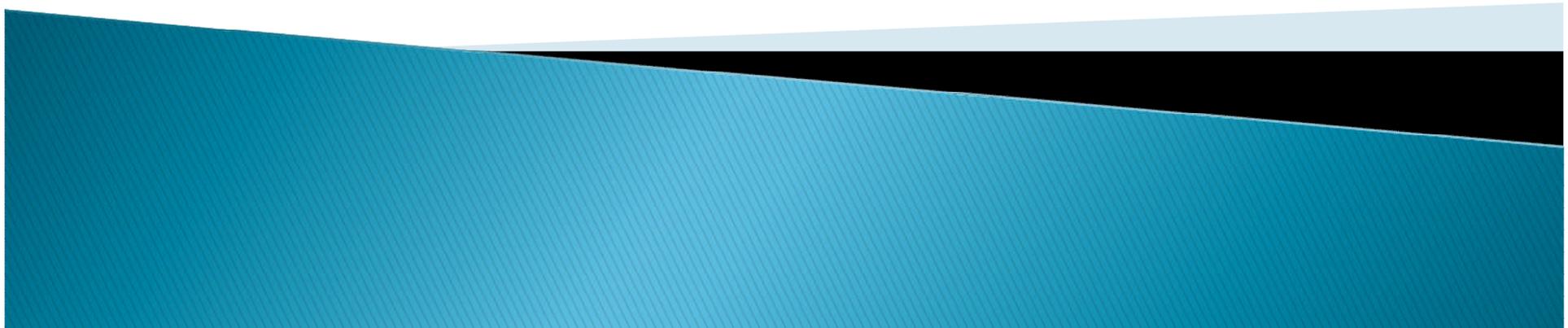


# How to draw endogenous power in regions ?

A review of innovation policies  
in the Tohoku Region

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# Agenda

1. 1. Features of the Tohoku region

2. Japanese relocation policy

3. Endogenous movements

4. Triple helix system

5. The case of INS

6. Review and prospects

# Features of the Tohoku region



- ▶ Tohoku was famous for abundant land and rich natural resources. **Agriculture, forestry, and fishery have been its main industries.**

However, when World War II ended and the Japanese economy expanded rapidly in the 1960s, the Tohoku region missed the boat and failed to change their industry structure.

In order to catch up with other advanced regions, science and technology (S&T) has been thought of as the key factor for the revival of Tohoku.

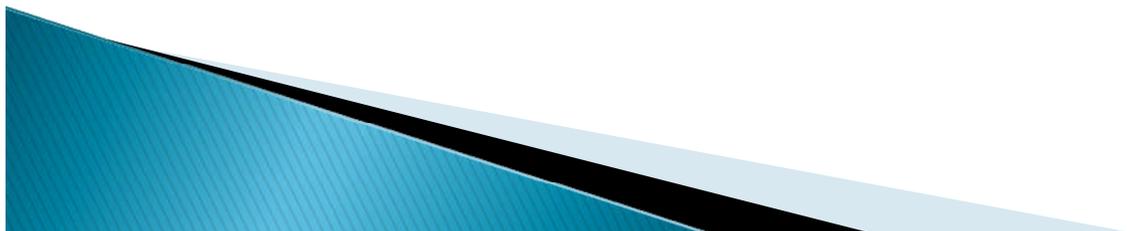
# Industrial relocation policy

- ▶ S&T policy in Japan has a strong relationship with industrial relocation policy.
  - Comprehensive National Development Plans(1950~)
  - The Industrial Relocation Promotion Law (1972)
    - The Japanese government encouraged private companies to relocate their offices and factories to less developed areas.
  - The third Comprehensive National Development Plan(1977)
    - The Japanese government aimed to build a core of research and development (R&D) organizations , called a Technopolis, in rural areas.



# Technopolis fever

- ▶ In 1983, the Law for Accelerating Regional Development Based on High-Technology Industrial Complexes (Technopolis Law) was enacted.
- ▶ One of the aims of the Technopolis Law was to shift the Japanese economy from a catch-up type to a high-technology type.
- ▶ By 1990, 26 cities had been established as bases for regional economic development.



