METROPOLITAN ECONOMIC MOVEMENT

RELAUNCH MTL

ENHANCED ACTION PLAN TO STRENGTHEN THE AEROSPACE AND AIR TRAVEL SECTORS

Co-developed by

Content partner

Michel Leblanc

President and CEO

- Chamber of Commerce of Metropolitan Montreal

The Chamber of Commerce of Metropolitan Montreal, in partnership with Montréal International, released two studies in 2018 and 2020 that looked at *international connectivity as a key factor in the sustainable growth of Greater Montréal*. These publications clearly demonstrated the importance of internationalization for the city's economy: it helps foster the growth of median household income and contributes significantly to job and wealth creation. The studies also showed that Montréal is already in an enviable position when compared to other major world cities, on several levels.

At the heart of this connectivity are aerospace and air transport, two leading sectors when it comes to exports, research and development and attractiveness. Unfortunately, these industries are among those hardest hit by the effects of the pandemic, which has closed borders and grounded planes. The result is deserted airports, factories and maintenance companies operating at reduced capacity, and a potential workforce that is looking for opportunities in other sectors. The entire ecosystem is being turned upside down. While these sectors have demonstrated remarkable resilience in the past, they now face unprecedented challenges that will persist for years to come.

It will be no small task to consolidate our position as the world’s third-largest aerospace capital and return to record levels of air traffic. Through the Relaunch MTL initiative, we are proposing an action plan to address this issue in a concerted manner, rallying all the key players in Québec’s aerospace cluster. This plan proposes avenues to consolidate our gains, ensure our companies' survival and strengthen talent retention in the short term. It also outlines a series of game-changing initiatives, such as the developing greener aircraft, to make sure we are well-positioned once the crisis has passed.
Significant resources will need to be deployed to successfully implement the plan. Other countries have already taken extraordinary steps to ensure the survival of their aerospace sectors. Our governments must also act quickly, summoning the means and creativity necessary for what promises to be a multi-year recovery. We must all recognize the strategic importance of aerospace and air transportation to the economy of Montréal, Québec and Canada.

Suzanne M. Benoit

President

- Aéro Montréal

The aerospace industry – a pillar of the Québec economy – is currently facing one of the biggest crises in its history.

The exceptional border restrictions in force since March 2020 have deeply impacted our airlines and the sectors that depend on them. Manufacturers; OEMs; integrators; maintenance, repair and overhaul companies; and small and medium-sized enterprises: the entire value chain has been affected.

In the face of this historic situation, the industry's response was immediate. Last May, the "Alliance for Aerospace Recovery" committee was created under the direction of Aéro Montréal's Board of Directors. The last several months saw the unprecedented mobilization of top executives from each segment of the supply chain, various levels of government and the financial community, producing an initial list of solutions in record time.

To revive this sector – which contributes $25 billion to the country's GDP each year – industry players are advocating for an easing of restrictions and the gradual and safe resumption of domestic and international flights. We envision a revamped business financing model and the diversification of activities, with a focus on sectors such as defence and space.

In short, we are banking on a green recovery with a more consolidated ecosystem and a greater focus on ecomobility.

For an optimal recovery, innovation will need to play a key role. Keep in mind that our industry is characterized by long development cycles: the innovations we are working on today are the ones that will allow us to shine on the international stage in the future!
To carry out these pioneering projects and allow the sector to thrive, the Québec aerospace industry needs to be able to count on a highly specialized workforce. The exceptional know-how of our 43,400 workers is the envy of countries around the world and the pride of Quebecers. We must do everything we can to preserve it.
The recommendations of the Alliance for Aerospace Recovery have already helped improve updates to the Québec Aerospace Strategy. As we have seen around the world, federal government support is also essential for success.
With this strategic plan, Relaunch MTL is encouraging the continuation of this movement.
You are the main players and partners in this shift, which I believe will enable us to become leaders of a renewed industry, adapted to a new reality. Let's continue our efforts to protect our precious sector, which took us nearly a century to build!

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SUMMARY

Aviation and aerospace are in crisis

The air transport and aerospace industries may be used to turbulence, but they currently weathering the worst storm in their history. Without considerable government aid, their viability is at risk.

AT THE HEART OF MONTRÉAL'S ECONOMIC LIFE

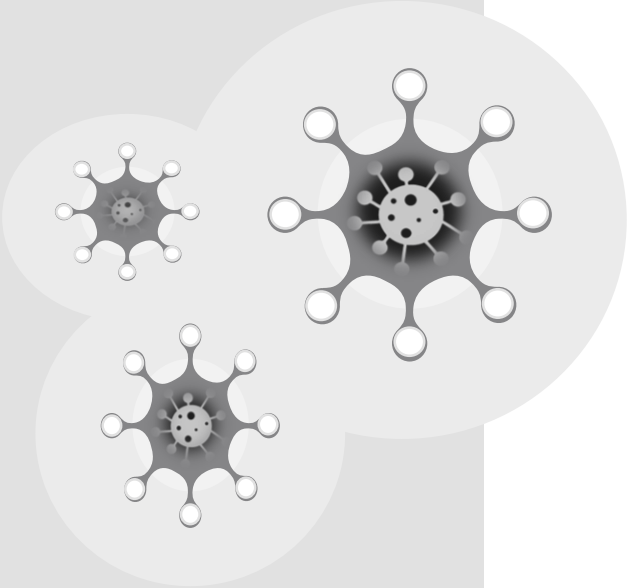
- It is easy to recognize the strategic importance of Aéroports de Montréal (ADM) and its resident airlines. They are the link that connects us to the world, without which trade, tourism, family reunions and cultural exchanges would be almost impossible. Montréal's connectivity is also a factor in wealth creation.
- The strategic importance of aerospace is somewhat less visible to the general public, but it is no less real. While Bombardier has turned its focus to business aircraft, Montréal remains the world's third largest aerospace capital. The local capacity for innovation has led to the development of one of the most efficient aircraft and to the arrival of Airbus.
- This industry boasts 43,400 well-paying jobs, but above all, it is highly productive. It is a leader in R&D and innovation, and the biggest export sector in Québec.
- Prior to the pandemic, our airlines, led by Air Canada, were facing fierce international competition, and yet they still ranked among the best in the world. Montréal's aerospace sector was facing a restructuring of the global industry and needed to modernize its operations.

A GROUNDED INDUSTRY

- The pandemic has grounded aircraft around the world and airline and airport activity is running at less than 20% of its previous level, with no prospect for recovery in the near future.
- Despite the retirement of the oldest and largest aircraft, a large number remain unused and airlines are seeking to postpone aircraft procurement.
- Aircraft manufacturers have slowed their pace of production and the impact is being felt throughout the chain of suppliers, large and small. A return to pre-pandemic volume is not expected for several years.

As a high-volume, low-margin industry, air transport needs to see the wide-scale resumption of flights.

And without an active aviation industry, there is no restarting the aerospace sector, which depends on the purchase and maintenance of aircraft.



THE CLIMATE CHALLENGE AND ARTIFICIAL INTELLIGENCE

In spite of current setbacks, the future looks bright for these sectors, with a focus on industry transformations to meet the climate challenge and on the integration of artificial intelligence for air transport. But they will need support to weather the storm and position themselves favourably for the recovery.

COURSES OF ACTION

- Develop an integrated strategic R&D proposal to develop "green" aircraft and their components
- Integrate new technologies in manufacturing engineering
- Boost efforts to attract and retain talent
- Quickly adopt an ambitious Canadian aerospace policy that includes a focus on clean technologies and responsible development
- Secure financing for aerospace companies
- Support innovation and the use of new technologies
- Support business development efforts in the defence and space sectors
- Resume domestic and international flights in a safe manner
- Provide financial support for ADM
- Provide financial support for Canadian airlines
- Review the user-pay model

Highlights of the priorities established during the Strategic Forum on Aerospace and Air Transport (1/2)

On November 9, 2020 the Strategic Forum on Aerospace and Air Transport, organized by the Chamber of Commerce of Metropolitan Montreal and its partners, tackled the issues, challenges and business opportunities facing companies in the sector. This virtual conference, which attracted nearly 500 participants, was an opportunity to discuss the action plan's highlights and reflect on the sector's post-COVID future.

During the Forum, a collaborative working session enabled participants to prioritize the issues and courses of action outlined here in this report. The main findings are:

1) **Pre-COVID challenges**: 1) the intense **global competition** faced by airlines and the aerospace industry, and 2) the **climate challenge** are the two issues considered to be of primary importance.

2) **Long-term impacts of the current crisis**: It is clear that the aerospace sector is currently facing unprecedented challenges, particularly due to the near-total suspension of flights. Forum participants identified the following impacts as the most worrisome in the long term: 1) the **relocation by prime contractors** of certain links in the production chain; 2) a **decline in growth prospects**; 3) a **permanent reduction in manufacturing capacity in Québec**; and 4) a **loss of skills**.

3) **Highest priority industry action items**: A majority of respondents indicated that **investments in strategic R&D to develop green aircraft** and **integrate new technologies in manufacturing engineering** are the top priorities for the aerospace sector.

Highlights of the priorities established during the Strategic Forum on Aerospace and Air Transport (2/2)

4) **High priority policy options for governments**: Forum participants placed great importance on supporting innovation and the use of new technologies. Other action items prioritized by participants include the adoption of a **Canadian aerospace policy focused on technologies** to help reduce our carbon footprint and **the safe resumption of** domestic and international flights.

5) **Other input**: During the Forum, guest speakers and experts also stressed the importance of: 1) supporting the sector to ensure a strong workforce (renewal, talent attraction); 2) ensuring a predictable business environment; and 3) seeing the recovery as a vehicle for innovation.

Participants were able to share other ideas during an open-ended question period, which led to the identification of additional avenues to recovery.

Among these, *specific to companies*:

- *"Think about revising the basic mission of these companies so they can use their resources and employees to respond to the climate crisis in the short term (i.e., changes in the sector, such as efficient land transport) – like the companies that started producing respirators during the pandemic."*
- *"Share these new technologies and innovations with universities and foster stronger collaboration between universities and industry players."*

...and specific to governments:

- *"Carry out infrastructure projects in airports and other similar facilities."*
- *"Provide better support to aerospace and recognize it as a major industry in Canada on par with the auto and oil sectors.... Too often, aerospace is seen as a secondary industry."*

The combination of the collaborative session highlights and the action plan that follows resulted in the roadmap proposed by Relaunch MTL for a stronger sector. The various stakeholders can implement the roadmap to ensure the recovery of the sector.

INTRODUCTION

Relaunch MTL: an initiative to mobilize key stakeholders in Greater Montréal's economy

The COVID-19 pandemic is having a significant impact on society as a whole. This health crisis has led to an unprecedented economic crisis, but the impacts on Montréal's economy vary greatly from one industry to another. While some sectors are experiencing significant losses and are being forced to reinvent their business models, others are in a growth period and are experiencing a labour shortage. Businesses and industries face enormous challenges, but there are many opportunities to be grasped, and the shift to a lower-carbon economy remains a priority.

The current crisis is mobilizing all Montréal players. The provincial and federal governments, as well as the municipalities that make up the Montréal CMA, are making considerable efforts to shore up their economies on a sustainable basis.

As part of this dynamic, the Chamber of Commerce of Metropolitan Montréal and some 20 partners started the Relaunch MTL movement, supported by the Government of Canada, the Government of Québec, the Communauté métropolitaine de Montréal and Ville de Montréal, in association with Investissement Québec and in collaboration with the Palais des congrès de Montréal. The goal of this movement is to mobilize all the players in the Montréal agglomeration's economic ecosystem to revive the city's major strategic sectors.

The data and intelligence collected in real time will be used to diagnose each sector in terms of the issues it faces.

The movement's objective is to gain a deep understanding of the challenges facing these sectors, to find solutions and to assist businesses and various levels of government in decision making. All these actions have a common goal: the successful revival of Montréal's economy.

Ten sector action plans and a plan for Montréal's downtown are expected to emerge from this movement. These plans will be showcased in a series of virtual events designed to spark reflection and trigger actions to propel the sustainable revival of the city's economy and businesses.

