending on research and development and trying to capitalize on the commercial potential of scientific discoveries made in the country. In the 1980s, many in Quebec (for example, Marcel Côté at SECOR) advocated a cluster approach to economic development [21]. More recently, the concept was a focus of discussion in Canada as BlackBerry's fortunes declined, impacting Waterloo, Ont., and the sustainability of its leading engineering and IT activities. And it has almost as long a history of coming up with government schemes intended to overcome those problems and turn Canada into an innovation nation.

The concept of cluster development has been around for quite a few years. Countries around the world have upped their game on cluster development:

– many states in the USA have pursued a M. Porter-type approach to clusters, recognizing that the activities of Silicon Valley and the northeast corridor represent 25 % of USA gross domestic product. Silicon Valley is a well-known and envied example of a highly efficient and productive cluster with the fundamental role of Stanford University and the University of California, Berkeley. Researchers and students created spinoffs and start-ups, and went back and forth between private enterprises and the universities [6];

– in the European Union, cluster development has a long history, with a range of initiatives in different countries and a secretariat imbedded in the European Commission. In Norway, it has created

national, regional, and local cluster initiatives. Other cluster examples include Eindhoven in the Netherlands, with Philips at its center.

Analysis of recent research and publications

Theoretical aspects and empirical researches of clusters have long been a strong interest within the scientific community and among policy-makers:

1) A. Marshall emphasized the importance and advantages of geographical proximity for economic growth in reducing transportation and other transaction costs in his book "Principles of Economics" (1890) [21];

2) M. Porter [29; 30] introduced the idea of clusters in 1990 and defined an industrial cluster as a group of geographically relocated, interconnected firms and organizations within a sector that share common elements and are complementary to each other;

3) other researchers have been given to this local concentration of enterprises, skills, cooperation and competition, including regional systems of innovation [14; 23], flexible specialization [15; 28], smart specialization [2; 16] and industrial districts [8].

M. Porter defines a cluster as "a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" [29]. There is usually a formal or semi-formal organization that coordinates the cluster, allowing leaders to meet and to discuss issues and strategies. Actors within the cluster will often work on collaborative projects. Around the cluster a specialized labour-force will develop, key physical infrastructure will be built, and educational and research institutions will adapt their curricula and focus in order to respond to industry needs.

The cluster concept is a guiding paradigm linking innovation and economic development that has been fully integrated into economic and political thinking [25; 26]. These concepts all focus on:

– the importance of geographical proximity, which allows trust-building among stakeholders and access to a highly specialized labour force. Reducing the distance of interactions improves coordination between members of the cluster and facilitates the sharing of tacit knowledge gained through experience or shared expertise [3; 17]. But geographical proximity is by no means essential when knowledge is exchanged more formally [14];

– firms that operate in clusters are more innovative than firms that operate in isolation. They generate more patents and have greater employment and revenue growth, partly due to specialization or diversification effects [5; 7; 11];

– universities as integral parts of clusters increases the propensity of small, local firms to patent and that of universities to coevolve along with local, private sector patenting [2; 10; 20].

Formulation of hypothesis and goal setting

The goal of the article is the research of the modern trends of global innovation clusters development in Canada that based on public-private partnership model, and to identify their features during last years. Based on the latest research and publications related to this topic, it is possible to formulate the hypothesis that at the postwar period, Ukraine would form a new innovation strategy that will push country to become global competitively and innovatively.

Research methods

To research the global innovation system of Canada and the development of Canada's superclusters, the methods of scientific research were applied (theoretical generalization, empirical method and methods of statistical analysis).

Presenting main material

The Innovation Superclusters Initiative, that announced in 2018 by Government of Canada [19], is one of the most recent of public-private partnership schemes with a budget of 950 mm CAN over 5 years. The idea was to replicate the success of well-known clusters around the world, such as California's Silicon Valley or the United Kingdom's Catapult Network, by encouraging closer collaboration between businesses, academic institutions and non-profits in specific areas, focused on industries in which Canada already had some competitive advantage. In other worlds, innovation superclusters initiative is a "Made in Canada" approach.