# Result of Technopolis

- ▶ Most of the designated cities could not invite the expected number of high-tech-related organizations (Table1).
- ▶ The central government intervened in the process of plan-making so much that all plans proposed by local governments were almost identical and possessed little variety.
- ▶ However, Technopolis plays as a good trigger for making networks in these regions.



Table 1. Relocation of companies & research institutes in Technopolis areas

Location (Prefecture)	Year of approval	Total number of invited companies (~1995)	Number of high-tech companies (~1995)	Number of relocations of research institutes (1985–1993)
Aomori (Aomori)	1985	198	20	0
Akita (Akita)	1984	104	20	0
Northern Sendai Core (Miyagi)	1986	155	17	16
Koriyama (Fukushima)	1986	133	25	0
Kitakami River Basin (Iwate)	1987	—	—	1
Yamagata (Yamagata)	1987	—	—	1

(Source: Ito, 1998, p. 231)

# Tohoku Intelligent Cosmos Plan(TICP)

- ▶ The Tohoku Intelligent Cosmos Plan (TICP) was a strategic plan proposed by universities, industries, and governments in the Tohoku area
- ▶ The aims of this plan;
  - to make the whole Tohoku region an international core of Japan in terms of intelligence (R&D) and industrial development;
  - to form a future-oriented society in which humanity, nature, industry, life, and culture are well-assorted , and people can live harmoniously in the Tohoku region.



# History of TICP

- ▶ The Tohoku region had been neglected in the forth Comprehensive National Development Plan.
- ▶ Nakao Ishida (the Dean of Tohoku University at that time) felt a strong sense of crisis about this situation.
- ▶ In 1987, the Tohoku Intelligent Cosmos Plan was first proposed by cooperatively by the prefectures, universities, and private companies in the Tohoku region



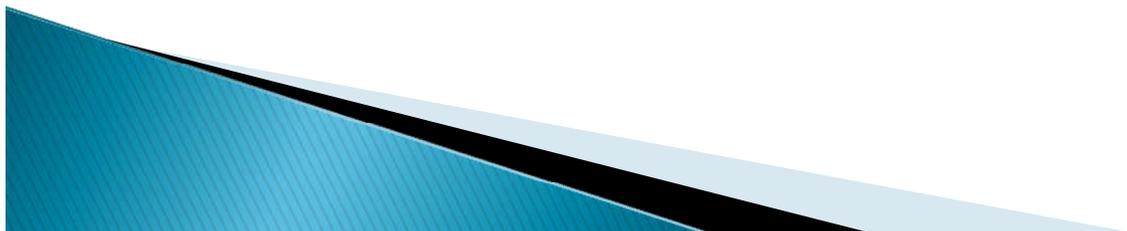
# System of TICP

- ▶ TICP was comprised of six specialized R&D companies and ICR KK.
- ▶ TICP was run by a joint public and private venture (Dai San sector), and was financed by the local government, private companies, and various industry-supporting organizations in the Tohoku area.



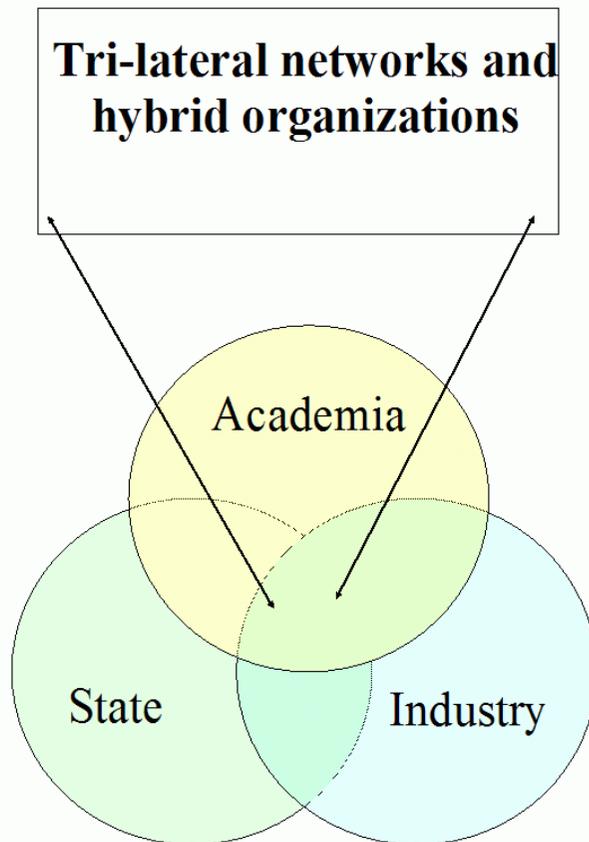
# Results of TICP

- ▶ Dependence heavily on financing, not only from local companies and local governments, but also from government-affiliated firms and businesses in urban areas.
- ▶ Conflicts among players(prefectures) regarding their interests.
- ▶ Commercialization took longer than expected.