This document represents the recovery plan for the aerospace and air transport sectors

This action plan to revive the aerospace and air transport sectors was developed as part of Relaunch MTL. The analyses, findings and courses of action are the result of a rigorous and accelerated initiative, taking the effects of the current crisis into account. They are mainly based on:

- a sustained contribution from Aéro Montréal, the Québec aerospace cluster: studies, data, diagnoses, briefs, initiatives carried out on the sidelines of the crisis, etc.;
- a literature review of the consequences of COVID-19, both locally and internationally, and the measures to address them;
- the search for secondary data and additional information;
- interviews with key players in the community (see list in the Appendix);
- KPMG's analytical framework and sector expertise.

This plan for the aerospace and air transport sectors proposes short-term priority courses of action to governments and industry players together with other courses of action that will be part of a longer-term sustainable recovery. This is a city-wide plan that covers the territory bounded by the Montréal Census Metropolitan Area (CMA).

The courses of action are expected to be presented at a strategic forum on November 2, 2020, by way of an interactive session with members of the ecosystem.

TEN SECTORS OF INTEREST

- Aerospace and air transport
- Retail
- Construction and infrastructure
- Creative industries
- Life sciences and health technologies
- Financial services
- IT
- Cleantech
- Tourism
- Transportation and logistics

Greater Montreal: Solid economic performance before COVID-19

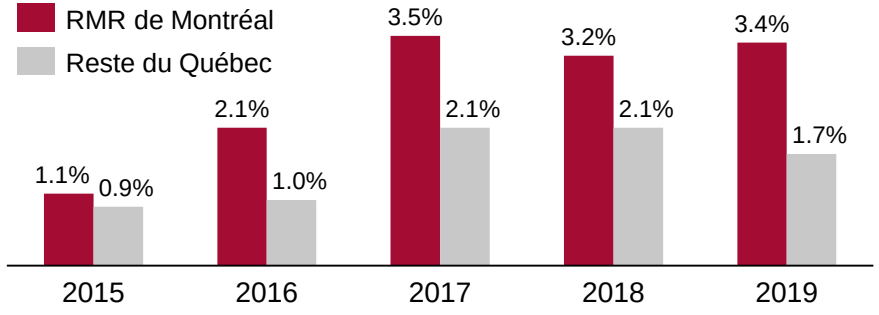
The Montréal agglomeration was at the heart of Québec's economic growth in the years leading up to COVID-19, serving as a true economic driver for the province.

- Between 2016 and 2019, the growth rates recorded in the Montréal CMA were significantly higher than those in the rest of Québec. In 2019 the city's GDP even grew at twice the rate of the rest of Québec (3.4% vs. 1.7%), surpassing the growth rates of the other major Canadian CMAs.

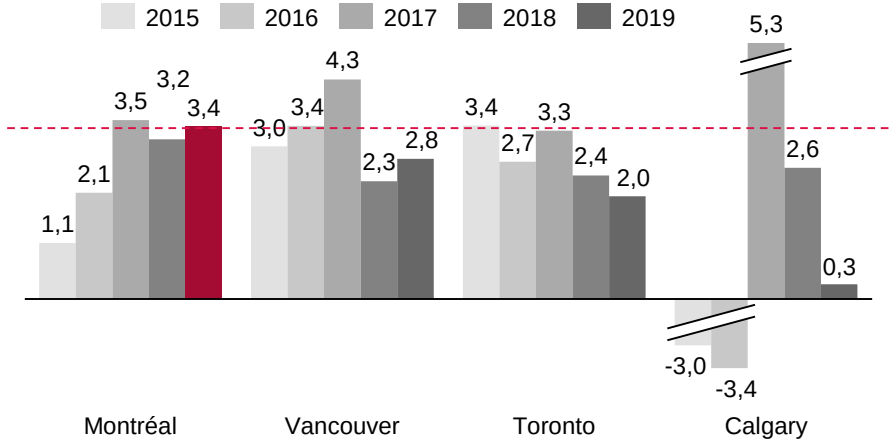
The economy of the Montréal agglomeration benefits from:

- The presence of a critical mass of businesses and jobs in several promising sectors, making Montréal a dynamic and innovative metropolis (those sectors are all the subjects of Relaunch MTL action plans)
- Massive investments in infrastructure – including the Turcot Interchange, the Samuel-de-Champlain Bridge and the Réseau express métropolitain (REM)
- A rapidly growing real estate sector – not only on the Island of Montréal but also on the South Shore

Annual growth rate of real GDP, Montréal CMA and rest of Québec
2015 to 2019, %



Annual growth rate of real GDP, selected CMAs
2015 to 2019, %



Sources: Conference Board of Canada; KPMG analysis.

Unprecedented impact and impressive rebound

Employment in the Montréal CMA fell by 18.0% from February to April 2020, only to rebound in May and the months that followed.

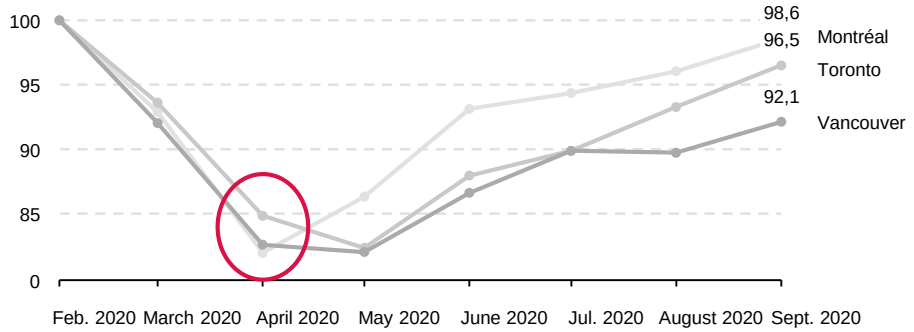
- In September, employment was 1.4% below February's level, but that may decline due to October's partial lockdown.

Montréal's rebound is the strongest among the 20 largest North American cities.

- The government's vigorous response – particularly its unprecedented household income support – has limited job losses, with personal disposable income even increasing.
- The way we have managed the health crisis has also allowed us to reopen some businesses more quickly than our southern neighbours.

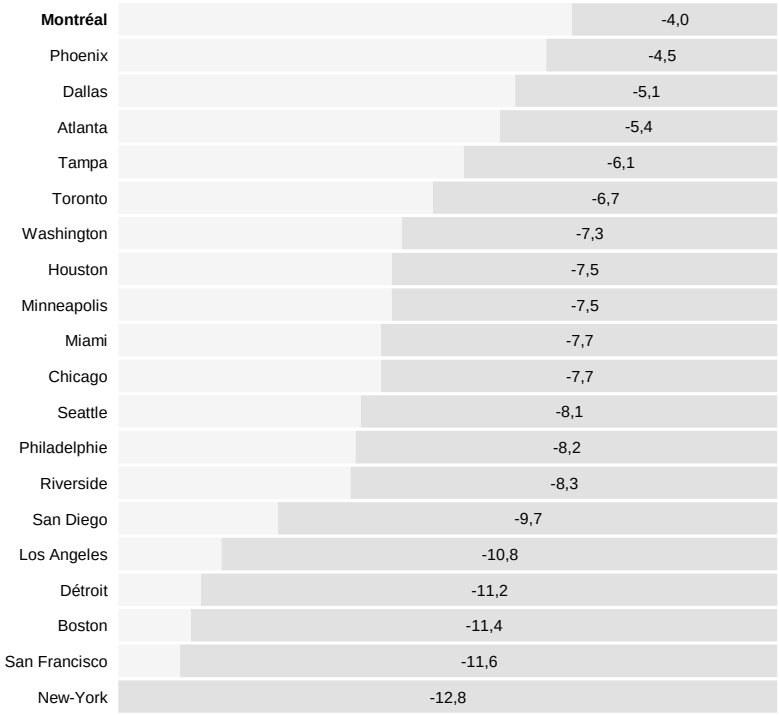
Changes in employment, selected census metropolitan areas

February 2020 to September 2020, February 2020 =100



Changes in employment in the 20 largest cities in Canada and the United States

February to August 2020, %



Source: Statistics Canada (Table 14-10-0295-01); Metro Recovery Index (Brookings), 2020; KPMG analysis.

Household and business confidence remains shaken, some health measures are still in place and the economy's productive capacity has been reduced.

The downtown area remains hard hit

The Montréal agglomeration was hard hit by the COVID-19 pandemic, with a longer lockdown period than elsewhere in Québec. But it is downtown Montréal that was – and still is – among the most affected areas.

- Since so many of its jobs can be done remotely, the downtown area has been deserted by its numerous workers. A gradual return is under way, with office space allowed a maximum capacity of 25%. At the end of September it was estimated that only one third of employers had reached or surpassed the 20% mark.
- There are no international tourists because the Canadian borders have been closed. The occupancy rate for hotels in downtown Montréal fell by 83% between the summer of 2019 and the summer of 2020, while the occupancy rate outside downtown Montréal fell by 25%.
- Shows, festivals and other events in the downtown area were almost all cancelled from mid-March to early August, while theatres, concert halls and museums put their activities on hold. Despite a relaxation of health measures in August and September, Greater Montréal went back into the red zone on October 1 and the ban on gatherings, both indoor and outdoor, was reimposed.

Change in number of jobs, selected sectors
Québec, selected periods, seasonally adjusted

	Change February to April 2020	Change February to September 2020
Accommodation and food services	-36%	-10%
Information, culture and recreation	-36%	-11%
The economy as a whole	**-23%**	**0%**

Sources: "Les bureaux du centre-ville de Montréal toujours presque vides" (La Presse), 2020; "Bleak summer seen for Montreal hotels, but outlook is better in regions like Charlevoix" (Montreal Gazette), 2020; Statistics Canada (Table 14-10-0022-01); KPMG analysis.

Accommodation and food services, as well as information, culture and recreation, are still the sectors most affected by the crisis.

A recovery that varies in speed and intensity depending on the sector and location

Most businesses in the metropolitan region will go through four phases of return to growth.

- Although the initial response phase to the crisis is behind us, some companies operating in the most affected sectors are still navigating in a zone of resilience, while others have begun transitioning to the recovery phase with a goal of bringing their activities back to pre-pandemic levels.

Not all companies and economic sectors will go through the different return-to-growth phases at the same speed, and some may face setbacks during the second wave. The extent of the changes needed to adapt business models to the new reality will vary by sector.

Most companies have begun to reflect on the new reality that will emerge in the coming months and even years. Current concerns turn on the long-term effects of COVID-19 on corporate strategies or business models.

The four phases of return to growth

SHORT TERM		LONG TERM	
Reaction *Responding to the crisis*	**Resilience** *Managing in the face of uncertainty*	**Recovery** *Identifying opportunities*	**New reality** *Adapting to the new reality*
All organizations are affected at the same time because professional and personal lives are disrupted. Volatility and uncertainty permeate society as we try to limit the damage to lives and livelihoods during this unprecedented storm.	Controls are relaxed as the spread of the virus is contained. Consumer demand is on the way back, but curbed by wage losses, investment losses and fears of a recession.	Anxiety passes, hiring and investment improves and consumer insecurity cautiously lessens. For many organizations, the path to recovery will depend on their ability to limit damage early in the response stage, the duration and severity of the recession, industry demand after COVID-19, and their willingness to adapt.	Some lasting changes will remain after recovery as many of the behaviours acquired in the wake of the crisis become part of the new normal.

Source: KPMG (July 2020) “COVID-19: Exiting the crisis: Supporting our customers’ recovery.”

