

Bridging Canada and China in Aerospace Market

Embassy of Canada, Beijing

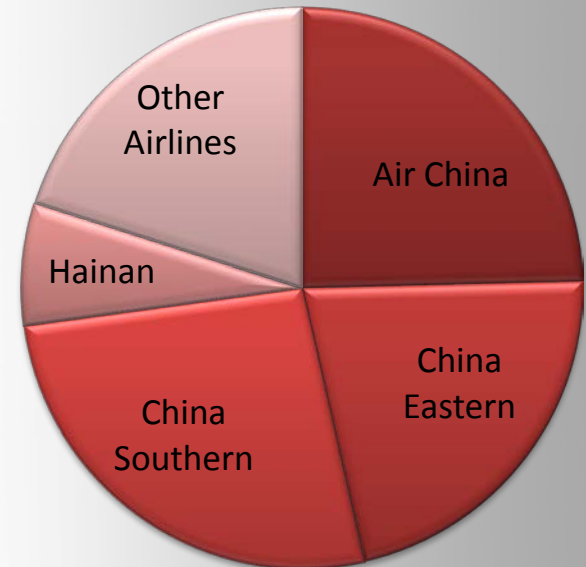
March 2015



Airlines & Aircrafts

- 46 Transport Airlines Companies
 - 36 State-Owned
 - 10 Non-State-Owned
 - 10 cargo airlines
- 4,057 Operating Aircrafts
 - 2,179 commercial transportation aircrafts
 - 1,878 general aircrafts
- 2 Major Aircraft Manufacturing Corporations (AVIC & COMAC)

Aircraft fleet / China Airlines

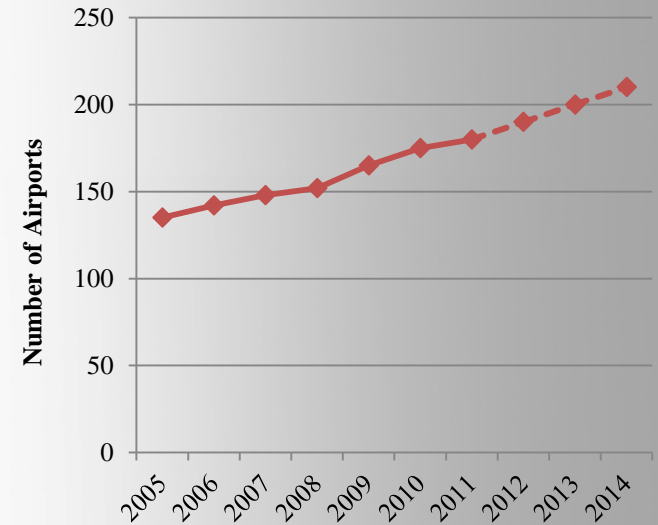


Airports & ATM Tower

- 193 Civil Airports
 - 42 International Airports
 - BCIA is 2nd busiest airport in the world
 - 24 airports with A.P.T. > 10 million
- 9 Flight Information Regions
 - 28 Upper Control Areas
 - 37 Middle & Low Control Areas

“Less than 30% of airspace is open to civil aviation”