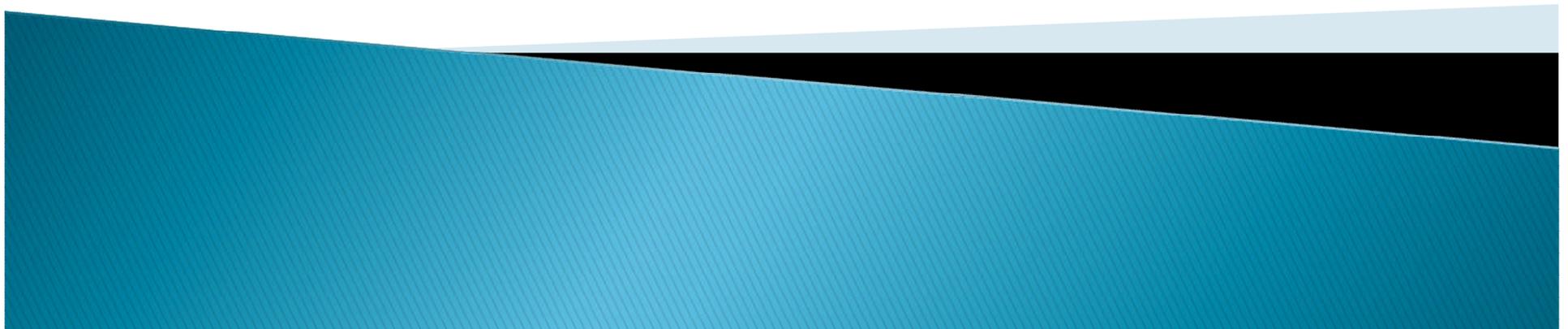
# S&T policy based on triple-helix system (TH system)