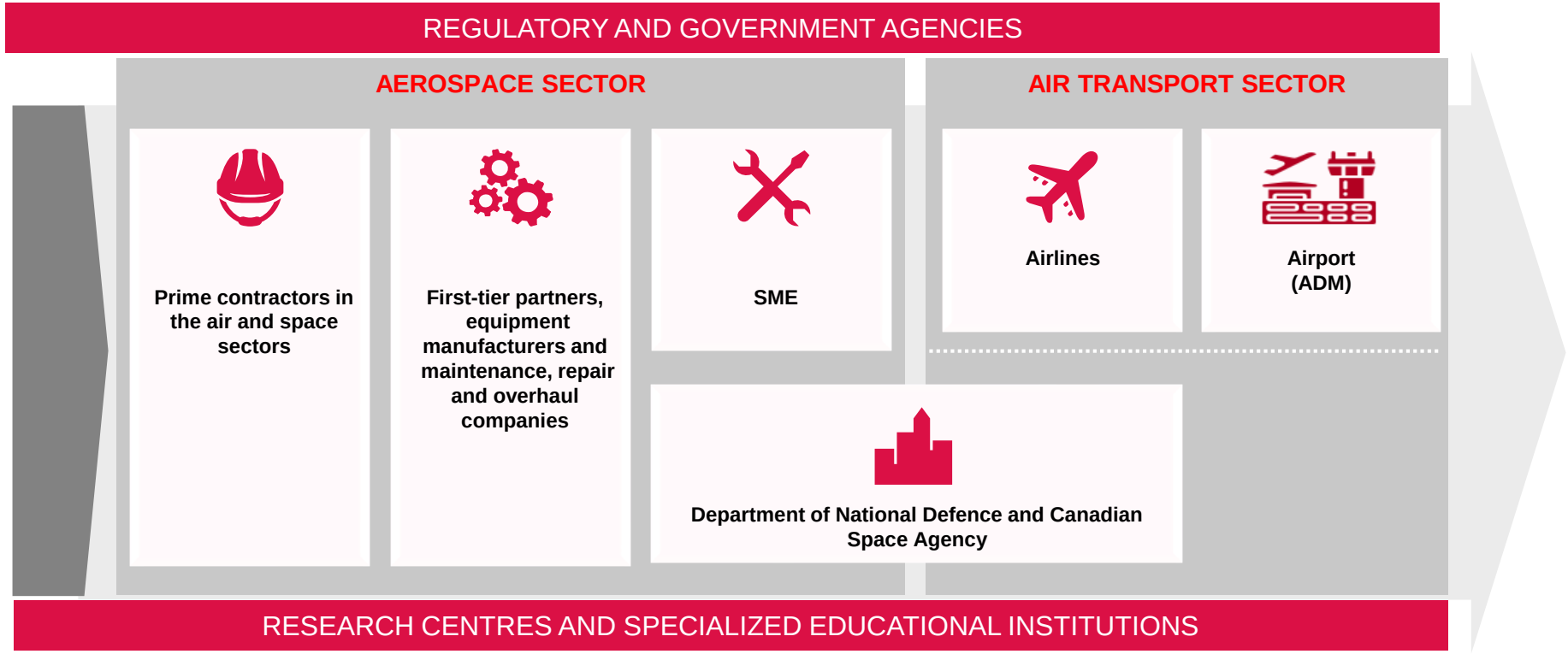
1

THE SITUATION BEFORE COVID-19

- The sector's strategic importance for the economy of Greater Montréal
- The main development issues before COVID-19

Two sectors within the same ecosystem

Greater Montréal is home to airlines, an international airport, a space agency, prime contractors and a number of equipment manufacturers and suppliers. These players operate in two sectors, namely aerospace and air transport.



More than 200 companies in the air transport and aerospace industries

Most of these businesses are located in the Montréal CMA. The industry is structured around a national airline, an international airport and prime contractors including Airbus, Bombardier, Bell Helicopter Textron Canada, CAE, Pratt & Whitney Canada and Mitsubishi.

These flagship companies draw on the support of numerous equipment manufacturers, suppliers and subcontractors.

Sources: Aéro Montréal, KPMG analysis

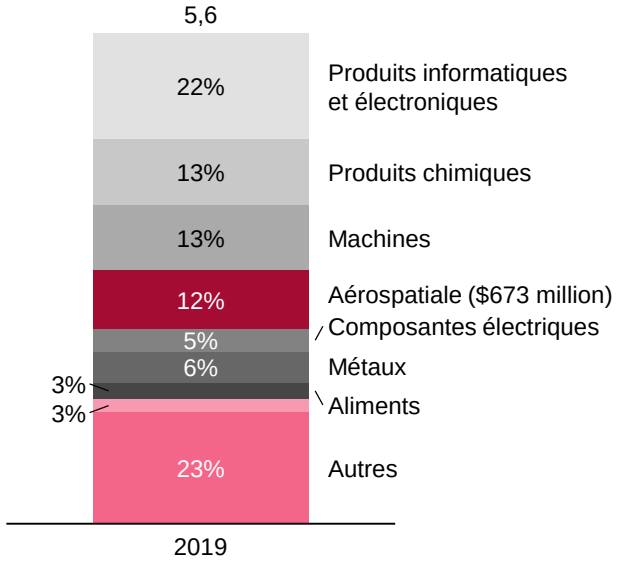
A heavyweight in R&D

Aerospace is the fourth largest contributor to R&D, accounting for 12% of investment in the Canadian manufacturing sector.

- Aerospace boosts Canada's average R&D investment, which is considered too low in international comparisons.

Of the 100 Canadian companies with the highest R&D investment, six are in the aerospace sector and three of these are among the top 20 investors. In 2019, more than 70% of Canadian aerospace R&D was carried out in Greater Montréal.

Domestic business expenditures on research and development (BERD), manufacturing sector, Canada
2019; in billions of dollars and in %



R&D Spending – Canada's Top 100 companies
2018; in millions of dollars. Analysis conducted prior to transactions involving Bombardier, Airbus and Mitsubishi

Rank	Company	R&D investment
1	**Bombardier**	**$1,472M**
5	**Pratt & Whitney Canada**	**$552M**
20	**CAE**	**$183M**
54	Lockheed Martin Canada	$41M
59	L3Harris	$38M
99	Héroux-Devtek	$11M

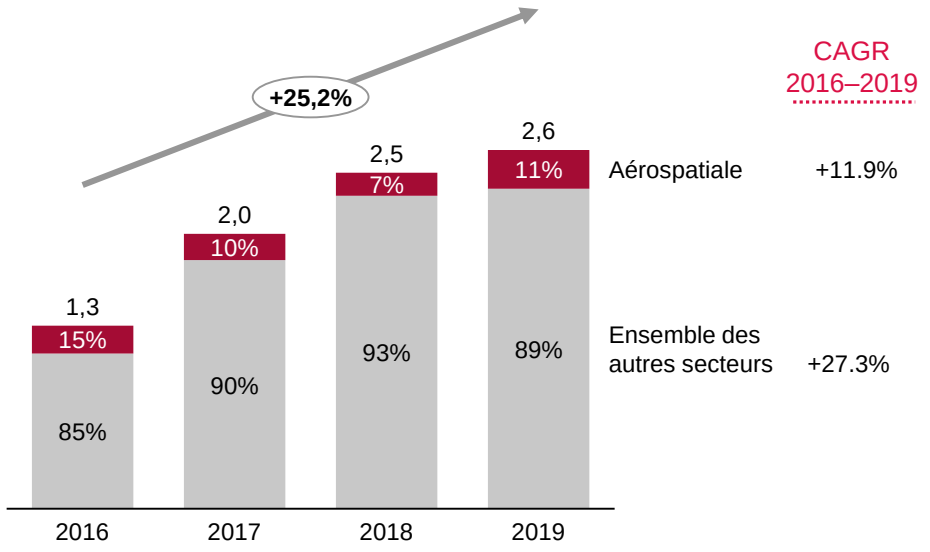
Sources: Statistics Canada, "Business enterprise in-house research and development expenditures [...]" (2019); Institut du Québec, "Une grille d'analyse pour identifier les industries stratégiques" (2020); Research Infosource, "Canada's Top 100 Corporate R&D Spenders 2019" (2019); KPMG analysis.

A magnet for foreign investment

Foreign direct investment (FDI) in other sectors has grown more rapidly over the past three years, but aerospace's share has remained around 10% of the CMA's FDI.

Foreign companies invested or reinvested $285.3 million in the Montréal agglomeration in 2019, or 11% of total investments in the region. These investments in machinery and equipment increase the sector's productivity and support its growth.

Foreign direct investment, Montréal CMA
2016 to 2019; in billions of dollars



Sources: Montréal International, "2019 Activity Report"(2019); Aero Montréal,

"Mitsubishi Heavy Industries to acquire Canadair regional jet program from Bombardier"(2019); KPMG analysis.

Examples of Aerospace Investments Since 2016

Bell Helicopter
Transfer of **Bell 505** production to the Montréal area in **2016**

F/LIST
$20M for the opening of an aircraft interiors production plant in **2017**

THALES
$25M for the opening of an AI laboratory in **2017**

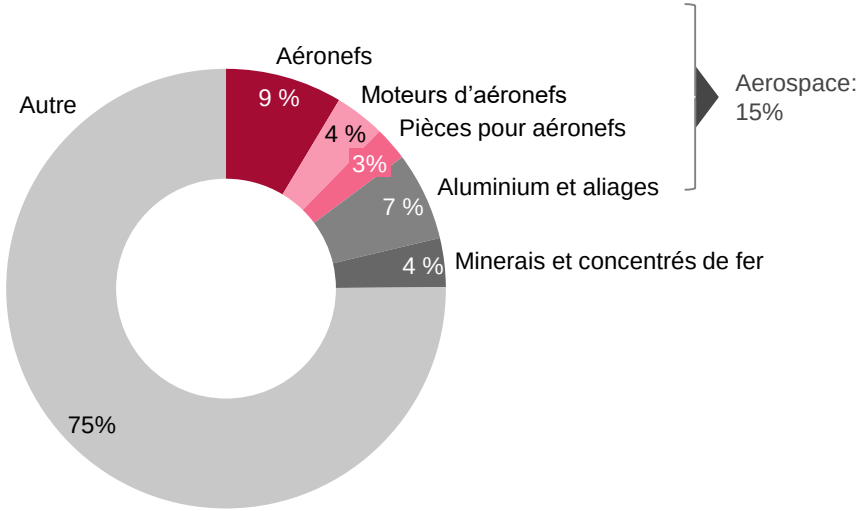
AIRBUS
$780M for the repurchase of Bombardier's interest in **February 2020**

$550M for the acquisition by Mitsubishi Heavy Industries of Bombardier's regional jet program in **2019**

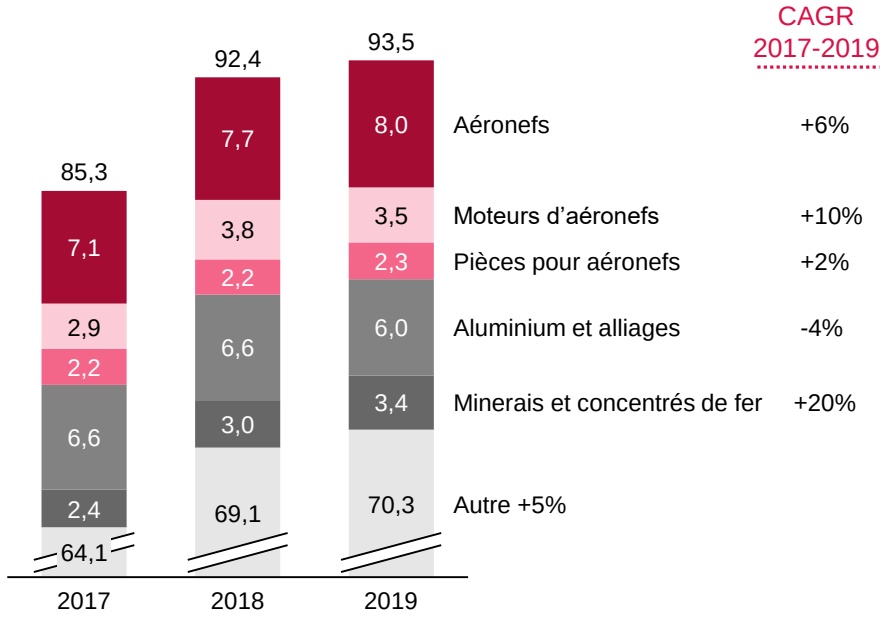
Québec’s leading export sector

- More than 80% of production is exported outside Canada, accounting for 15% of Québec’s exports.
- With an export volume of $13.8 billion, this sector contributes to Québec’s economic growth and boosts its trade balance.
- In recent years, export growth has been stronger for aircraft (6%) and aircraft engines (10%) than for the total products exported by Québec (5%).