Airports in China



Pilots

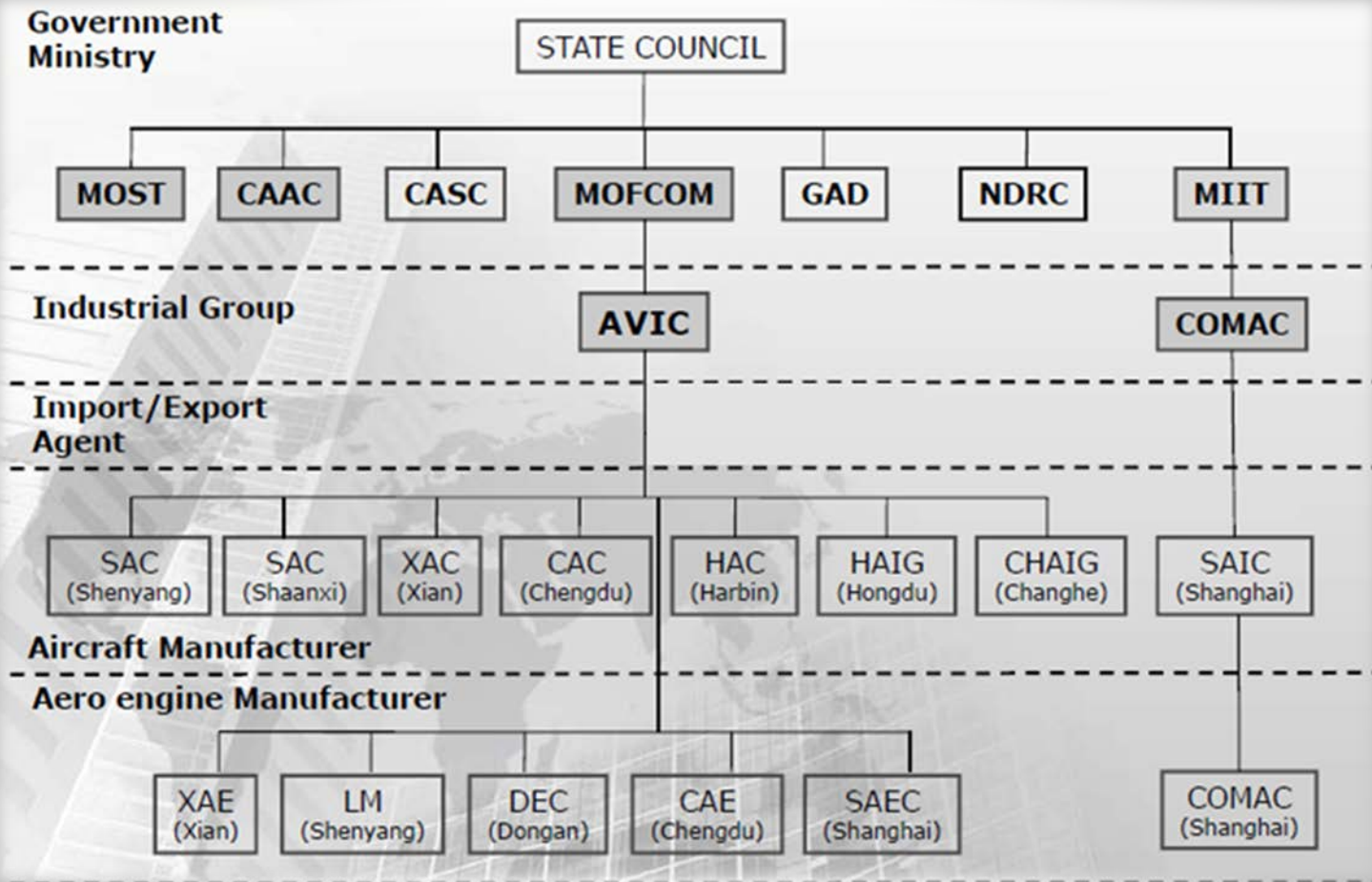
- 39,981 Pilots (for all types of aircrafts)
- 35 Certified ATPL Training Schools (21 foreign, 4 Canadian)
- 5 Major Civil Aviation Colleges/Universities