The Government of Canada often refers to superclusters as “bigger” and “more connected” clusters [19]. J. Knubley [21] presents the initiative in a similar way by emphasizing that superclusters, in addition to being a brand that the government is trying to promote, reflect the ambition to go beyond cluster activities usually restricted to specific urban areas and rather encompass broader industrial, economic, and geographical considerations. C. Beaudry and L. Solar-Pelletier [6] suggested that superclusters as presented are rather akin to innovation ecosystems, as the superclusters’ interorganizational networks tend to extend beyond industrial and geographic boundaries and to include a wider range a nonprivate economic actors.

Thus, the innovation supercluster is meant to strengthen Canada’s innovation capacity and competitiveness on global markets and it incorporates a strong regional orientation: “the Government of Canada is working with industry in new ways – trough a public-private partnership model – to align the efforts of diverse industries, researchers and intermediary institutions, and build deep, ecosystem-level advantages in regions across Canada” [19].

As the goal of the superclusters is not to advance research, but to commercialize it and create new products, it wasn’t initially obvious how universities and industry would collaborate in the program. For longer term period, the national objectives of Superclusters are (1) create world-leading innovation ecosystems, (2) increase collaboration, (3) increase competitiveness, productivity and economic growth, and (4) enhance technological capabilities and commercialization (Fig. 1).

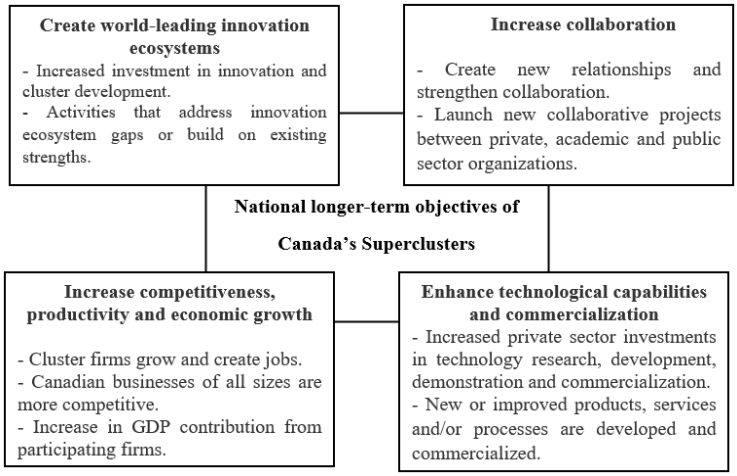

Fig. 1. The National Objectives of Canada’s Superclusters for longer term

Source: elaborated by author based on [19].

Such projects of public-private partnership – involving multiple companies, university researchers and innovation accelerators – are a good example of how the superclusters can bring together different groups to help drive innovation. The nature of so much research now is public-private (multi-institutional) partnerships: large and small companies, researchers and academics, not-for-profit organizations, accelerators and incubators, and government (Fig. 2).

Universities are often identified by scholars and policy makers [9; 13; 22; 24] as the most important actors, at least when it comes to the development of more fundamental knowledge. In the supercluster framework, these institutions are expected to play a key role:

– the educational and scientific research activities of universities (especially in universities with more resources) predominantly impact the innovativeness of firms that are co-located and with which universities share frequent interactions [22; 24];

– not all firms equally benefit from interactions with knowledge institutions: largest firms are more likely to cooperate with universities and research institutes because they have a high level of resources allowing them to integrate and apply scientific knowledge effectively [9];

– the real effect of universities' involvement on firms' innovativeness in the context of superclusters may not transcend regional borders, and the policy does not seem to tackle the question of whether smaller firms will effectively benefit from university-generated knowledge externalities during their product development phase [13].

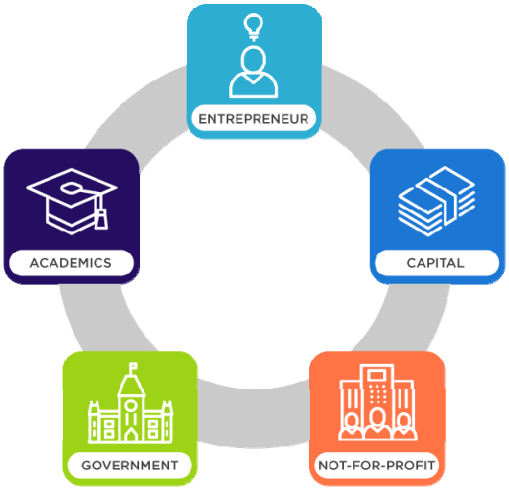

Fig. 2. The Actors of Public-Private Partnership in Superclusters

Source: [19].