Main products exported by Québec
2019; %



Change in exports, Québec
2017 to 2019; % and in billions of dollars



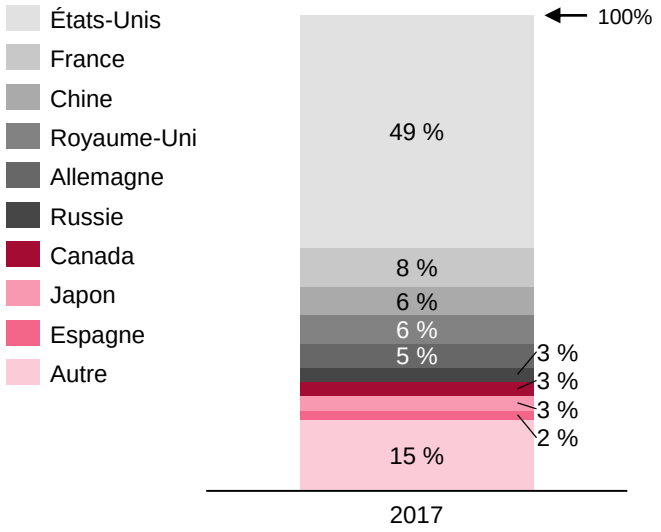
Sources: Statistics Canada, “Québec’s International Merchandise Trade” (2019); KPMG analysis.

Third-largest aerospace capital in the world

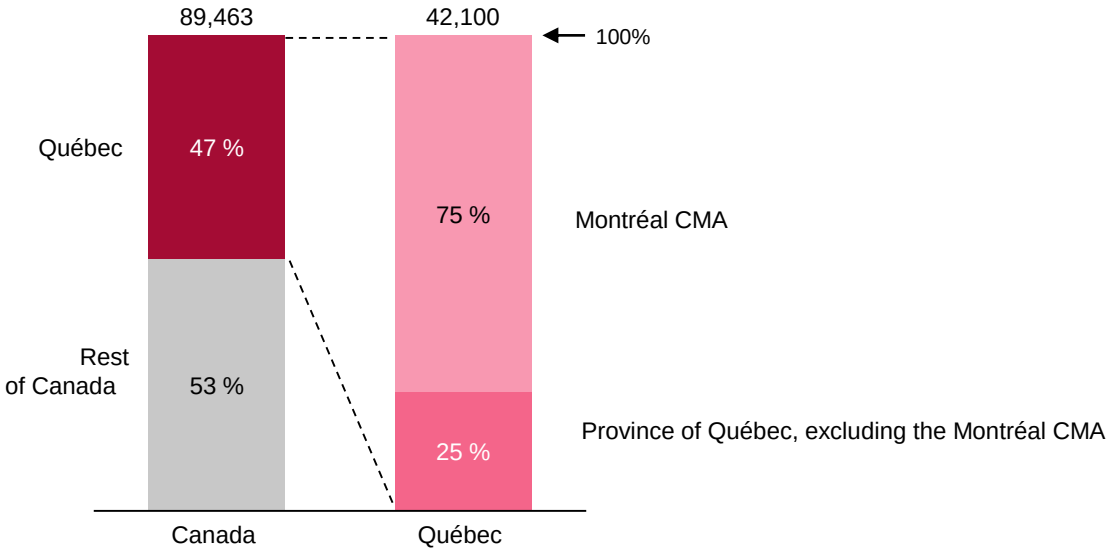
Thanks to its critical mass in all industry segments and its integration into global value chains, Montréal's aerospace sector has an international reach. It has made a name for itself through its innovation, dynamism and competitiveness. According to Aéro Montréal, the region is the third-largest aerospace centre in the world after Toulouse and Seattle.

- Globally, Canada accounts for 3% of aerospace production and 57% of its activities are in Québec, with sales of $17.8 billion in 2019.
- Québec also accounts for 47% of Canadian jobs, about three-quarters of which are in Montréal.

Aerospace revenues
Main countries
2017; $838 billion



Aerospace jobs
Canada, Québec, Montréal
2018; number of jobs

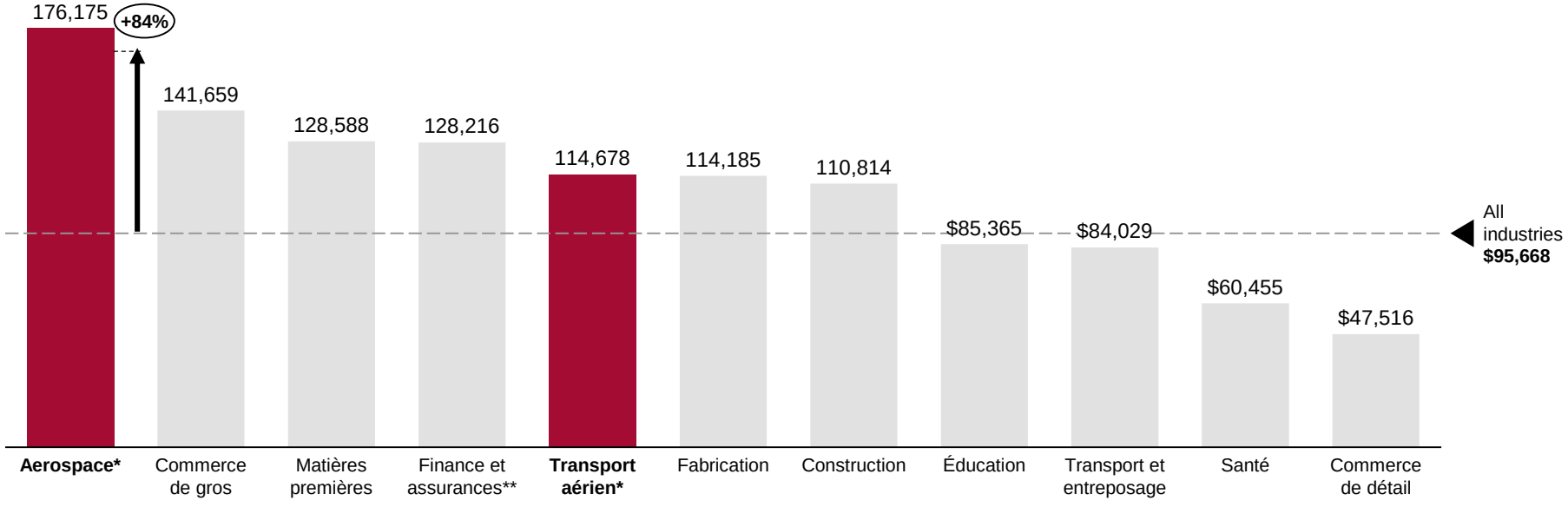


Sources: Aéro Montréal, "Aerospace Sector" (2019); The global aerospace industry, July 2018, AeroDynamic Advisory, "The Global Aerospace Industry" (2018); Statistics Canada, Labour Force Survey; KPMG analysis.

Above-average productivity

The aerospace sector's productivity per job is $176,175 compared to $95,668 for the average industry, a difference of 84%. The sector plays a major role in improving the overall productivity of Québec and Montréal.

GDP per job for selected sectors, Québec
2018, unless otherwise indicated; $/employment



Sources: Statistics Canada, "Gross Domestic Product (GDP) at basic prices, by industry, provinces and territories" (2016-17); KPMG analysis.

*2016 data
**2017 data

Air Canada, a fast-growing national airline

Air Canada contributes to the connectivity of Montréal's economy by facilitating the movement of goods and people.

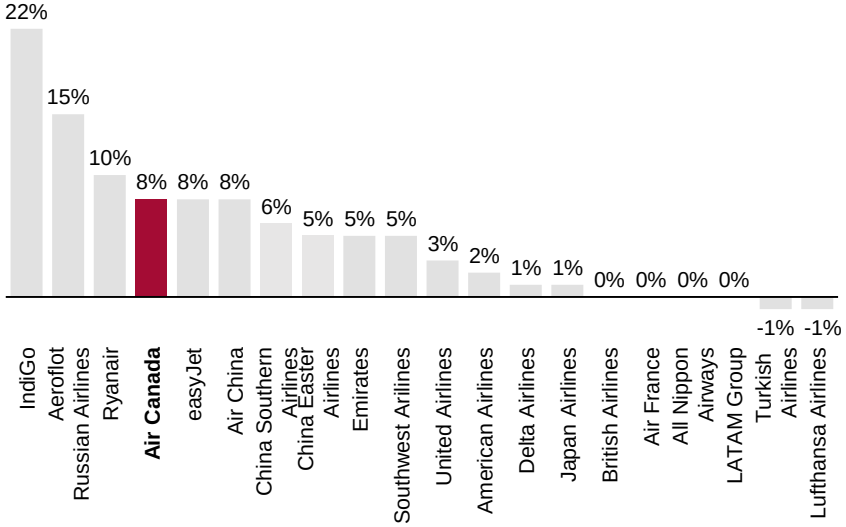
- Connectivity strengthens local businesses by enabling them to expand their markets and achieve economies of scale. It also facilitates access to a wider network of suppliers.
- Tourism, immigration and cultural exchanges of all kinds benefit from this connectivity.
- Air Canada has made Montréal its primary hub for European destinations, with connections from Canada and the United States.
- In recent years, Air Canada has also established direct flights from Montréal to Asia and Latin America.
- Through its other hubs in Toronto, Calgary and Vancouver, the airline offers a large number of additional high-frequency destinations.
- Only national airlines have the capacity to build and develop hubs in their home countries.

Before the pandemic, Air Canada was the fourth fastest growing airline in the world.

- Its number of seats offered increased by 31% between 2012 and 2017, from 46.8 million to 61.3 million.

Annual capacity growth of the world's 20 largest airlines

2017, %



Sources: OAG, "Essential metrics on the world's major airlines" (2017); KPMG analysis.

Air Canada, a major economic contribution

Air Canada is a major contributor to the industry's growth.

- Canada's largest airline and one of the 20 largest in the world.
- A leader in the Canadian transportation industry
- Its head office is in Montréal. Its repair and maintenance facilities and suppliers are located in several Canadian regions, including Montréal.

Economic contribution through greater connectivity

- Over the past few years, Air Canada has attracted an increasing volume of passengers and its international connecting hubs in Canada, including Montréal, have become more attractive to foreign travellers.
- Air Canada connects Canada's regions through its vast network, while supporting land use. Three Canadian airports (Toronto, Vancouver and Montréal) are among the 50 most connected in the world.

Economic Contribution

$10.8B	**Operating Expenses** and capital **investment** in Canada
$10.3B	**Contribution to GDP** of Canada through Air Canada's spending and investments
$10.9B	Contribution to Canada's GDP through the impact of Air Canada's network connectivity (catalytic impact)
$47B	Total economic output generated by Air Canada's activities
$1.9B	The **federal government** received **$0.9 billion**, **provincial governments** received **$0.7 billion** and municipal governments received $0.3 billion
$5.4G	More than **5 million** foreign **passengers** travelled to Canada on Air Canada flights, **spending $5.4 billion** in Canada.
$3.4B	This spending, facilitated by the presence of Air Canada, **added $3.4 billion in value to Canada's GDP** in 2017

Sources: KPMG report on Air Canada's economic contribution to Canada 2017, InterVISTA's report, "The Catalytic Impacts of Air Canada's Connectivity 2019," KPMG analysis.

Air Transat, a major airline company based in Montréal

Transat A.T. Inc. is a major integrated international tourism company specializing in holiday travel, offering packages, hotel stays and air transportation. Its head office is located in Montréal and employed some 5,500 employees worldwide before the pandemic.

Its subsidiary, Air Transat, offers some 60 international destinations in more than 25 countries in the Americas and Europe, as well as domestic and connecting flights in Canada.

Before the pandemic, the airline carried some five million passengers, mainly to European summer and southbound winter destinations.

Since 2019, Transat has been involved in a transaction for its acquisition by Air Canada. Both players are still awaiting regulatory approvals

The uncertainty related to obtaining regulatory approvals makes the management of the pandemic crisis particularly complex for Transat and its subsidiary.

Source www.airtransat.com; online https://www.worldairlineawards.com/worlds-best-leisure-airlines-2019/ KPMG analysis.

Air Transat was named the world's best leisure airline in 2019. This award is based on passenger satisfaction with the service that leisure and charter airlines provide to customers onboard and at the airport.