General Aviation

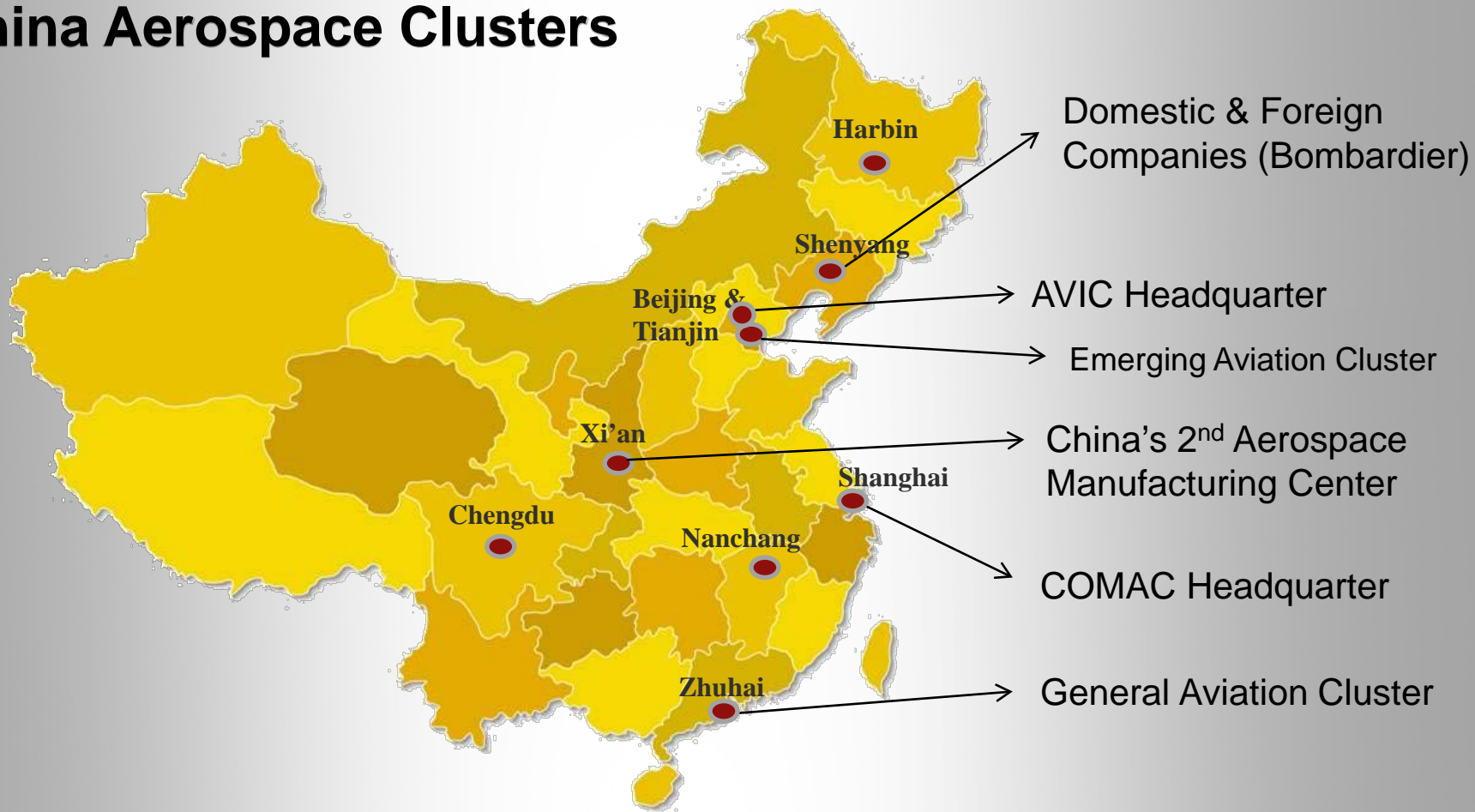
- 31% of low-altitude open areas
- 164 registered operators
- 1,878 GA Aircraft (all types, incl. fixed-wing and rotary aircraft)
 - 385 Civil Helicopters (24 from Bell Helicopter)
 - 367 business jets (110 from Bombardier)



Key Stakeholders



China Aerospace Clusters



Chinese Aircraft Program



COMAC: C919 Large Jet

With Bombardier (e.g.)