**Figure 3**  
*The Triple Helix Model of University-Industry-Government relations*

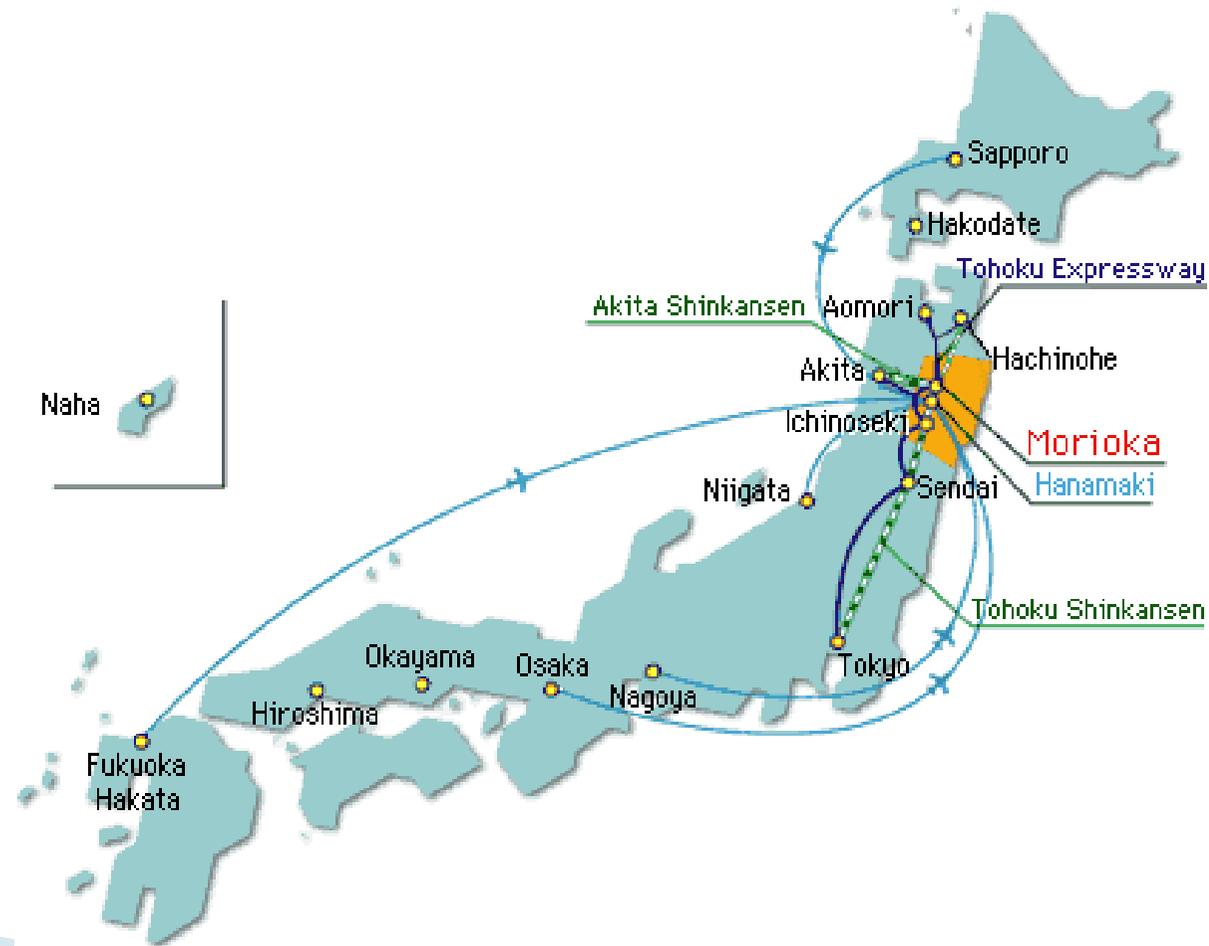


- ▶ The Triple consists of three players: academia, industry, and government.
- ▶ At the end of the 1980s, support for the TH system began to grow in Japan.
  - Regional Cooperative Research Center
  - Venture Business Laboratories (VBLs)
  - Technology Licensing Office (TLO)
- ▶ These organizations were founded as a platform of S&T in the region in order to contribute to the enhancement of regional S&T levels.

# Case of Iwate Network Systems (INS)

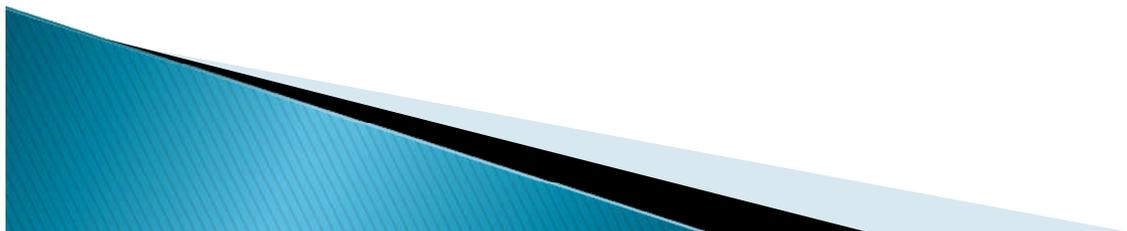


▶ Where is Iwate prefecture ?



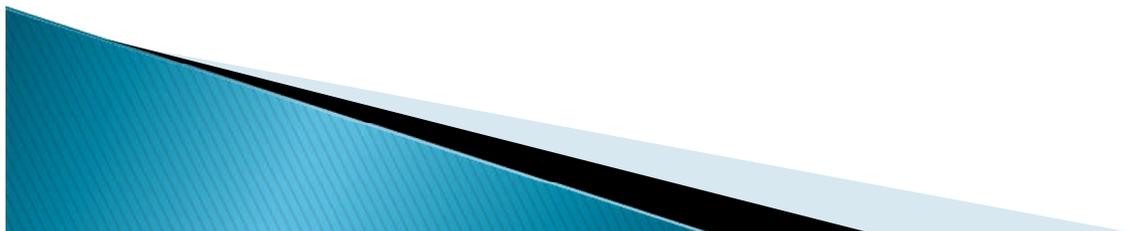
# Description of Iwate University

- ▶ Local national university
- ▶ 4 departments
  - Engineering,
  - Agriculture,
  - Social science and liberal arts,
  - Education,
- ▶ Staff --- 795 (researchers---420)
- ▶ Students---5832
- ▶ Fund--- 12.4billion yen (\$1.05billion)