Best leisure airline in the world in 2019, Skytrax World Airline Awards

World's Best Leisure Airlines 2019

1	Air Transat
2	TUI Airways
3	TUIfly
4	Capital Airlines
5	SunExpress
6	Condor Airlines
7	Thomas Cook Airlines
8	Sunwing Airlines
9	TUIfly Nordic
10	Arkefly

An airport connected to the world

Montréal-Trudeau Airport ranks 41st among international airports, as measured by the ratio of scheduled international destinations to all destinations served.

- Montréal ranks ahead of the airports of several major international cities such as Barcelona and Boston.
- At Montréal's airport, 58% of flights are connections to other destinations, making Montréal a world-class hub.

Ranking of airports according to their level of international connectivity
2019

Rank	Airport	Country	Connectivity Index*	Main airline	Connecting flights
39	NRT	Japan	128	All Nippon Airways	44%
40	ZRH	Switzerland	114	SWISS	54%
41	**YUL**	**Canada**	**112**	**Air Canada**	**58%**
42	VIE	Austria	109	Austrian Airlines AG dba Austrian	50%
43	SGN	Vietnam	108	Vietnam Airlines	37%
44	BOS	USA	107	JetBlue Airways Corporation	27%
45%	BCN	Spain	102	Vueling Airlines	42%

Sources: OAG, "MegaHubs" (2019); KPMG analysis.

* Note*: The index is calculated by measuring the number of scheduled connections to international destinations in relation to the total number of destinations served from the airport.

A national and regional connections hub

Some 30 airlines serve Montréal-Trudeau, a regional and national transportation hub.

- About ten regional airlines offer regular flights to the regions of Québec, the most important being Air Canada. Pascan Aviation, Nolinor Aviation and Air Inuit serve specific geographic markets.

The main airlines in Québec and their operational activities
2020

Major Airlines		Type of service in Canada
Air Canada	AIR CANADA	> Regional/National
Air Transat	Air transat	> National
Westjet	WESTJET	> Regional/National
Sunwing	sunwing	> National
Air Creebec	airCreebec	> Regional
Air Inuit	Air Inuit	> Regional
First Air	FirstAir	> Regional/National
Porter Airlines	porter	> Regional
Pascan aviation	PASCAN AVIATION	> Regional/National
Nolinor aviation	NOLINOR Aviation	> Regional/National

Sources: Montréal Airport, “Airlines” (2020); KPMG analysis.

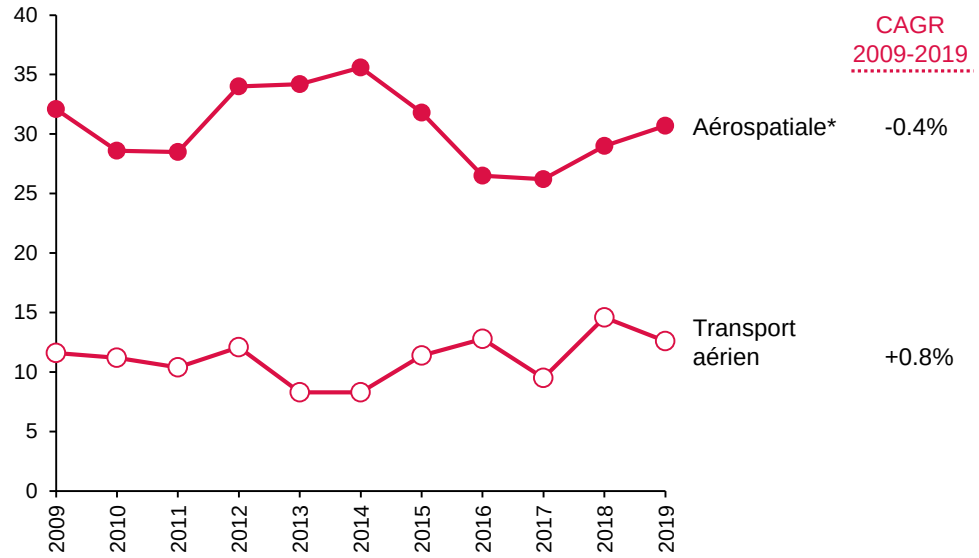
43,400 jobs in Québec

The aerospace and air transportation sectors are a major employer in Montréal (2% of CMA employment).

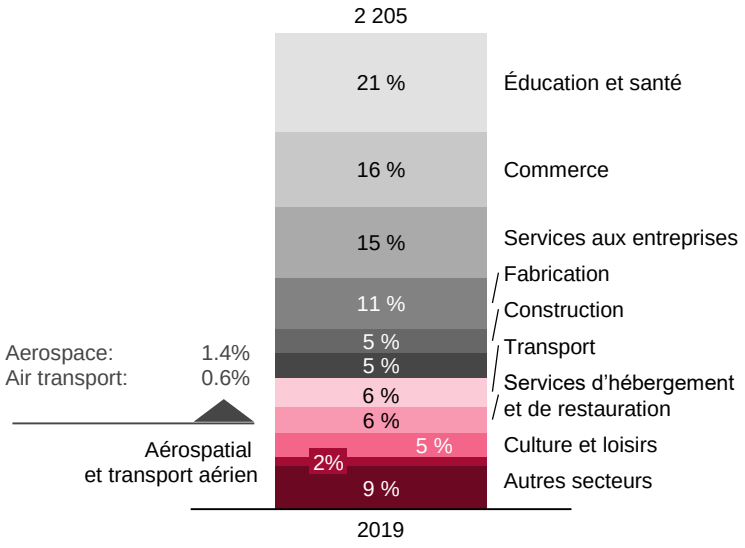
Aerospace is a cyclical industry, largely influenced by the world's economic growth rate. However, the aerospace sector has always maintained at least 25,000 jobs in Montréal.

In Québec, one worker in one hundred holds a job in aerospace (a proportion 1.4 times higher than in France and 2.4 times higher than in the United States). In Greater Montréal, nearly one worker in 50 is employed in an aerospace trade or profession.

Aerospace jobs, Montréal CMA
2009, 2014, 2019; thousands of jobs



Distribution of employment by sector, Montréal CMA
2019; % of total jobs, thousands of jobs



Sources: Statistics Canada, Labour Force Survey Aéro Montréal, KPMG analysis.

Skilled jobs

- The average annual salary in the aerospace and air transport sectors is $75,000 and $63,000 respectively. These wages compare favourably with the industry average.
- Each year, more than 4,500 students graduate with a specialized aerospace degree from a university, technical college, trade school or continuing education institute. In the CMA, 85% of aerospace employees have at least one college diploma, compared with 75% for all industries.

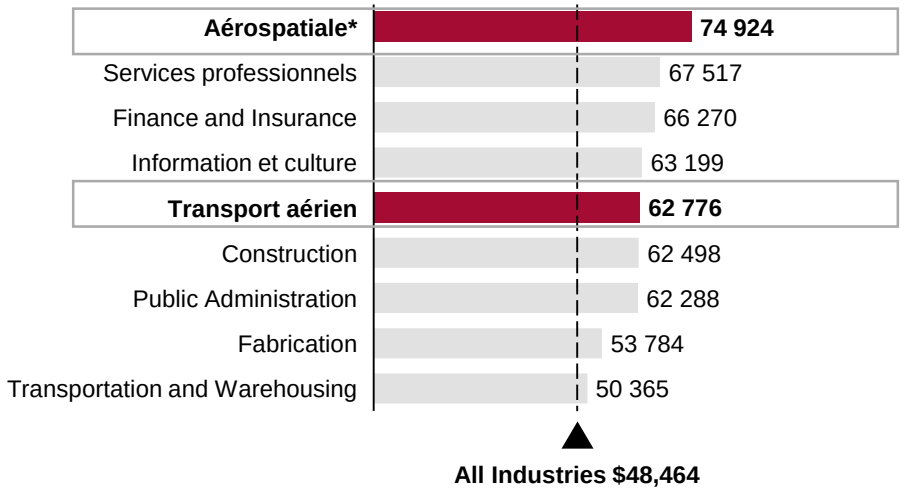
Specialized programs

The aerospace sector requires skilled labour and has a leverage effect on the education system.

- Some ten specialized aerospace graduate programs are offered by universities designated as Montréal Aerospace Institutes.
- The École nationale d'aérotechnique de Montréal is the largest aerotechnical educational institution in North America, along with the École des métiers de l'aérospatiale de Montréal (ÉMAM).

Annual compensation by industry, Québec

2018, in $



Graduation level, Montréal CMA

2018, %

	Aerospace[(a)]	Air transport	All industries
No certificate, diploma or accreditation	4%	2%	7%
High School Diploma	12%	21%	18%
Apprenticeship, trade school, college, CEGEP diploma	**45%**	**44%**	**33%**
University diploma below bachelor's degree	4%	6%	5%
Bachelor's or higher degree	**36%**	27%	**37%**

Sources: Statistics Canada, "Average weekly earnings by industry, annual"; Statistics Canada, Labour Force Survey; Montréal International, "Montréal: A major global aerospace centre";KPMG analysis.

(a) Note: Data for Aerospace product and parts manufacturing (NAICS, 3364)

1

THE SITUATION BEFORE COVID-19

- The sector's strategic importance for the economy of Greater Montréal
- The main development issues before COVID-19

Before the pandemic, the sector was facing a number of problems

A PROBLEM OF PERCEPTION – Government support and the restructuring of certain contractors affect public perception. The same is true for regional service with costs deemed high by consumers.

INTENSE GLOBAL COMPETITION – Airlines, airports and prime contractors are in a constant battle.

AN INDUSTRY IN TRANSFORMATION – Aerospace prime contractors and their suppliers have to adapt to fundamental changes.

A VALUE CHAIN UNDER PRESSURE – Montréal's aerospace sector contains many small companies that are lacking in size and technology. The consolidation and modernization of manufacturing processes are needed.

THE CLIMATE CHALLENGE – The global aviation industry, which is responsible for 2% of the GHGs produced by human activity, is the subject of criticism. Montréal's aerospace and air transportation sectors are eager to contribute to the collective global effort to reduce GHG emissions.

A problem of perception

Government support and the restructuring of certain contractors affect public perception.

The sector would benefit by raising awareness of its strategic importance, not only for Montréal, but for the country as a whole.

- The extent to which other countries provide direct and indirect assistance to their aerospace industries is not well known.
- Financial partners are cautious about financing this sector, which is considered cyclical.
- Despite the technological advances of the C Series (now the A-220), the program's cost overruns, Bombardier's indebtedness and stiff competition from Boeing and Airbus forced the company to undertake a restructuring of its operations.
- As the world's third largest aircraft manufacturer, Bombardier has long been perceived as one of Québec's greatest jewels. Now that the company has refocused on the business aircraft sector, there is a misconception that the entire Montréal aerospace sector has contracted.
- The perception in English Canada of sectoral aid to the aerospace sector has often led to criticism, even though half of the Canadian sector is outside Québec.

Intense global competition

All the players are fighting a constant battle on all fronts.

- Few industries experience such fierce rivalry as air transportation and aerospace. For reasons of economics, safety and national pride, governments support their aerospace sector or, at the very least, their national airline. In the United States and Europe, military spending also supports giants like Boeing and Airbus. The Canadian government's support is modest in comparison.
- The events of the last few years show that there is little room for other players such as Bombardier and Embraer in the niches held by the duopoly, especially since the costs and risks of development are considerable.
- Among airlines, the industry has largely consolidated in recent years (particularly in Europe and the United States) since the size of the airlines and their hubs is a major success factor.
- Leisure travellers use fare comparison sites to purchase their tickets, resulting in fierce price competition and reduced margins. Airlines must therefore focus on business travellers and volume, hence their efforts to increase routes and expand their fleets. The pandemic has reversed this model, whose profitability relies heavily on passenger volumes.

A global industry undergoing restructuring

Both prime contractors and their suppliers have had to adapt to fundamental changes.

