

Global/Local innovations for Next Generation Automobiles Miyagi Area – Project Report

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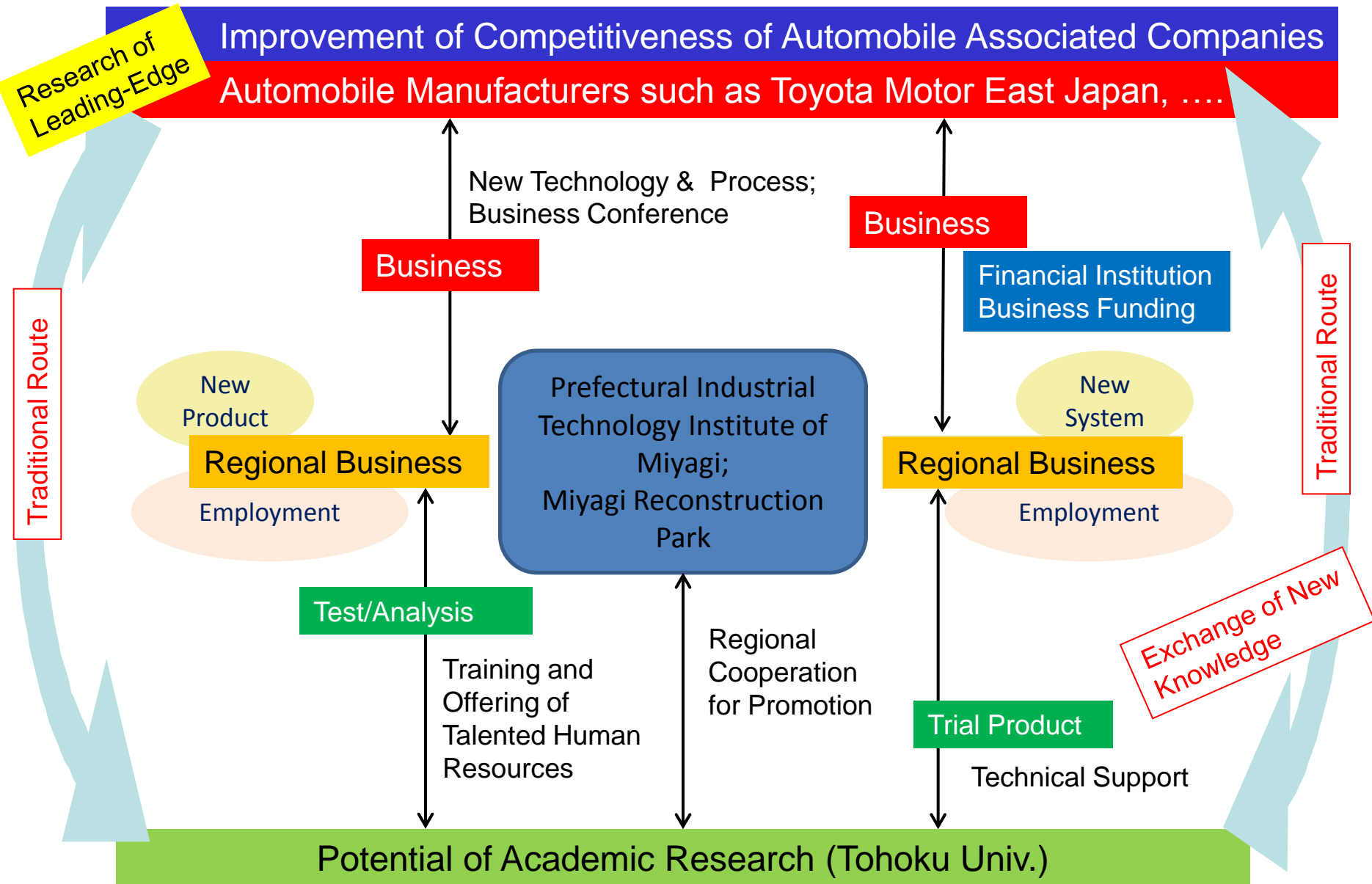
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Industry–Academia–Government Innovation for Next Generation Automobile

– Overall Mechanism of Regional Innovation Strategy –



objects

1. human resource development
 - Human resources
 - Researchers, developments and production engineer
 - management personnel(management strategies/educations/business promotions)
2. Constructing strong network of researchers and engineers Network
3. arrangement of conditions for research and technology developments.
4. Research program : Current situation of automobile and main subjects to be considered.

1. Human resource development

Researchers: university professors, assistant professors and development engineers from related companies, graduate school students

Engineers : engineers working as backbones of companies in this area. Teachers of associated educational administrations.

Business managers : university professors of business management, government associated administrative officers.

Business : actions of automobile industry, key technology of automobiles and development trends, seeking for university laboratories inquiry ,

Regional Enterprises Tours, providing, various seminars and trainings.

. Outcome (total participants of 2014)

| year | Basic phrase and technological training | Advanced Phase |
|--------------|---|----------------|
| Participants | 408 | 448 |

- *57 young students participated human resource development program “car intelligent ” to learn about car .

2. Constricting researchers and engineers Network

- implementation of workshops and seminars for 54 university professors and researchers as a result 60 engineers of 42 local companies made 50 pairs of partnership between university and local companies



3. arrangement of conditions for research and technology developments.

- Commoditizing research equipment, devices etc. of local institution / university

| | | |
|-----------------------------|--------------------------|--|
| Implementing agency: | TOHOKU UNIVERSITY | (Industrial technology institute .Miyagi prefectural government |
| Number of equipment | 66 | 95 |

- maintain the use enforcement system ,a use procedure and the charging system of equipment and devices.
- usage performance 347 enterprises, 14,224 hrs. (6.2% of total available time 22,800 hrs.)

4. Research Programs

Current situation of automobile and main subjects to be considered.

4-1 Population and amount of passenger cars

Japan

Working-age population : 7,682 million(2010)

Number of passenger cars : 7,298 million(2010)

Spread(%) : 95 %

The whole world

Working-age population : 5.8 billion(assumed by 7.2 billion in 2010)

Number of passenger cars : 1.2 billion

Spread(%) : 20 %

4-1-1 Regulations brought by the progress of the industry and society

In developed countries, the spread of current cars will be plateaued out. The increase of population in developed countries will saturate because birthrate tends to decrease with time. Adding it, the remarkable aging is being observed due to the elongation of people's life time in Japan.

Furthermore, young people tend to concentrate into city area, resulting into an aging society of country area. Aged people thus remained needs a new transportation systems in order to keep their daily activities.

On the other hand, the ownership rate of mobile is still 20% in worldwide scale, conventional mobile will increase continuously in several ten years, depending on the economic growth of the developing countries.

4-1-2 Regulations by the energy resources and environmental problems.

- The finite nature of petroleum resources, especially the depletion of gasoline equivalent fuel is a serious problem, not only from economic view point but also the environmental requirements

4—2 The direction of the research for the “Next Generation Automobile Research”

- We do not have any full-fledged oil production in Japan. Still, Japan has kept the commensurate society level for 70 years, owing to the petroleum civilization age supported by the whole world.
- And now at the beginning of the oil depletion era, we have to find some direction of the future of automobile industries which we have long depended on. Its direction will be a realization of highly efficient automobile introducing an alternative energy, actually, the electric energy.
- Lightweight vehicle body, and high performance electric mobile will be important for the use of aged person.
- Instead, the development of environment-friendly diesel-engine will also be essential for the transportation of heavy goods in the future, for reinforcing the present track vehicles.