Flourishing Economic Ties between Aichi and Texas
Crafting a Better Growth Model
Hideaki Ohmura, Governor of Aichi Prefecture
Center of Japan, Heart of Japan

Maglev mega-region
Combining Tokyo and Aichi metropolitan areas into a mega-economic region of 50 million people

<table>
<thead>
<tr>
<th></th>
<th>Aichi</th>
<th>Maglev megaregion</th>
<th>Texas</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>7.5 million</td>
<td>50.7 million</td>
<td>28.3 million</td>
<td>1,210.6 million</td>
</tr>
<tr>
<td>GDP</td>
<td>$364 billion</td>
<td>$2,281 billion</td>
<td>$1,599 billion</td>
<td>$2,264 billion</td>
</tr>
</tbody>
</table>

Superconducting Maglev Shinkansen (to open 2027)
Tokyo – Aichi-Nagoya: 40 minutes

Tomei & Shin-Tomei Expressways

Tokaido Shinkansen

Japan

Tokyo

Osaka

Aichi
### Industrial output (2016) and Share

<table>
<thead>
<tr>
<th></th>
<th>Industrial output (2016)</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aichi</td>
<td>$410 billion</td>
<td>14.9%</td>
</tr>
<tr>
<td>Tokyo</td>
<td>$71 billion</td>
<td>2.6%</td>
</tr>
<tr>
<td>Japan</td>
<td>$2,757 billion</td>
<td>—</td>
</tr>
</tbody>
</table>

### Exports and imports (2017)

<table>
<thead>
<tr>
<th></th>
<th>Exports</th>
<th>Imports</th>
<th>Trade balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aichi</td>
<td>$137 billion</td>
<td>$60 billion</td>
<td>$77 billion</td>
</tr>
<tr>
<td>Tokyo</td>
<td>$56 billion</td>
<td>$112 billion</td>
<td>▲$56 billion</td>
</tr>
<tr>
<td>Japan</td>
<td>$698 billion</td>
<td>$672 billion</td>
<td>$27 billion</td>
</tr>
</tbody>
</table>

### Major industries in Aichi (2016) (Largest share in Japan)

- **Transportation machinery**: $231 billion, Domestic share: 38.9%
- **Steel**: $19 billion, Domestic share: 13.5%
- **Electric machinery & appliances**: $19 billion, Domestic share: 12.9%
- **Machine tools**: $19 billion, Domestic share: 11.4%
- **Metal products**: $14 billion, Domestic share: 10.4%
- **Office machinery & appliances**: $10 billion, Domestic share: 15.6%
Aichi growth model

YS-11 (1964)

H-IIA (2001)

MRJ (2020)

HV PRIUS (1997)

FCV MIRAI (2014)

Superconducting Maglev Shinkansen (series L0, 2027)

Zero fighter (1940)

Clustering drives more clustering drives innovation
Fuel cell vehicles powering a hydrogen society

1. Hydrogen is filled at a hydrogen station.
2. Electricity is generated by the hydrogen-oxygen chemical reaction.
3. This electricity drives the motor.

1. FCV MIRAI

Past
- Industrial gases
- Rocket fuel

Present
- Home fuel cells
- Hydrogen station
- Fuel cell vehicles

Future
- Hydrogen power generation/commercial FCs
- FC rolling stock
- FC scooters
- Hydrogen-powered jet
Cutting-edge automated driving field tests

Japan’s first field tests of remote-controlled automated driving system underway in Aichi

Unmanned automated driving (Level 4) on public roads

- **3D sensor** to monitor vehicle environment
- **High accuracy 3D map** to locate vehicle position
- **Camera** to obtain visual information (traffic lights, signs, etc.)
- **AI** to identify and avoid hazards (remote control also possible)

Automated driving in operation (No one behind the wheel)

Remote control

High accuracy 3D map
Map data on roads, guardrails, and shapes of street-side buildings

3D sensor

Camera

4G-LTE

AI-controlled system
Robotics industry cluster and applications

Industry cluster
Aichi’s robotics industry holds the largest share of the Japanese market

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial output</td>
<td>$1 billion</td>
<td>21.7%</td>
</tr>
<tr>
<td>Number of companies</td>
<td>64</td>
<td>15.1%</td>
</tr>
</tbody>
</table>

Practical use

Robotic smart home
Living spaces designed for the use of robots and the safety and comfort of senior citizens

World Robot Summit 2020
Competitions and exhibitions featuring state-of-the-art robotics technologies from around the world.