# What is INS (Iwate Network Systems)?

- ▶ **INS is a voluntary/informal network**, which consist of people from universities, business, local government, and other facilities around Iwate region
- ▶ Anyone can join INS if he/she agrees with and is sympathetic to INS' mission
- ▶ It is a rule for members to take part in INS without title
- ▶ People can meet persons who have never seen and make face-to-face communication, when they take part in INS.
- ▶ INS is a kind of “support network” of RCRC.



# Before INS (before 1992)

- ▶ Iwate University was overlooked in the region.
- ▶ Young researchers had be in pinched for research fund.
- ▶ Young researchers and the officers of Iwate Prefecture had an opportunities of drinking together and talking about their dissatisfaction , complains, and their ideals coincidentally around 1987.
- ▶ They started occasional meetings (34 persons).
- ▶ Finally they named its group “INS” in 1992.



# INS stands for---

- ▶ Iwate Network Systems

But the members said;

- ▶ Itsumo **N**onde **S**awagu Kai
  - The meeting for drinking and socializing
- ▶ Itsuka **N**obel-sho wo **S**araukai
  - The meeting for getting a Nobel Prize someday!

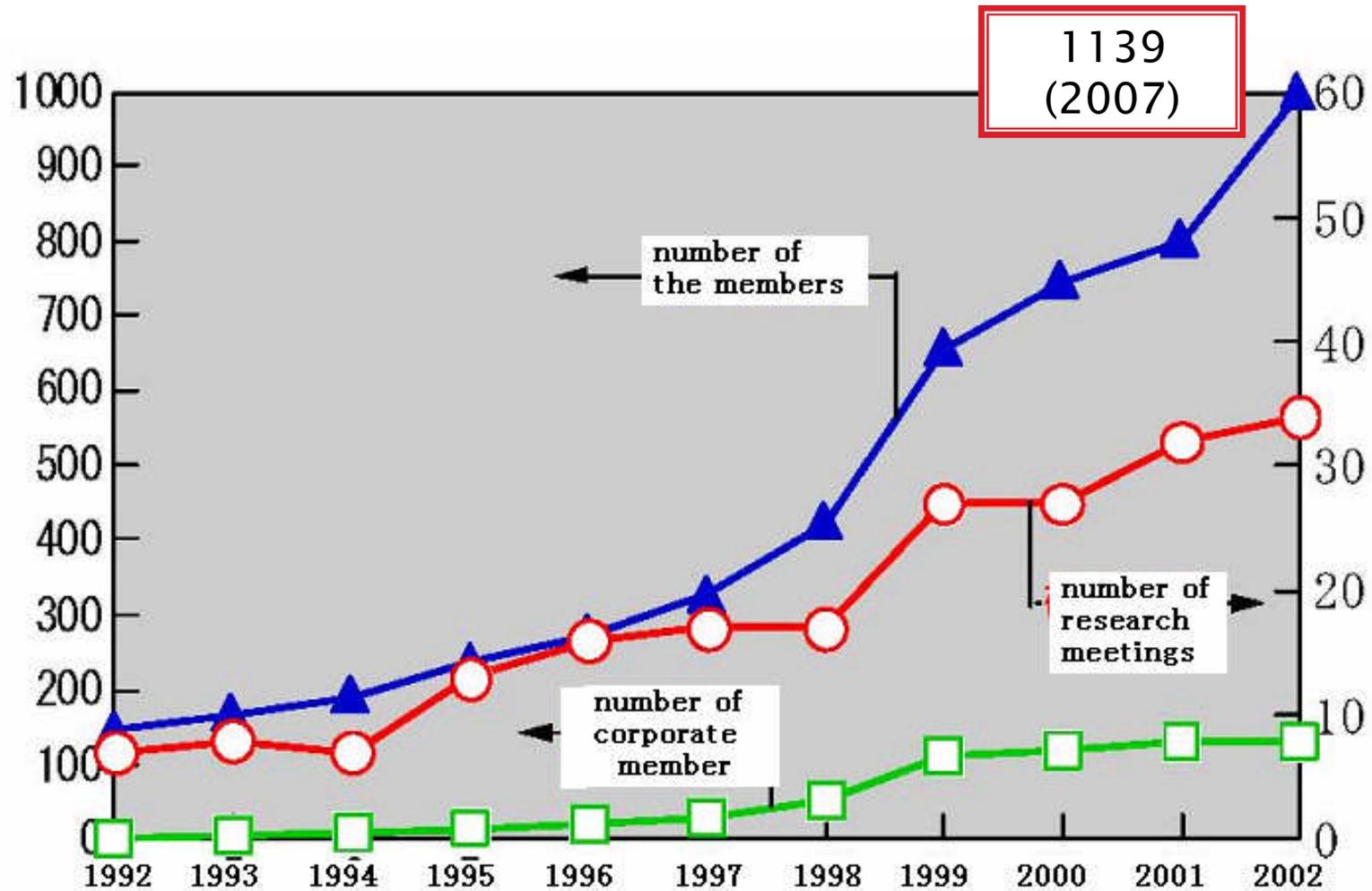


# Setting up of RCRC (Regional Cooperative Research Center) and the role of INS

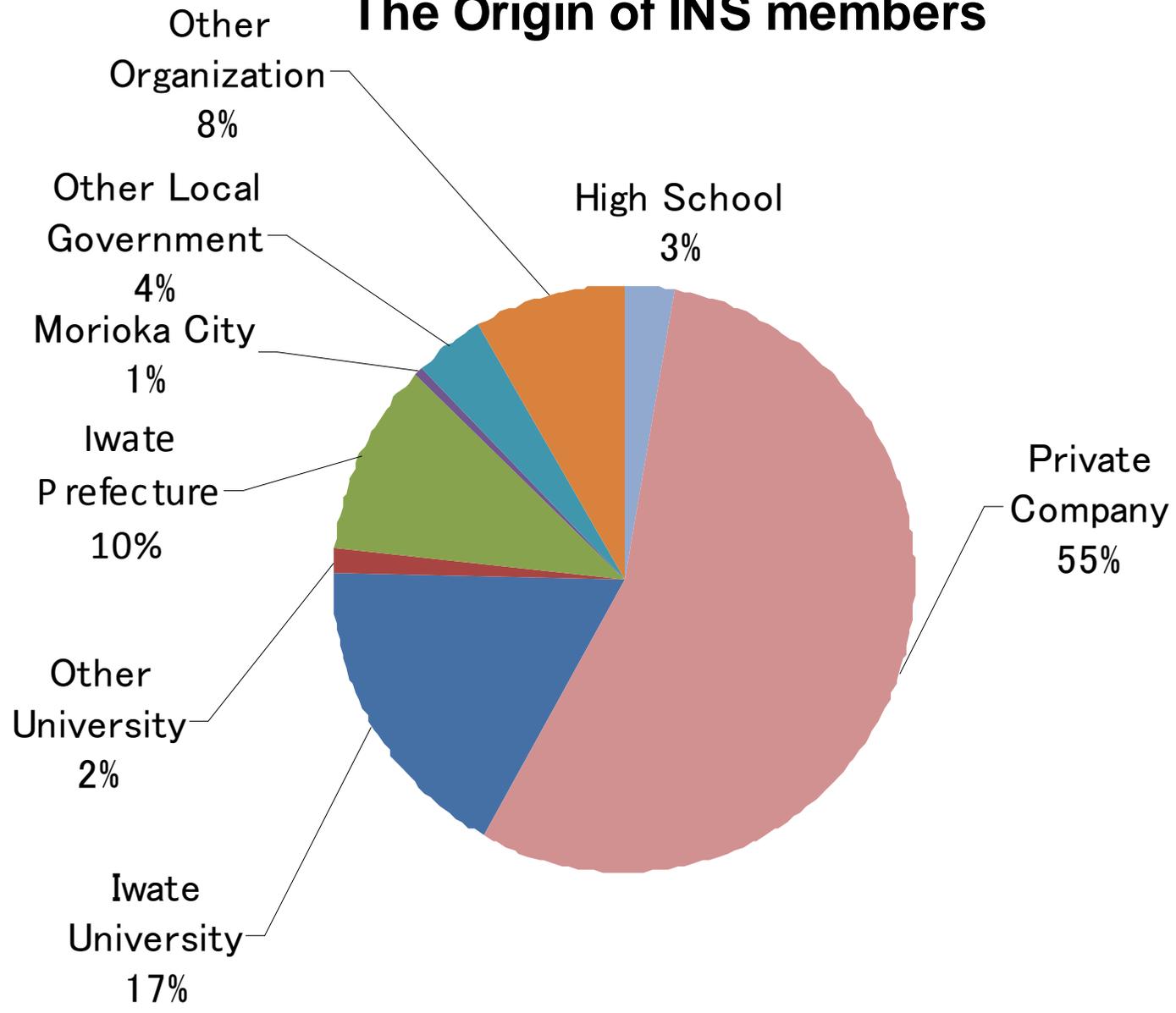
- ▶ In 1992, when RCRC was set up at Iwate University, INS proposed the idea and plan for RCRC's policy.
- ▶ The ideas are;
  - RCRC should be performance-oriented organization.
  - Iwate prefecture should provide money to support cooperation between RCRC and regional firms.
- ▶ Since then, INS has played as support network of RCRC.