Consequently, universities have a fundamental role in both the creation and the activities of the superclusters. Superclusters help bridge that and help them connect with external actors in a more efficient way through collaborative R&D projects. There are a lot of researchers in universities creating software that is absolutely ready to be implemented. Part of the decision to focus Scale AI on applying artificial intelligence to supply chains was that there were already several top-notch academic researchers focused on supply-chain issues in Montreal. Around 83 % of the cluster's projects include university partners. Thus, there is less of a gap between research and operations.

The activities of superclusters are expected to be centered around four key strategic priorities [19]:

(1) attract cutting-edge research, investment, and talent;

(2) increase R&D and technological activities;

(3) support entrepreneurship and support the commercialization of new products, processes, and services with the objective of scaling-up existing firms;

(4) foster a critical mass of firms and strengthen collaborations between private, academic, and public sector organizations.

The rationale behind the superclusters is to build on the advantages of existing clusters and to transform them into "innovation hotbeds with stronger connections, a long-term competitive advantage, global brand recognition, and more generally to generate job creation and economic growth" [19].

Thus, clusters help by: (1) connecting hundreds of partners and collaborators to solve industry-level challenges that affect them all, such as developing strong supply chains or managing data; (2) attracting talent, research, capital and new companies by helping to establish Canada as a world-leader; (3) innovating in the global marketplace with new products and processes; (4) growing more productive industries, healthier ecosystems, more jobs and success for firms across industries; (5) empowering small and medium sized companies to grow faster, tap into expertise, find new markets and access intellectual property.

Five superclusters were selected in 2018 by the federal government through a selection process where more than 50 applications from across the country were submitted. These superclusters are:

– Advanced Manufacturing, based in Ontario, focuses on next-generation manufacturing and on technologies to advanced manufacturing capabilities. The Program Streams of AM Supercluster are: High Potential Technology Development (developing and scaling new technologies with significant commercial

potential), Ground Breaking Process Transformation (adopting advanced technologies to transform existing manufacturing processes), Technology Diffusion (expanding the user base for new and unique applications of technologies developed in Canada), Ecosystem Development (support for training, collaboration, and the development of tools and test beds), SME Capacity Building (strengthening and scale up for SME partners) and COVID-19 Response;

– Digital Technology Supercluster, based in British Columbia, aims to bring new technologies such as augmented reality and cloud computing to sectors such as health care, manufacturing and natural resource development. The Program Streams of DT Supercluster are: Precision Health (data driven innovation to enable delivery of precision health services and technologies), Digital Twins (industrial cyber-physical interfaces to enable virtual production environments), Data Commons (data aggregation across various resources to enable collaborative new approaches to working with large data sets), Capacity Building (increase diversity of the region's STEM workforce and up-skill workers as they transition away from traditional industry) and COVID-19 Response;

– Ocean Supercluster, based in Atlantic Canada, is involved in ocean technologies and focused on marine industries such as aquaculture, transportation, and oil and gas exploration. The Program Streams of this Supercluster are: Ocean Sensing and Characterization (collaborative R&D projects to develop improved, reliable and scalable technologies for short-term/long-range ocean ecosystem), Operational Intelligence (develop monitoring observatories with real-time data integration), Data Analysis and Visualization (develop and advance digital twin concepts for use across ocean industries; and develop intelligent, highly automated technology in harvesting) and Innovation Ecosystem (support projects that will foster partnerships and facilitate interactions);

– Protein Industries Canada, based in the Prairies, deals with plant-based protein alternatives and is involved in technologies processing crops into plant-based ingredients and food. The Program Streams of PI Supercluster are: Create (focuses on improving seed protein quality and yield to manufacture products and co-products), Grow (uses smart and sustainable production methods to increase farm productivity and improve integration within the supply chain), Make (advances novel process technology and product development for further processing of crops) and Sell (focuses on developing and serving new markets);