- Several new aircraft development programs were delayed, with considerable technical problems and cost overruns.
  - Since March 2019, the Boeing 737 MAX has been grounded following two aircraft crashes. The accidents have been attributed to sensor failure, but the FAA's safety standards and certification process are being questioned.
- The strong competition between Boeing and Airbus has been exacerbated by the arrival of Chinese (Comac), Russian (Sukhoi) and Japanese (Mitsubishi) aircraft manufacturers.
- Two-lane wide-body jets were already at a disadvantage before the pandemic, with a decline in orders in 2019. Newer aircraft such as the A350 and the 787 Dreamliner are preferred. We have seen the premature withdrawal of the more expensive and polluting A380.
- A consolidation of suppliers is underway to better resist pressure from aircraft manufacturers to reduce costs.
  - United Technologies, owner of Pratt & Whitney, divested non-aerospace subsidiaries (Otis and Carrier) to acquire Rockwell Collins, an aerospace equipment manufacturer, in a US$30 billion transaction, becoming one of the largest suppliers in the industry.
- At the beginning of the pandemic, in April 2020, Boeing gave up on its plan to take a majority stake in the Brazilian aircraft manufacturer Embraer for US$4.2 billion.

Forbes, "In 2020, Have Boeing's Problems Just Begun?" (2020), KPMG analysis.

A value chain under pressure

The Montréal sector has a large number of small businesses that need to grow in size and invest in technology in order to better integrate.

- Major aircraft manufacturers have developed global supply chains. They issue competitive calls for tenders for the design and manufacture of integrated solutions, which take a long time and are costly to develop.
- Airframe manufacturers therefore shift some of the costs and development risks of new aircraft to their suppliers, without guaranteeing them a purchase volume that justifies the investment required.
- Contractors want to reduce their costs and put pressure on their suppliers to lower their prices.
- Before the pandemic, Québec SMEs in the aerospace supply chain were struggling to maintain the pace of growth imposed by prime contractors. They had to invest to keep pace.
- Prime contractors and OEMs expect their suppliers to use the latest advanced digital manufacturing technologies and to provide after-sales service.
- We are seeing the rise of emerging economies that not only produce at low prices, but now have higher technological capabilities.

The climate challenge

International civil aviation has set itself the objective of limiting the growth of its CO_2 emissions to zero, beginning in 2020, and then halving them by 2050 compared to their 2005 level.

Proposed measures to achieve this target

- Technological improvements, including the use of sustainable fuels
- More efficient use of aircraft
- Improvements to infrastructure, including the modernization of air traffic management
- The purchase of carbon offset credits to close the gap to the target. ICAO created the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to achieve this.

The purchase of carbon credits by passengers has increased in popularity since the rise of the “flight shaming” social movement and activist Greta Thunberg’s campaign. These credits are sold by airlines and independent organizations.

Newer aircraft use less fuel

- The A220 (ex-C Series) uses 25% less fuel per seat than the previous generation.
- Airbus has just unveiled three visual concepts for zero-emission aircraft that would be powered by hydrogen produced with renewable energy. Their entry into service is planned for 2035.
- Observers expect Boeing to follow the same path to stay in the race.
- The development and use of next-generation aircraft could incur significant costs.

2

IMPACTS OF THE CRISIS ON THE SECTOR

An ecosystem in crisis

COVID-19 has had a profound impact on the global ecosystem's key performance indicators in 2020

ECONOMY

Global GDP

-5.2%

Volume of international trade

-13 to -32%

Tourist destinations with no access restrictions

96%

International Tourism

~$1 trillion

AIRLINES

Airline revenues

~$419 billion

48%

Reduction of RPKs (Revenue Passenger Kilometres)

Reduction of passenger-km

~1,100 million PAX

AIRPORTS

Decrease in air traffic

-50%

Loss of airport revenues worldwide

-57%

~$97 billion

INDUSTRY PLAYERS*

	BOEING	AIRBUS
Aircraft deliveries	-78%	-50%
New orders	59	369
Cancellation of orders	-43	-67
Revenues of prime contractors*	-65%	-55%

Sources: Airbus, "Orders and deliveries" (2020); Boeing, "Orders and deliveries" (2020); ICAO, "Effects of Novel Coronavirus on Civil Aviation" (2020); IATA, "COVID-19 Wider economic impact from air transport collapse" (2020).

*Note: 2019 vs 2020

Prime contractors and suppliers

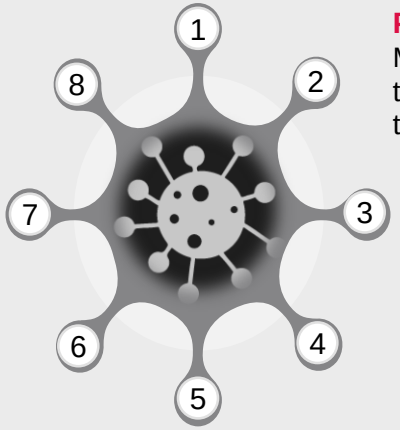
Short-term impacts

Layoffs and retirement of workers
Both among prime contractors and suppliers. For the aerospace manufacturing sector, Aéro Montréal estimates 4,300 job cuts.

Reduction of maintenance, repair and overhaul (MRO) activities
With fleets grounded, flying hours add up more slowly and maintenance is less frequent.

Reduction of orders in supply chains
Prime contractors are reducing their orders from all suppliers.

Postponement and cancellation of orders
Many airlines are simply postponing or cancelling their orders. These delays have a domino effect on the aerospace chain.



Increased pressure on liquidity
Prime contractors are managing their cash tightly to offset the decline in revenues from the sale and delivery of equipment. This tightening of liquidity is having an impact on the supply chain.

Reduction of production rates
Significant reduction in production rates and the reorganization of manufacturing capacities.

Accumulation of aircraft inventories
As a result of delays in taking possession of ordered aircraft, manufacturers are rapidly accumulating aircraft, despite the decline in production rates.

Cost reduction
Review of all costs deemed non-essential in the short term.

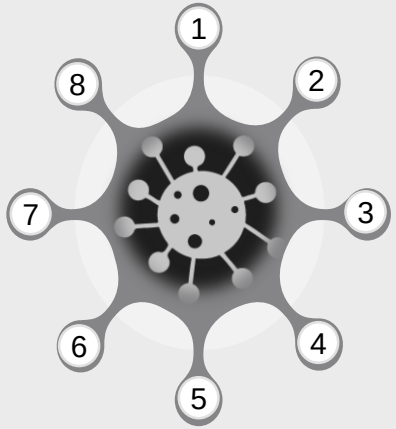
Prime contractors and suppliers

Long-term impacts

Permanent reduction in manufacturing capacity
Reduction and reorganization of the entire aerospace chain's manufacturing capacity. Potential reconsideration of new manufacturing processes and new product development.

Lower growth forecasts
The number of units ordered may decrease, but more importantly, the models may change. Health and environmental issues could favour smaller and more environmentally friendly aircraft.

Disinterest among young people
Sector difficulties could discourage young people from choosing apprenticeships. Educational institutions such as ÉNA, ÉTS and Polytechnique could experience a decline in enrolment in their aerospace programs.



Reduction in the number of suppliers
Prime contractors will seek to reduce their costs and secure their supply chains by reducing the number of suppliers.

Loss of skills within the industry
Massive layoffs and poor prospects could discourage employees, who may be attracted to other industrial sectors.

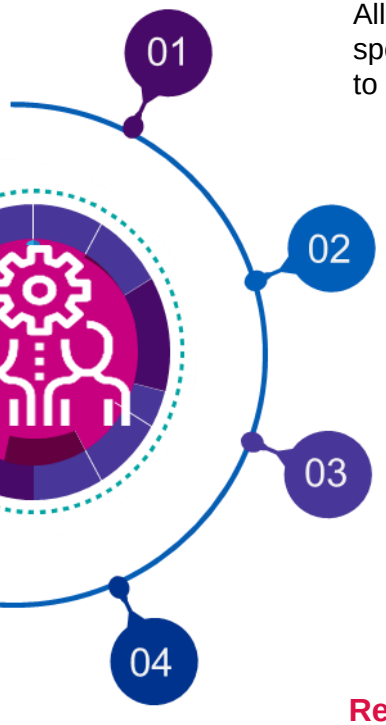
Repatriation of production chain elements
Boeing and Airbus could seek to secure their operations through the internal reintegration of critical operations.

Financing conditions for companies
The outlook for the sector will have a negative impact on the risk analysis of financial partners.
The availability of capital may become an issue, particularly for smaller companies. A deterioration of balance sheets may result.

Relocation of the supply chain
With the pandemic putting stress on global supply chains, Boeing and Airbus may be tempted to source more from local suppliers.
In exchange for their financial support, the US and European governments could press for the repatriation of manufacturing activities.

Prime contractors and suppliers

Measures taken



Cost reductions and preservation of liquidity

All players, whether they are manufacturers of aircraft, engines or parts, as well as companies specializing in aircraft repair, maintenance and overhaul, will have to quickly review their operations to reduce their operating costs. Companies will also seek to secure sources of liquidity.

Development of new aircraft

Boeing and Airbus will develop new, smaller and more energy-efficient aircraft. The development of these new models will have an impact on all players in the aerospace sector.

Research and development activities

The development of new "greener" and more efficient models will take time, will require significant financial resources and a strategy of risk-sharing between actors. Membership in the two major industrial value chains – Airbus and Boeing – is critical. In order to maintain their place in these ecosystems, prime contractors and equipment manufacturers will seek to invest in product and manufacturing engineering.

Restructuring and business mergers

Faced with a long-term recovery, some players will need to restructure their operations, which may mean fast-tracking sales and mergers. Many parts and equipment suppliers may not have the financial capacity to wait for a return to normal. The need to invest in R&D and process improvement could be an incentive for them to sell.

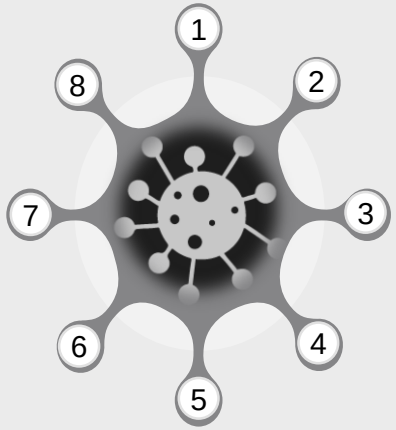
Airlines

Short-term impacts

Significant financial losses
Sharp decline in load factor and passenger yields. Financial losses have been significant, affecting cash flows and balance sheets. Several airlines have ceased operations due to the severity of the crisis.

Border closures
Major jurisdictions, including Canada, are rapidly closing their borders and implementing restrictive travel conditions.

Maintenance of qualifications
Training requirements for crews and personnel must be maintained.
Skills maintenance programs must be deployed.



Quarantine requirements
Major economies and popular destinations are implementing restrictive measures, including quarantine requirements. Canada has some of the most restrictive quarantine measures in the world.

Grounded civil aviation
With the majority of aircraft grounded, orders are being cancelled, deliveries postponed, and older or less-capable aircraft models are being withdrawn due to over-capacity.

Restoring passenger confidence
Airlines must put in place new security measures to reassure passengers. They need to promote safe travel.

Maintaining priority flights
Airlines maintain service on priority routes, taking into account the remoteness of communities and the size of cities, despite low occupancy rates.

Protection of staff and travellers
Airlines must review their procedures and the way they provide services to ensure the protection of their staff and passengers.

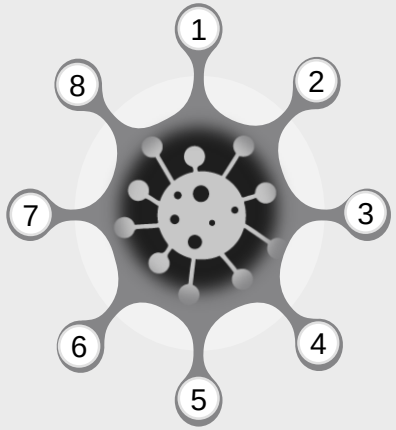
Airlines

Long-term impacts

Impact on costs
Ticket prices could be affected by the reduction in flight frequency and flight capacity, coupled with the increase in operational costs related to new health measures.

Baggage policies
Airlines may want to change their checked baggage policies and impose additional restrictions on carry-on luggage.

In-flight meal service
Airlines will have to come up with new ideas to provide in-flight meal service while limiting contact.



Mobile tickets and boarding passes
To avoid human-to-human and human-to-machine contact, airlines will rely more on electronic tickets and mobile boarding passes.

Cabin crew safety
Safety needs will have an impact on physical contact between passengers and cabin crew.