Capacity: 156 / 168 / 180

Est. maiden flight: end of 2015

Est. time of delivery: 2018

Investment: \$8 Billion

Order: 450 by Feb. 2015



COMAC: ARJ21 Twin-engine Single-aisle Regional Jet

Capacity: 70-105

Maiden Flight: Nov. 2008

Orders: 258 by Nov. 2014

Delivery: 2015 (scheduled)

Chinese Aircraft Program



AVIC XAC: MA700

Capacity: 76

Range: 1,700 km

Est. maiden flight: 2016

Est. time of delivery: 2018



AVIC GA: HO300 Multi-use Light Amphibious Aircraft

Capacity: 4-6 passengers

Maiden Flight: November 2010

Certification: 2011

Chinese Helicopter Program: AVIC Helicopter



Z-15(EC-175)
Medium Utility Helicopter

- Collaborated with Eurocopter
- Capacity: 16 passengers
- Max takeoff weight: 7 tons
- First flight: 2009
- Certification:2012



Z-11(AC311)
Light Helicopter

- Home developed
- Capacity: 6 passengers
- Max takeoff weight: 2.2 tons
- First flight: 2010
- Certification:2012



AC313
Largest helicopter
developed in China

- Capacity:27 passengers
- Max payload:13.8 tons
- First flight: 2010
- 3 PWC PT6B-67A engines

Foreign Companies Involvement

Aircrafts & Helicopter



Air traffic Management



Training Schools on ATPL (CCAR-141)

- USA: 12
- Canada: 4
- Australia: 3
- France: 2



and many more...

Canadian Companies Involvement

BOMBARDIER



China 12th Five Year Plan (2011-2015)

■ Additional Projects & Needs

- 56 New Civil Airports, 91 Expansions
- More than 257 ATC projects
- 1140 Commercial Aircrafts
- 450 Civilian Helicopter
- 1000 General Aviation Aircrafts
- 17,000 Commercial Aircrafts Pilots

“The Government plans to invest more than RMB 1,5 trillion in China’s aviation industry”



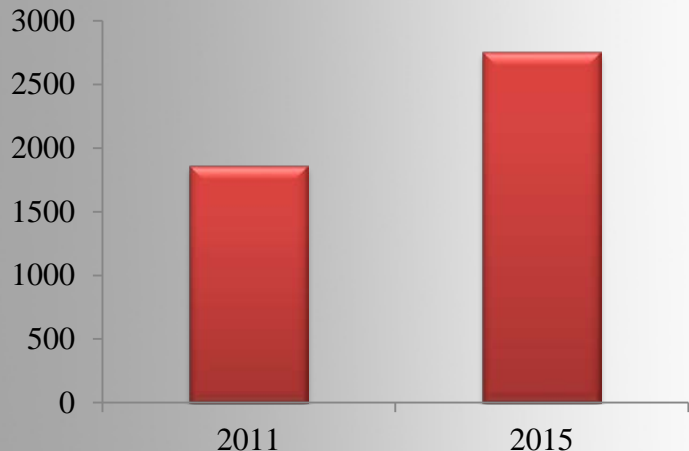
■ How will China achieve its ambitious targets?

- Increase fiscal support
- Enlarge international S&T cooperation
- Develop high-tech technology

“China plans to create a world-class civil aviation industry”

Commercial Aircrafts

Number of Aircraft

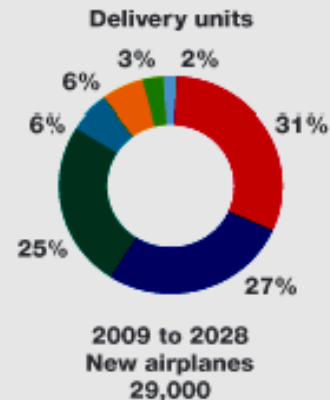


- Averaged double-digit growth for past 30 years, domestic air travel forecast to grow by 11% p.a. to 2020
- Majority of the demand: small & intermediate twin-aisle aircraft
- Opportunities for lower-tier Canadian firms to work as with Tier 1s companies (Bombardier, COMAC, etc.)
 - Supply and research/design collaborative
 - Subcontracting

“Chinese airlines will require 5000 new commercial aircraft valued at USD 600 billion over the next 20 years”