– Scale AI, based in Quebec, is focused on using artificial intelligence to improve supply chains for transportation logistics and health. The Program Streams of this Supercluster are: AI Adoption (drive adaptation and adoption of AI-powered, intelligent supply chain solutions across a variety of sectors), AI Commercialization (develop, industrialize and commercialize AI-powered products and services applied to advanced supply chains management), Scale-up (support start-ups and SMEs scale-up by providing access to different programs and supports), Current and Future Workforce Development (introduce a series of training and upskilling programs for cluster members in an effort to bolster the level of AI/digital) and COVID-19 Response.

These superclusters have their own area of focus and are anchored in different technologies, not in sectors directly. Each of these superclusters is geographically based in different parts of Canada, including British Columbia, the Prairies, Ontario, Québec, and Atlantic Canada (Fig. 3).

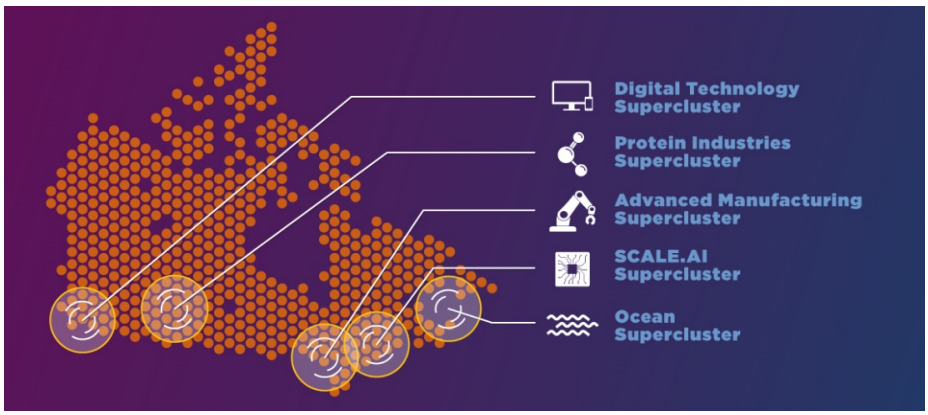

Fig. 3. Geography located the five Clusters in Canada

Source: [33].

When the government announced that there would be five Clusters, it signaled that the intention was to ensure each region in the country would get its own cluster, rather than selecting locations solely on merit. It became a beauty contest for who was the best in each region, and every prospective cluster made sure they had members region-wide. Also, the government essentially created five regional agencies to disburse money in a cool way.

Each of the five Superclusters is an independent, not-for-profit entity focused on a particular industry sector with their own membership rules and guidelines for selecting and funding projects. In addition, each Supercluster has a set of different programs, each with its own goals and criteria (Table 1).

Table 1

The five Innovation Superclusters of Canada

Name of Clusters	Location	Objectives	Total funding	Main technologies	Partners
1	2	3	4	5	6
Advanced Manufacturing	Ontario	will build next-generation manufacturing capabilities, incorporating technologies like advanced robotics and 3D printing.	Up to 250 mm CAN	Internet of things, machine learning, cybersecurity and additive manufacturing such as 3D printing.	AUTODESK; CLEARPATH; LINAMAR; MYANT; Waterloo
Digital Technology	British Columbia	will use bigger, better datasets and cutting-edge applications of augmented reality, cloud computing and machine learning to improve service delivery in the natural resources, precision health and manufacturing sectors	Up to 173 mm CAN	Virtual, mixed and augmented reality, data collection and analytics, and quantum computing	BOEING; Deloitte; D4WAVE; Microsoft; TELUS
Ocean	Atlantic Canada	will harness emerging technologies to strengthen Canada's ocean industries, industries like marine renewable energy, fisheries, aquaculture, oil and gas, defence, shipbuilding and transportation	Up to 173 mm CAN	Digital sensors and monitoring, autonomous marine vehicles, energy generation, automation, marine biotechnology and marine engineering technologies.	Cuna del mar; Emera; PALaerospace; SMARTICE; Dalhousie University
Protein Industries	Prairies	will use plant genomics and novel processing technology to increase the value of key Canadian crops, such as canola, wheat and pulses that are coveted in high-growth foreign markets, such as China and India, as well as to satisfy growing market demand	Up to 173 mm CAN	Agri-food enabling technologies, including genomics, processing and information technology	AGT; MAPLE LEAF; DOW DU PONT; DOT; ROQUETTE