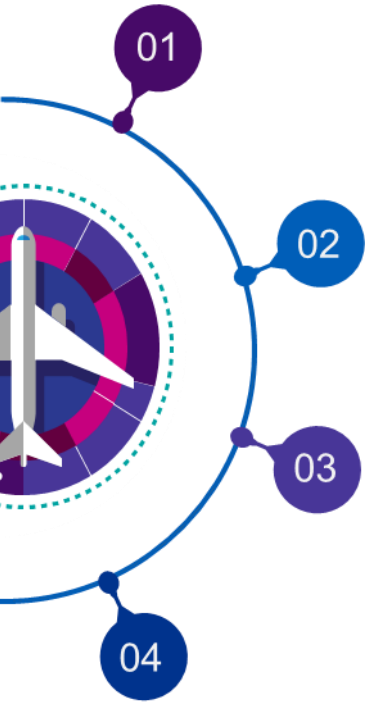
Boarding procedures
Boarding times will increase due to enhanced passenger health screening.

Longer turnaround times
Health checks and aircraft cleaning requirements will result in longer turnaround times, reducing aircraft utilization.

Passenger protection inside aircraft
Some airlines may revise their protection and control measures inside the aircraft. Others may turn to biosecurity and passenger screening measures.

Airlines

Measures taken



Reduction of operations

The major airlines operating in Montréal, including Air Canada and Air Transat, have rapidly and radically reduced their operations. This has resulted in both temporary and permanent layoffs. Border closures have led to a significant reduction in the number of destinations and flight frequencies. International flights have been the hardest hit.

Promoting safe travel

Airlines are deploying various measures to reassure passengers and encourage them to fly again. These include insurance products covering COVID-19 risks, screening tests and new health measures.

Fleet modification

Airlines around the world are reviewing their fleets. They are moving away from large aircraft such as the A380, which are difficult to fill. They are also scrapping old B747s and using smaller planes, which are easier to fill while still being long-range aircraft.

Finding financial solutions

The sector’s slow recovery is forcing airlines to review their operations and find sources of financing. The main Canadian airlines are finding themselves in a difficult financial situation, and are waiting financial assistance from governments.

Montréal-Trudeau International Airport

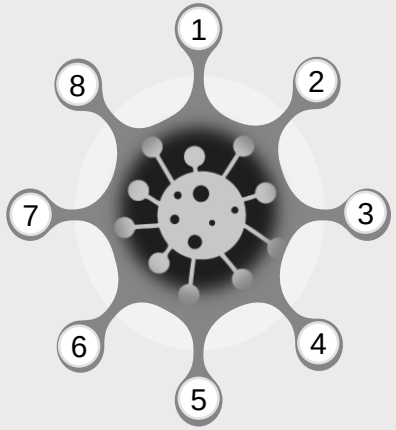
Short-term impacts

Global passenger traffic (revenue passenger kilometres or RPKs) is not expected to return to previous levels until 2024, one year later than anticipated.

Decrease in aeronautical revenues
The decrease in passenger traffic of 14.5 million (-71%) compared with 2019 will result in revenue losses of approximately $500 million below forecast. Six months after the onset of the pandemic, passenger volumes are still down 90%.

Cost reduction measures
Workforce reduction of 30%, from 600 to 428 employees.

Emergency health measures
Implementation of health measures for staff and passengers.



Transport Canada rent relief
The Canadian government is waiving ground lease rents from March 2020 to December 2020. This amount is normally equal to 12% of revenues, which is currently in sharp decline.

Investment projects on hold
All construction projects that do not protect the immediate integrity of assets have been halted. The 2020 investment budget has been cut by 50%.

Asset impairment
Reconstruction of the landing stage and of a runway, which was urgently needed, has been postponed.

Decrease in non-aeronautical revenues
The terminal is almost deserted, affecting all businesses that serve aircraft and passengers. Leaseholders are struggling to pay their rents.

Deteriorated financing conditions
With revenues in sharp decline, ADM can no longer meet its financing requirements under acceptable conditions with its financial partners, both for its operational needs and for its investments.

Sources: Montréal Airport “Latest Updates and Measures” (2020)KPMG analysis.

Montréal-Trudeau International Airport

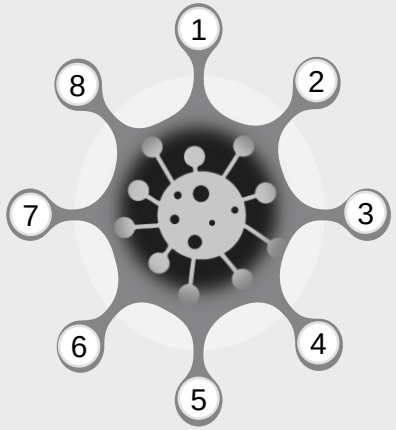
Long-term impacts

Physical distancing and passenger screening will become the norm at international airports.

Passenger security screening
ADM will need to review its policies and standard operating procedures, scanning devices, training programs, physical layout, etc., in response to current and future threats.

Longer wait times
New queue management methods, adoption of digitization and smart technologies.

Replacement of biometric systems and touch screens
Non-contact technology such as face scanning and iris scanning will be replacement options.



Services for vulnerable passengers
New designated service counters to provide health and security checks for vulnerable passengers.

Immigration requirements
Minimal contact, elimination of redundant procedures, use of technology to check passenger identity and verify health records.

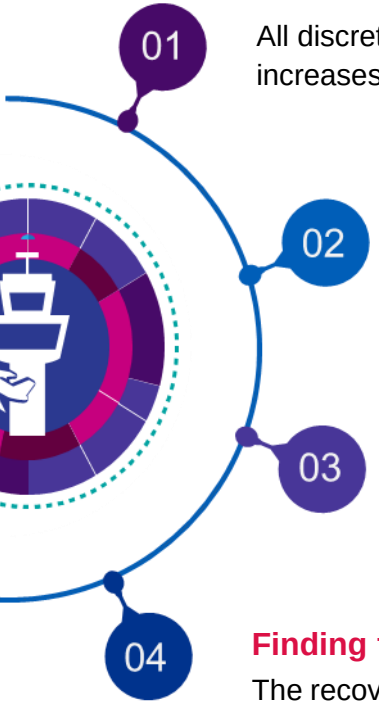
Health checks
Screening measures, compliance with new regulatory standards.

Block chain and AI-based solutions
Integration between the aviation value chain, the airport and airlines, providing a seamless experience for passengers while ensuring transaction and data security.

Baggage handling
Baggage restrictions, new policies and procedures for contactless baggage handling.

Montréal-Trudeau International Airport

Measures taken



Control of operating costs

All discretionary expenses to be reviewed. Payroll reduction with a hiring freeze, cancellation of salary increases and a workforce reduction of 172 employees.

Infrastructure projects on hold

All infrastructure development and upgrading projects have been suspended due to lack of financing. Only projects necessary for the immediate integrity of assets have been maintained. Possible delay in the REM station construction.

Health measures

To reassure travellers, airport authorities will implement passenger health checks. Along with other Canadian airports, ADM will administer rapid COVID-19 tests for departing and arriving travellers.

Finding financial solutions

The recovery of the aviation sector will be slow and a return to break-even may be delayed. Airports need significant government support to make up for lost revenues.

3

SECTOR SUPPORT MEASURES

Cross-sectoral support measures prior to COVID-19

R&D tax credits are the main general assistance measure used by Montréal's aerospace industry.

- The federal government offers an investment tax credit for scientific research and experimental development. This partially refundable 15% credit can go as high as 35% for Canadian-controlled companies, for a maximum eligible expenditure of $3 million.
- The Québec government offers a 14% refundable credit, which can increase up to 30% for the first $3 million.
- One study estimates that the credits to Québec-based aerospace companies totalled approximately $27 million in 2018.

The Strategic Innovation Fund (SIF), established in 2017 by the federal government, supports R&D and other development objectives across all sectors of the economy, in the form of a generally repayable contribution.

SUMMARY OF FSI INVESTMENTS IN AUGUST 2020

> Six Québec-based aerospace companies (including a Canadian consortium) obtained $354 million

> 64 projects across the country

> $2.3 billion in SIF contributions

> 67,000 jobs created and maintained (excluding indirect, induced and construction employment)

Sources: Institut du Québec, "Les politiques de soutien à l'aérospatiale" (2020); Government of Canada, "Strategic Innovation Fund" (2020); KPMG analysis.

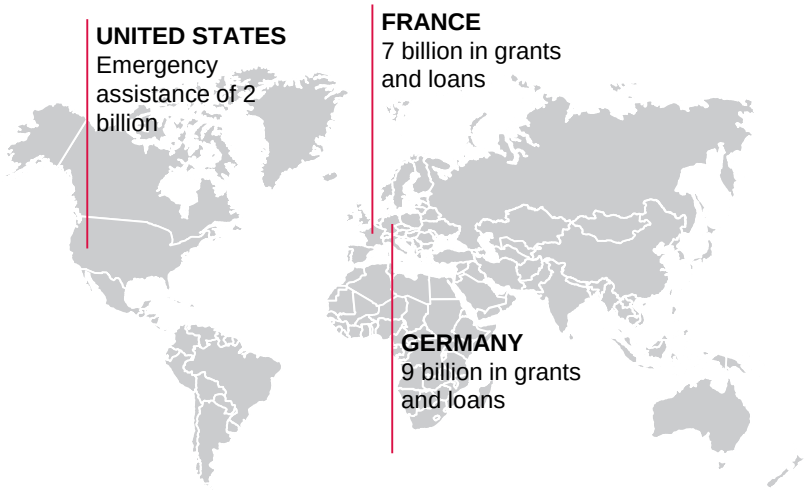
Cross-sectoral export support measures prior to COVID-19

Export Development Canada finances foreign customers of Canadian exporters and insures Canadian investments in at-risk countries.

- EDC has financed many of Bombardier's aircraft buyers.
- Its balance sheet shows gross loans, loan commitments and loan guarantees of $12 billion for aerospace, representing 16% of its total exposure.
- EDC's goal is to reduce its portfolio's exposure to climate risk by 15% over five years, with the air transport sector accounting for 10% of the portfolio. It has therefore begun to reduce the weight of this sector, which declined by 12.5% between 2018 and 2019.
- It should be noted that EDC is self-financing and does not receive a budgetary contribution from the federal government. It raises its capital on the public markets, makes loans at market rates and generates profits.

Loans for financing foreign buyers are commonplace in the aerospace industry; agencies like EDC operate in the U.S., Europe and Japan.

Examples of foreign air industry subsidies
2020; in $



Sources: EDC, "Annual Report" (2019); Nippon Export and Investment Insurance; KPMG analysis.

Sector-specific support measures prior to COVID-19

Aerospace laments the disappearance of a specialized program to fund its R&D.

- From the late 1950s to 2017, the federal government had consistently offered a repayable R&D loan program specific to the aerospace sector.
- Since 2017, aerospace must compete for a portion of the Strategic Innovation Fund, described earlier, which is open to all sectors of the economy and has a range of objectives.

In May 2016, the Government of Québec announced the 2016–2026 Québec Aerospace Strategy.

- It aims to strengthen and diversify the structure of the industry and to encourage growth by supporting projects, investing in the workforce and assisting SMEs in their development.
- We note that the Québec Aerospace Strategy is currently being revamped by government authorities.

The 2016–2021 Québec Aerospace Strategy included an initial envelope of $250 million. We are currently awaiting the envelope for 2021–2026.

- Attract prime contractors and major suppliers, encourage certain technologies such as UAVs, invest in the workforce, promote the transition of SMEs to Industry 4.0, encourage mergers and acquisitions, stimulate exports, support innovation, particularly among SMEs.

Allocation of 2016-2026 Québec Aerospace Strategy funding in line with strategic priorities

2016; in millions of dollars

Priority	Description of strategic objectives	2016–2021 Funding*
1	Strengthen and diversify the industry structure	$61.5M
2	Bolster industry growth: support projects and invest in the workforce	$69.2M
3	Assist SMEs in their development	$35.3M
4	Promote innovation	$81.1M

Sources: Institut du Québec, “Les politiques de soutien à l’aérospatiale” (2020); Government of Québec, “Québec Aerospace Strategy” (2016); KPMG analysis.

* Excluding additional credit rights

Several countries were already supporting their aerospace sector before COVID-19

For more than 15 years, the United States and the European Union have accused each other of illegally subsidizing Airbus and Boeing.