# The number of membership of INS



# The Origin of INS members

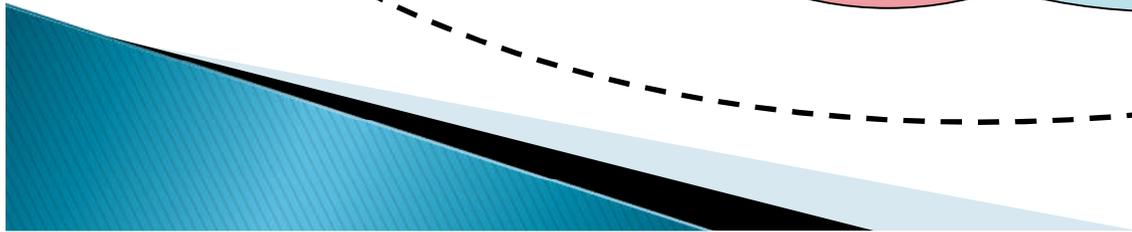
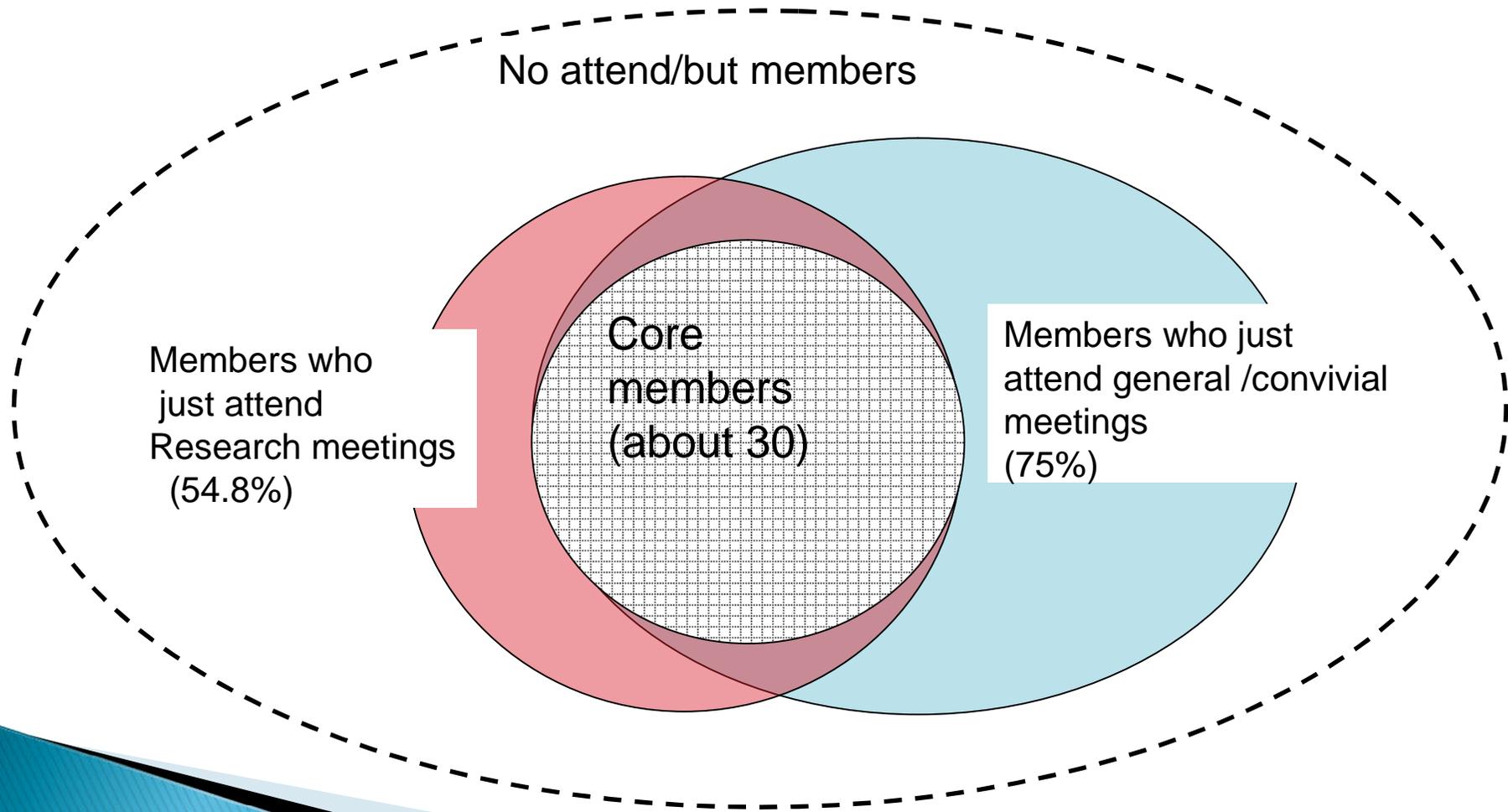