Продовження табл. 1

1	2	3	4	5	6
		in North America and Europe for plant-based meat alternatives and new food products			
SCALE AI	Quebec and spanning the Quebec-Windsor corridor	will bring the retail, manufacturing, transportation, infrastructure and information and communications technology sectors together to build intelligent supply chains through artificial intelligence and robotics	Up to 230 mm CAN	Artificial intelligence and supply chain technology	ALDO; BOG; CGI; Cisco; Intel; Pwc; Shopify

Source: elaborated by author based on [1; 12; 18; 19; 27; 31; 32]

From funding to expert advice to driving new collaborations, innovation programs and services are designed to help businesses innovate, create jobs and grow Canada's economy. The initiative was to be given almost 1 bn. CAN, with the expectation that each cluster would at least match their funding with contributions from companies in their industry. According to the last updated (30.06.2022), the Superclusters can be characted by the numbers: 495+ approved projects, 2 320 project partners (more than 50 % are SMEs), 2.21 bn. CAN co-invested with industry, 7 500 members across Canada and 855 new IP rights generated [18]. Each Superclusters can be characted by the numbers for the last updated (30.06.2022):

– Advanced Manufacturing is the largest of the five networks, with 3 100 members (about 2 000 members are businesses and associations), one-third of which are based outside Ontario and the vast majority of which are SMEs, and has almost 167 projects in train, valued at about 605 mm CAN [1]. Also, there expected economic impact – more than 13,5 bn. CAN in GDP and the job creation – more than 13 500 jobs over 10 years;

– Digital Technology Supercluster has established a network of 1 000 members, more than 365 organizations involved in projects, 60 % of the projects are British Columbia-based companies, and the portfolio of 80+ projects with a total value over 350 mm CAN [12]. Also, there expected economic impact – more than 5 bn. CAN in GDP and the job creation – more than 13 500 jobs over 10 years;

– Ocean Supercluster is a network with 360 members, 40 % of which are outside Atlantic Canada, ad has 49 projects approved, valued at close to 250 mm CAN [27]. Also, there expected economic impact – more than 14 bn. CAN in GDP and the job creation – more than 3 000 jobs over 10 years;

– Protein Industries Canada has established a network of 257 organizations, has partnerships with the Global Institute for Food Security at the University of Saskatchewan, the University of Guelph, and Olds College in Alberta, and 43 active projects with a total investment of over 451 mm CAN [31]. Also, there expected economic impact – more than 4.5 bn. CAN in GDP and the job creation – more than 4 500 jobs over 10 years;

– Scale AI is a network with 1,345 members, and has the portfolio to date has over 70 projects worth about 170 mm CAN [32]. Also, there expected economic impact – more than 16.5 bn. CAN in GDP and the job creation – more than 16 000 jobs over 10 years.

Project examples of each Superclusters during 2019–2022 are presented at Table 2.

Table 2

Projects Examples of Canada`s Clusters during 2019–2022

Project title	Description	Project location	Project partners	Total project cost, mm CAN
1	2	3	4	5
Advanced Manufacturing Cluster				
Digital transformation of secondary metallurgy facility at ArcelorMittal Dofasco	This project is an opportunity to marry the best in oxygen steelmaking with the best in digital transformation with the goal of digitally transforming a manufacturing asset in a mature, heavy industry. Digitalization in heavy industry lags that of other manufacturing subsectors. This project will create value in advancing the state of understanding of the digitalization process in Canada—in a real heavy manufacturing environment—including: the process execution required to implement intelligence, the standards required to enable the flow of data, as well as the impact on the workforce. This is especially critical as all global industrial economies are racing towards these goals.	Hamilton, ON	ArcelorMittal Dofasco, IBM Canada Ltd., Tenova Goodfellow Inc. and IFIVEO Canada Inc.	12.07
Advanced manufacturing applications in mining and mineral processing	This consortium will develop new oil sands and mineral processing technologies that will reduce energy intensity and resulting greenhouse gas emissions. It will also develop cleantech solutions that will mitigate the environmental impacts of using solvents, significantly reducing water usage and eliminating the need for tailings ponds.	Calgary, AB	Exergy Solutions, Suncor Energy, Precision ADM Inc.	4.82
Module for Digitalizing Work Instructions to Augmented Reality	Project partners will add a new module to the current DeepSight augmented reality platform that allows organizations to create holographic guides to help workers in the assembly of aerospace components and composite parts. This will greatly increase productivity and reduce the number of defects, as the employees will be empowered by immersive and intuitive instructions.	Montreal, QC	DeepSight, Avior Integrated Products Inc.	0.34