- The modalities of public aid, both direct and indirect, take many forms, reaching tens of billions of dollars.
- These protagonists are suing each other at the World Trade Organization. A year ago, the WTO agreed that the United States has the right to impose US$7.5 billion in duties on European products. Europe is waiting for a forthcoming decision on its own complaint and believes that it too will be able to impose retaliatory measures.
- That said, in 1992 both parties came to an agreement on what constitutes acceptable aid. Europe indicated this summer that it wanted to negotiate a settlement, but so far the United States has turned a deaf ear.

Governments get involved because of the extended and risky product development cycle.

- There can be up to 20 years between the development of a new aircraft or engine and the time it reaches profitability. Major innovations would not take place without government assistance.
- In countries with an aerospace industry, the national government usually provides support, but the types of aid vary greatly and are often indirect or lack transparency.
- Several countries use their defence sector to finance innovations that then find civilian uses. Given Canada's weaker defence sector, our companies are not competing on a level playing field with their counterparts in other countries.

Sources: Alain DUBUC, "Agir de façon stratégique : Les politiques de soutien à l'aérospatiale," Institut du Québec (2020); KPMG analysis.

Post-COVID-19 assistance announced to date – airlines

The United States, European Union countries, Japan, New Zealand and Brazil have provided US$152 billion in financial assistance to their airlines.

- This assistance has taken many forms, including loans, loan guarantees, equity capital, subsidies, wage subsidies, operating grants, and the reduction of fees and taxes.
- Aid may be granted industry-wide or targeted directly at the national airline. It may also be of a regulatory nature.
- In the U.S., aid accounted for 32% of ticket sales revenue last year, in France 36%, in Germany 19% and in Japan 22%. In Canada, the federal government has provided assistance equivalent to 1.3% of 2019 ticketing revenues in the form of support for employee salaries.

- The **U.S.** CARES Act allocated **US$50 billion** to support U.S. airlines until September 2020.
  - **American Airlines:** US$4.1 billion direct grant and US$1.7 billion low-interest loan against warrants to the U.S. government.
  - **Delta:** US$5.4 billion in low-interest loans against warrants.
  - **United Airlines:** US$4.5 billion.
- **Germany** provided €9 billion in exchange for a silent participation of 20% of the capital. Condor obtained €550 million in state-guaranteed loans.
- **The British government** granted £600 million to Easy Jet under the COVID Corporate Financing Facility.
- **Switzerland** guaranteed €1.2 billion in loans to Swiss and Edelweiss, two Lufthansa subsidiaries.
- **Italy** nationalized Alitalia.
- **New Zealand** loaned NZ$900 million to Air New Zealand.

Sources: Alain DUBUC, “Agir de façon stratégique : Les politiques de soutien à l’aérospatiale,” Institut du Québec (2020); Aero Montréal; KPMG analysis.

Post-COVID-19 assistance announced to date – Aerospace

France has earmarked €15 billion for Air France, Airbus and major suppliers in the form of direct investment, grants, loans and loan guarantees. The measures include a fund jointly financed by the government and contractors to support small suppliers.

- In return, companies will have to invest more in low-emission aircraft powered by electricity, hydrogen or other means.

A three-pronged plan:

> **Grouping of SMEs:** to support the consolidation of SMEs and a catching-up process linked to the digitization and robotization of SMEs – Creation of an investment fund of €1 billion in equity capital and a support fund of €300 million in direct government aid.

> **Decarbonization of the sector:** investment of €1.5 billion over three years to support R&D in aeronautics (€1.1 billion from the State and €400 million from European funds). The aim is to achieve a carbon-neutral aircraft by 2035 instead of 2050 – Air France will receive 7 billion in support in exchange for requirements intended to accelerate the environmental transition.

> **Safeguarding employment:** setting up a long-term part-time work agreement (*Activité partielle de longue durée*), establishing an export guarantee and easing the terms of reimbursement for Airbus aircraft purchases

Other measures:

- €600 million fund for advance military orders
- €100 million for the development of a light surveillance and reconnaissance aircraft and UAVs for the French Navy
- Charter between manufacturers (Airbus, Safran, Dassault, Thales) and their subcontractors to promote French competitiveness and ensure that production is maintained on a French scale

Sources: Alain DUBUC, “Agir de façon stratégique : Les politiques de soutien à l’aérospatiale,” Institut du Québec (2020); Aero Montréal; KPMG analysis.

4

BUSINESS OPPORTUNITIES

Space and Defence Sectors

- Québec, and particularly the Montréal region, has a rich space heritage and an industrial base with niche markets in areas such as space operations, satellite communications, space robotics, space radars and optical scientific instruments, as well as value-added Earth Observation (EO) and geospatial services.
- With an annual budget of more than $250 million, the Canadian Space Agency (CSA) is involved in a variety of projects to support research and development for companies in the space sector. It is also engaged with its international partners such as ESA and NASA in major projects such as the Lunar Gateway.
- Many of Canada's companies active in the space sector are based in the Montréal area. Aerospace OEMs and suppliers may wish to explore how they could benefit from space sector projects here and abroad.

- For some years now, the Canadian government has been engaged in a major program to renew the capabilities of its air forces. The sums involved are considerable, supporting new fighter aircraft, air-to-air refuelling aircraft, unmanned aerial vehicles and search and rescue aircraft. Some of these initiatives, such as rescue apparatus programs, are already under way. Others, such as the replacement of the CF-18s, are still to come.
- While the ability of our prime contractors to take direct advantage of these opportunities is limited, several of our OEMs and suppliers could find a way to participate in these high value-added programs. In fact, some are already doing so.
- The federal government's Industrial and Technological Benefits (ITB) Policy offers a real chance for our aerospace players to win a portion of the contracts. By requiring companies that win procurement contracts to conduct business activities in Canada of equivalent value, the Policy creates conditions for partnerships.

Sources: Canadian Space Agency, "CSA Annual Report" (2019); KPMG analysis.

Building on a Canadian response to the climate challenge

Aerospace is converging on a forward-looking national project with promising commercial opportunities that will enhance its image.

- Despite the pandemic, the public, governments, the business community and the financial sector are increasingly determined to tackle global warming. The aviation and aerospace industries are already active in this area, including through a sustainable mobility project led by the Aéro Montréal industrial cluster.
- Although recent aircraft are more fuel-efficient, the global industry is already working on the next generation of “green” aircraft and complementary solutions to reduce CO_2 emissions.
- Montréal engine manufacturers are working on a new generation of more fuel-efficient engines.
- With the SA2GE program, several Montréal-based companies and university researchers are looking to improve components and equipment to make them more efficient and lighter and to reduce pollution.
- The SAF + consortium is proposing a solution developed in Montréal to capture industrial CO_2 emissions and combine them with hydrogen produced from renewable electricity to make a clean fuel for aircraft. This circular economy solution reduces the carbon footprint by 80% compared to conventional kerosene.

AI at the service of aviation

Planning and managing the operations of a large airline is highly complex and artificial intelligence improves performance. With its expertise in AI, Montréal can help this sector reduce its costs and better serve travellers.

Pricing, flight planning and capacity optimization – both for passengers and cargo – are examples of airline activities that generate and rely on massive data.

Artificial intelligence offers promising solutions for optimizing these activities.

- AI can help create virtual assistants to answer customer questions in natural language and to automate logistics operations.
- Facial recognition can be used to verify the identity of customers and can facilitate baggage retrieval.
- AI can also help predict and inform travellers of delays.
- And in a post-COVID-19 world, AI can reduce the kind of human contact that can transmit viruses.

5

COURSES OF ACTION FOR RELAUNCHING THE SECTOR

A robust and rapid intervention is needed

All the stakeholders interviewed for this study recognize the strategic contribution of the aerospace and air transportation sectors to the economy of the Montréal agglomeration.

These sectors are currently going through a crisis unprecedented in their history. Our airlines and ADM are experiencing a sharp drop in business to an unsustainable level.

The aerospace industry is faced with a new reality to which it is struggling to adapt.

The measures set out below should therefore be considered immediately. The recovery of these sectors requires robust and rapid intervention by Canadian and Québec government authorities.

The following courses of action are being pursued by the Chamber and by Québec's aerospace cluster, Aéro Montréal. They target industry and governments.

Courses of action

TARGET 1: INDUSTRY, ECONOMIC DEVELOPMENT ORGANIZATIONS AND EDUCATIONAL INSTITUTIONS

1. **Develop an integrated strategic R&D proposal to develop "green" aircraft and their components**

2. **Integrate new technologies in manufacturing engineering**
   A. Commit to innovation on a larger scale (e.g., greener products and processes) and get on board with Industry 4.0 (e.g., adoption of digital technologies)
   B. Actively participate in the collaborative projects of the Aéro Montréal cluster (e.g., Mach Fab 4.0) and in CRIAQ's programs and projects

3. **Strengthen efforts to attract and retain talent, promote skills enhancement and retraining, and anticipate labour needs**
   A. In collaboration with specialized educational institutions, CAMAQ and Aéro Montréal, promote the sector's potential among young people and workers looking to retrain

Courses of action

TARGET 2: GOVERNMENTS

4. Quickly adopt an ambitious Canadian aerospace policy with a focus on new technologies to help reduce our carbon footprint and keep us on the leading edge

A. Develop a major ecomobility aerospace innovation project to position Québec as a major player in the green shift

5. Secure financing for aerospace companies

A. Secure financing of working capital for SMEs in times of crisis

B. Establish an aerospace fund aimed at supply chain growth and consolidation

6. Support innovation and the use of new technologies

A. Re-establish the specialized program to fund aerospace R&D, including green aviation

B. Substantially improve support to SMEs for the implementation of digital technologies and advanced manufacturing

7. Support business development efforts in the defence and space sectors

A. Further promote local content in National Defence and Canadian Space Agency contracts

B. Adapt the Industrial and Technological Benefits (ITB) policy so that it provides more support to local businesses in calculating value propositions when awarding contracts

8. Resume domestic and international flights in a safe manner

A. Allow flights to resume in a safe and progressive manner by following ICAO, IATA and federal government health measures and best practices

B. Review the quarantine requirement for travellers arriving in Canada who have undergone rapid screening. Implement a protocol for the rapid screening of travellers departing from Canadian airports

C. Establish corridors (or bubbles) between destinations to control the pandemic

Courses of action

TARGET 2: GOVERNMENTS

9. Provide financial support for ADM

Until normal operations resume, ADM must maintain its activities. Financial support should take two forms: short-term financial support to offset declining revenues and support for the continuation of infrastructure projects.

10. Provide financial support for Canadian airlines

A. Airlines serving Montréal-Trudeau Airport must meet contractual obligations and absorb high fixed costs that drain their cash flow, in addition to incurring additional costs to implement new security measures. With the very limited assistance received so far, they will not be able to compete with foreign companies that enjoy strong support from their respective governments.

B. In the context of the pandemic and its impact on airlines, authorize Air Canada's acquisition of Transat as soon as possible, in order to consolidate Montréal's role in the sector and promote its recovery.

11. Review the user-pay model

Suspend payments to NAV Canada, CATSA and Transport Canada for both ADM and airlines. The suspension should be long enough for the industry to regain its level of activity. The user-pay principle has its merits, but it is being taken to extremes in Canada and its application needs to be thoroughly reviewed to ensure that the charges are comparable to those in other countries.

APPENDICES

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- Persons consulted

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ORGANIZATION	NAME	TITLE
Aéro Montréal	Suzanne Benoit	President and CEO
ADM	Philippe Rainville	Chief Executive Officer
Air Canada	David Rheault	Managing Director, Government and Community Relations
Air Transat	Christophe Hennebelle	Vice President, Human Resources and Corporate Affairs
Alliance for the Aerospace Recovery Committee (reporting to the Board of Directors of Aéro Montréal)	Several entities, including: Avianor, Bombardier, Canada Economic Development, Fonds de Solidarité FTQ, Meloche Group, Ministère de l'Économie et de l'Innovation du Québec, Rolls-Royce Canada, etc.	
Conseil emploi métropole (CEM)	Julie Poirier *The CEM survey on priorities for retraining and skills enhancement during and after the pandemic will allow us to identify priority actions to support talent in the aerospace sector.*	Secretary General

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