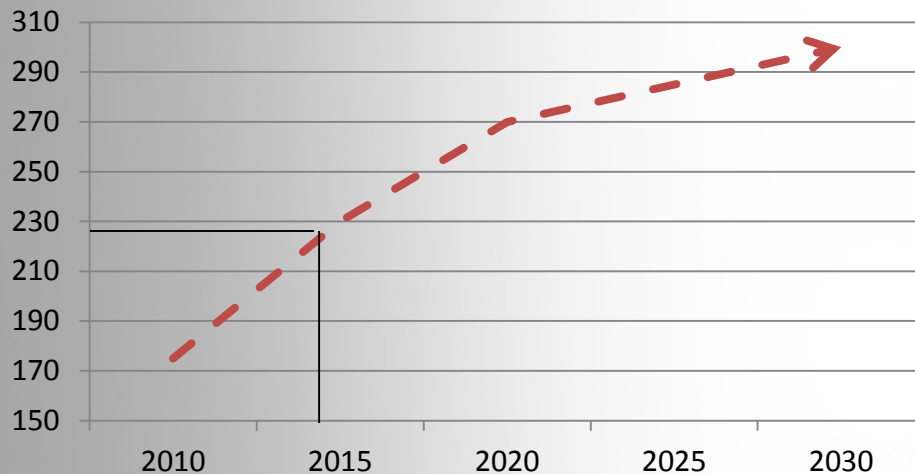
New airplanes
Deliveries by region

Region	New airplanes
Asia-Pacific	8,960
North America	7,690
Europe	7,330
Middle East	1,710
Latin America	1,640
Russia and Central Asia*	1,050
Africa	620
Total	29,000



Civil Airport Development

Number of Airports



- Investment of RMB 450 billion only in airport network
- Development of Western China (Xinjiang, Gansu, Qinghai, Yunnan, Sichuan)
- Opportunities on second tier airports
- Cooperation on Safety & Security measures and technologies
- Opportunities in ATC tower

Air Traffic Management

- 257 New ATC projects (RMB 9,9 billion)
- Opening of Airspace under 4,000 m
- Pilot projects for opening of airspace under 1,000 m
- 12 new technologies including ADS-B and PNB
- ATMB is looking for partners to improve:
 - ✓ Air traffic control
 - ✓ Information systems
 - ✓ Aeronautical charts
 - ✓ Low altitude ATM systems
 - ✓ Ground-to-air communication
 - ✓ Automatic dependant surveillance services
 - ✓ Air traffic safety and security



Guangzhou Int'l Airport

General Aviation

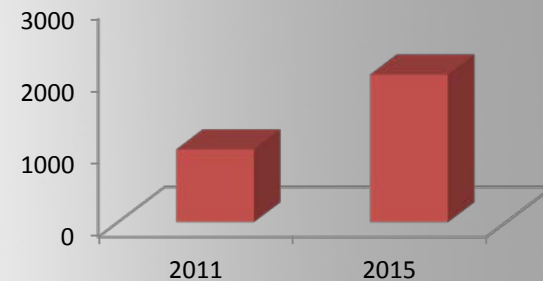
“China's government said in its 12th Five-Year Plan that it will promote the development of the general aviation industry”



Additional Need by End of 2015:

- More than 1000 GA Aircraft
- 500 Teaching Plane
- More than 100 Business Aircrafts
- 450 Civilian Helicopters
- 150 GA Airports
- FBOs & MROs