Продовження табл. 2

1	2	3	4	5
Learning Factory Digital Twin	This project brings industry, academia and researchers together to simulate and model industrial factory processes using real-time, data-driven technologies. This consortium will create a digital twin of two industrial production lines for complex Boeing aircraft parts. Partners will merge full-scale industrial production with technology to create new digitally-driven industrial tools in spatial planning, asset tracking, data collection and process automation.	Vancouver, BC	Avcorp, Convergent Manufacturing Technologies, AMPD, Boeing/Aeroinfo, LlamaZOO, Microsoft, UBC	4.81
HyperTalent	This project will tackle the tech talent shortage by working with K-12 urban and rural educators to build awareness around careers in technology, and connecting school curriculums with real-world examples of the opportunities ahead. The program will also provide a number of Indigenous youth with hands-on exposure to the tech sector through industry internships at leading technology companies. This broader approach will help youth align their interests and skills with prospective careers.	Vancouver and Kootenay Region, BC	BC Tech, Accenture, Arrow Lakes School District 10, BCIT, Microsoft, Providence Health Care, St Paul's Foundation, SAP, Unbounce, Vancity, Vancouver School Board	0.45
Ocean Cluster				
Vitality	This innovation ecosystem project will leverage Canada's ocean data to deliver definitive commercial outcomes to the businesses involved by advancing ocean data analysis, management and visualization capabilities, and products.	Halifax, NS	Pisces Research Project Management, Dalhousie University, Perennia Food and Agriculture Inc., Fundy Ocean Research Centre for Energy (FORCE), University of Victoria, St-Lawrence Global Observatory (SLGO), Tula Foundation, Marine Renewables Canada (MRC), COIN Atlantic	3.80
Fishless Marine Microbial Fish Oil	Project partners will be working together to develop a sustainable alga-based nutritional oil that fully mimics and complements the health benefits of fish oil consumption.	Bay of Fundy, New Brunswick	Mara Renewables Corporation Nature's Way Canada, Algorithm Ingredients Inc.	2.88
Protein Industries Cluster				
Production of Minimally Processed, Sustainable and Local Pulse Ingredients for Vegetable Protein and	Project partners will work together to process pea, lentil and fava bean protein concentrate into high moisture meat analogue, Texturized Pulse Protein (TPP), tempeh, tofu, pasta and non-dairy analogues. These ingredients will then be further developed into market-ready food for the consumer and	Saskatoon, SK	AGT Foods and Ingredients, Ulivit, Saskatchewan Food Development Centre, University of Saskatchewan College of Agriculture; Department of Food and Bioproduct Sciences, Recipe Unlimited Corporation	11.33