<table>
<thead>
<tr>
<th>Date</th>
<th>Early October 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venue</td>
<td>Aichi International Exhibition Center*</td>
</tr>
<tr>
<td>Events</td>
<td>Competitions: Manufacturing, service, infrastructure, disaster response, etc. Exhibitions: State-of-the-art robots</td>
</tr>
</tbody>
</table>

* Aichi International Exhibition Center will open September 2019 and plans to utilize service robots for information, security, and cleaning using advanced telecommunication technologies.
Japan’s largest aerospace industry cluster

Boeing 787 components produced in Japan

MRJ, the first jet airliner manufactured in Japan

MRJ
- MRJ90: 88 seats, range 1,300–2,300 miles, takeoff weight 43.7–47.2 tons
- MRJ70: 76 seats, range 1,200–2,300 miles, takeoff weight 40.7–44.3 tons

Seating capacity | Range | Takeoff weight
--- | --- | ---
MRJ90 | 88 | 1,300–2,300 miles | 43.7–47.2 tons
MRJ70 | 76 | 1,200–2,300 miles | 40.7–44.3 tons

Geostationary satellite load | Launch cost | Launch success rate
--- | --- | ---
H-IIA | 4.4–6.6 tons | $100 million | 97.4%
H-IIB | 8.8 tons | $150 million | 100%
H3 | 7.2 tons | $50 million | Under development

H3, Japan’s new flagship rocket
- Launch cost half of H-IIA
- Prototype to launch 2020

= manufactured by major aircraft manufacturers in Aichi (35% of aircraft)
Ghibli Park Project

Ghibli Park to share the philosophy of Expo 2005 Aichi Japan

Expo 2005 Philosophy
= Studio Ghibli Message

Love for humanity, flora and fauna, and the Earth

Ghibli Park Project

- Expand the world of Ghibli at Expo 2005 Aichi Commemorative Park
- Spread the Expo 2005 philosophy via Ghibli productions

Projected opening in 2022
Developing cities with unique methods of growth

Aichi

- Attract people, goods, capital, and information

Cluster

Innovation

Create new jobs, encourage consumption and investment

Texas

Austin

- Large companies and research institutes
- Positive cycle of corporate spin-offs

“Silicon Hills”

Houston

- NASA’s Johnson Space Center
- Texas Medical Center

Core institutes attract more institutes, cluster expands
(Aerospace industry, medical services)

San Antonio

- Abundant young labor force
- Low-cost, stable energy supply

Favorable conditions attract companies
Automakers (e.g. Toyota), IT, aerospace, etc.

Cluster

Innovation

Lock-in effect
Economic ties between Aichi and Texas

Aichi-based companies in Texas:
22 companies in 41 locations

Central Japan Railway Company
Technical assistance for high-speed railway project between Dallas and Houston

Toyota Motor Corporation
North American headquarters in Plano

Chubu Electric Power Co., Inc.
Investing in LNG project in Freeport

Memorandum of Understanding on Friendship and Mutual Cooperation

Aichi – US MOUs

<table>
<thead>
<tr>
<th>State</th>
<th>Date signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>April 22, 2016</td>
</tr>
<tr>
<td>Washington</td>
<td>October 18, 2016</td>
</tr>
<tr>
<td>Indiana</td>
<td>September 15, 2017</td>
</tr>
<tr>
<td>Kentucky</td>
<td>October 23, 2017</td>
</tr>
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</table>

Signing ceremony, Texas Governor's Mansion (April 2016)
Building closer relationships

Business exchange

Gov. Ohmura at Toyota San Antonio plant (April 2016)

Texas delegation at Aichi Prefectural Government Office (October 2016)

San Antonio delegation at Aichi Prefectural Government Office (March 2018)

Young people’s exchange

San Antonio high school students at Aichi Prefectural Government Office (June 2017)

Aichi high school students at Clements High School, Houston (February 2018)

Aichi students to South by Southwest (March 2019)

Students and researchers from universities and graduate schools in Aichi will join the Interactive Festival to present their research.