General Aviation Aircraft



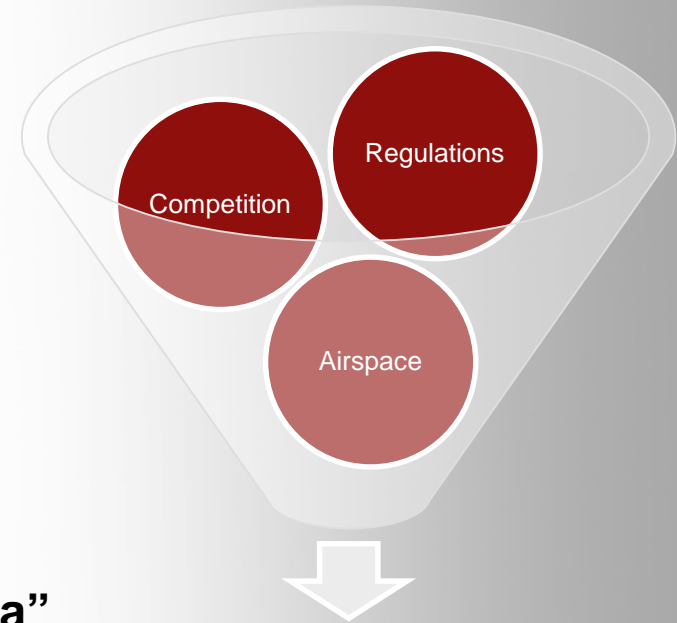
Pilots

- China will need 17,000 commercial aviation pilots by 2015
- Increasing demand for Business Aircraft / Helicopter Pilots
- Pilot training in China is expensive (120,000\$ for school package)
- 4 Canadian Certified Pilot Training School
(opportunity for other Canadian flight schools with ATPL(A) integrated course)
- Opportunities:
 - ✓ Open a school in China
 - ✓ Collaborate with a certified school
 - ✓ Leasing of Experienced Pilot
 - ✓ English Training for Pilots



Challenges

- Chinese airspace liberalization is a long process
- Very competitive market and local companies are growing fast
- Regulations on safety & security
- Certifications for pilots, aircrafts



“IPR protection is always a challenge in China”

Major Aerospace Events in China

Asian Business Aviation Conference and Exhibition

Date: April, 2015

Venue: Shanghai, China

Aeromart Tianjin

Date: September 7-8, 2015

Venue: Tianjin, China

China Helicopter Expo

Date: September 9-13, 2015

Venue: Tianjin, China

Aviation Expo China (i.e. Beijing Air Show)

Date: September 16-19, 2015

Venue: Beijing, China

China International General Aviation Convention

Date: October, 2015

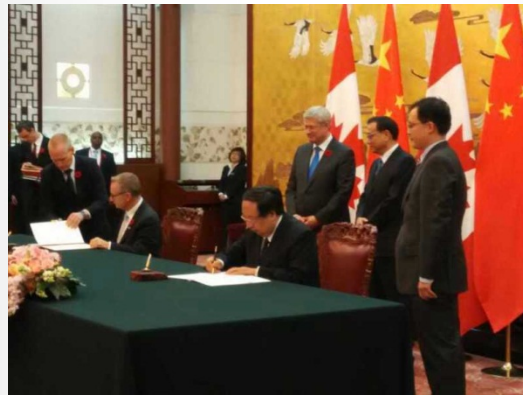
Venue: Xi'an, China

“China will be the world’s next big driver for the world market in aviation”



Canada-China Civil Aviation MOU

- Areas of Cooperation:
- Aircraft, helicopters, aircraft engines, aviation equipment, parts and systems, modelling and simulation technologies and aviation materials;
- Commercial aircraft and business jets;
- Airports and air traffic control equipment;
- Aviation training services and equipment;
- Maintenance, Repair and Overhaul (MRO) and Technical support;
- Supply chain infrastructure and management, technical and personnel training, aviation and environment;
- Civil aviation policies.



Keys points to remember: G – O C – H – I – N – A

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- **Growth:**
- Market with tremendous growth capacity
- **Opportunities:**
- Business opportunities are numerous
- **Challenges:**
- Many challenges/obstacles to success, but rewards are worthwhile
- **Help:**
- Canadian companies can benefit from helping each other
- **Invest:**
- Commitment to invest significant time and money to build relationships
- **Networking:**
- A trusted local partner is a significant asset
- **Authorities:**
- Key role of Chinese government (SOEs) in this market; benefits of Canadian government support through the TCS



Canadian Trade Offices in China



Contact Information:
Ms. Heidi Wang
Trade Commissioner
The Embassy of Canada to China, Beijing
Email: Heidi.Wang@international.gc.ca

Our four main services:

- ✓ World Markets Preparation
- ✓ Market Studies
- ✓ Qualified Contact Abroad
- ✓ Problems Solving

Thank You