Продовження табл. 2

1	2	3	4	5
Plant-based Food Applications	restaurant markets, helping to meet the increasing demand for vegetarian and flexitarian diets.			
Modernizing Agriculture Via the Zero-Chemical Residue Ecosystem	Project partners will develop a new technology that specifically targets pests when spraying fields, increasing efficiencies and providing economic benefits for farmers. The technology uses artificial intelligence to detect weeds and other crop pests while passing over a field. This is estimated to reduce pesticide use by up to 95 per cent while maintaining crop yield, saving farmers approximately $52 per acre per growing season.	Regina, Saskatoon, Langenburg and rural, SK	Exceed Grain Marketing, Aberhart Farms, Global Institute for Food Security, NRC, Panvion Technology, Precision.AI, Providence Grain, Provision Analytics, Pure West Commodities, Puely Canada Foods, RMD Systems, SAIRS Ltd, Saskatchewan Polytechnic, Sure Growth Solutions, VeriGrain, Wilmar Farms	25.81
Food & Beverage Sector Supply Chain Mapping	This project will create a national platform that connects local and provincial tools to enable the businesses and organizations that comprise Canada's food system, including the plant protein segment, to work together locally, provincially and nationally.	Montreal, QC	The McGill Centre for the Convergence of Health and Economics, Conseil de la Transformation Alimentaire du Québec, Food and Beverage Canada, Food and Beverage Atlantic, Food and Beverage Ontario, Food and Beverage Manitoba, BC Food and Beverage, Bivizio, University of Ottawa	2.66
Scale AI Cluster				
Farm to Market	This collaborative project will establish an innovative online platform that will significantly reduce distribution costs and enable access to new markets. The AI algorithms created will identify co-loads in advance, giving farmers an entirely new logistics model where ship dates are projected and synchronized months into the future.	Kitchener, ON	Local Line, Flanagan Foodservice, Ontario Fresh, Ontario Farmers Collective	0.50
Smart supply chain for the minerals and metals sector	The project will enable a highly advanced AI algorithm to ensure full traceability of the supply chain for minerals and metals, from extraction to the end of the product life cycle. The traceability system makes it possible to guarantee the North American origin of the materials, which will reduce the processing time for exports at the border. From an environmental perspective, analyzing the data will facilitate the implementation of initiatives to reduce greenhouse gases and ensure that industry complies with the OECD guidelines on responsible sourcing.	Quebec, QC	Optel Group, Aluminium Association of Canada, Université Laval, Laserax, Lithion Recycling, SmartyfAI, Government of Quebec	16.56

Source: elaborated by author based on [1; 12; 18; 19; 27; 31; 32]

Conclusions

The Innovation superclusters have many positive characteristics as a new framework to rethink Canada's innovation strategy based on public-private partnership model. This Canadian government program focuses on competitiveness and stresses that talents, cutting-edge research, R&D expenditure, and advanced technologies will boost the productivity and performance of industries. It also supports new entrepreneurial ventures and the commercialization of new products, processes, and services to scale up firms and industries. Finally, it supports well-organized innovative systems, where various actors, including growth-oriented firms and academic and public sector organizations, collaborate to explore the domain of technology and innovation in which the industry is most likely to succeed, given its capabilities and needs.

Prospects for future research

The specific measures for development of industrial clusters in Ukraine at the postwar period, and elaboration of national strategy for the development of innovation system in Ukraine can be research objects in future research.

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ГЛОБАЛЬНІ ІННОВАЦІЙНІ КЛАСТЕРИ: ДОСВІД ДЕРЖАВНО-ПРИВАТНОГО ПАРТНЕРСТВА КАНАДИ

Стаття присвячена дослідженню сучасних тенденцій розвитку глобальних інноваційних кластерів Канади на основі моделі державно-приватного партнерства та виявлення їхніх особливостей протягом останніх років. У ході дослідження було сформовано гіпотезу: "у поствоєнний період Україна зможе сформувати нову інноваційну стратегію, яка забезпечить країні глобальноу конкурентоспроможність та інноваційність". Для дослідження глобальної інноваційної системи та розвитку суперкластерів Канади застосовано методи наукового дослідження: теоретичне узагальнення, емпіричний метод та методи статистичного аналізу. Програма суперкластерів є новою ініціативою, яку просуває канадський федеральний уряд, щоб зміцнити найперспективніші кластери Канади та дозволити інноваційним компаніям працювати більш продуктивно у пошуках ресурсів та доступу до інформації, знань і технологій. Програма інноваційних суперкластерів має багато позитивних результатів як новітня платформа для перегляду інноваційної стратегії Канади на основі моделі державно-приватного партнерства. Результати цього дослідження можуть бути використані у подальших напрацювання щодо розвитку промислових кластерів в Україні у поствоєнний період, а також для розробки національної стратегії розвитку інноваційної системи в Україні.

***Ключові слова*: державно-приватне партнерство, інновації, кластер, суперкластер, Канада, інноваційна система, університет, проєкт.**