# What do people do in INS ?

- ▶ Research meeting (39 divisions)
- ▶ General meeting/Convivial meeting
  - Golf competition, Christmas family party
- ▶ Holding symposium/forum
- ▶ Education for high school students
- ▶ Connecting other regions.



# Members' commitment to INS



# Motivation of participation INS

- ▶ To get acquainted with others
- ▶ To obtain new special knowledge
- ▶ For fun
- ▶ “Being an INS members” is seen as entrepreneurial and active person.

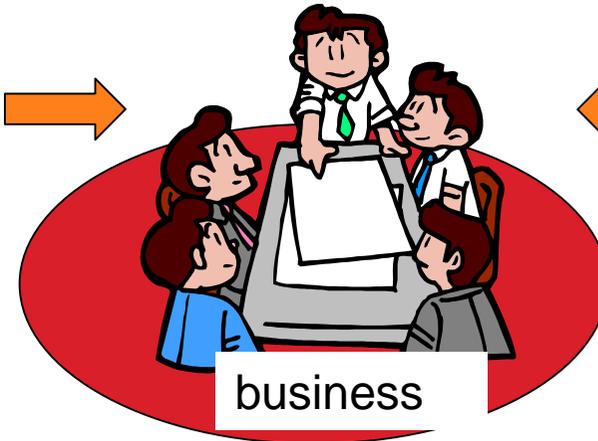
Source) Survey done in 1999 to INS members



Securing subsidy

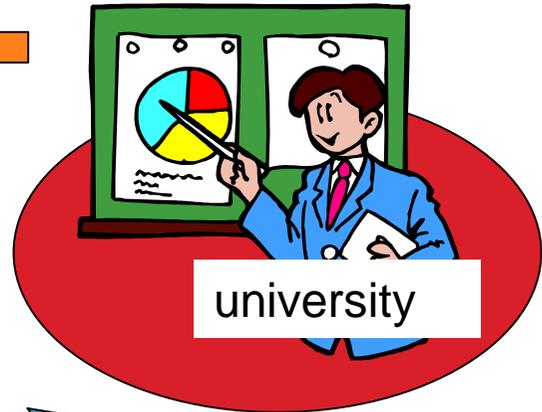


Working on the project



Providing knowledge

Gathering people  
resource, space...



It's so  
interesting!  
Let's do it !!

Professor or  
officer of local  
government



INS

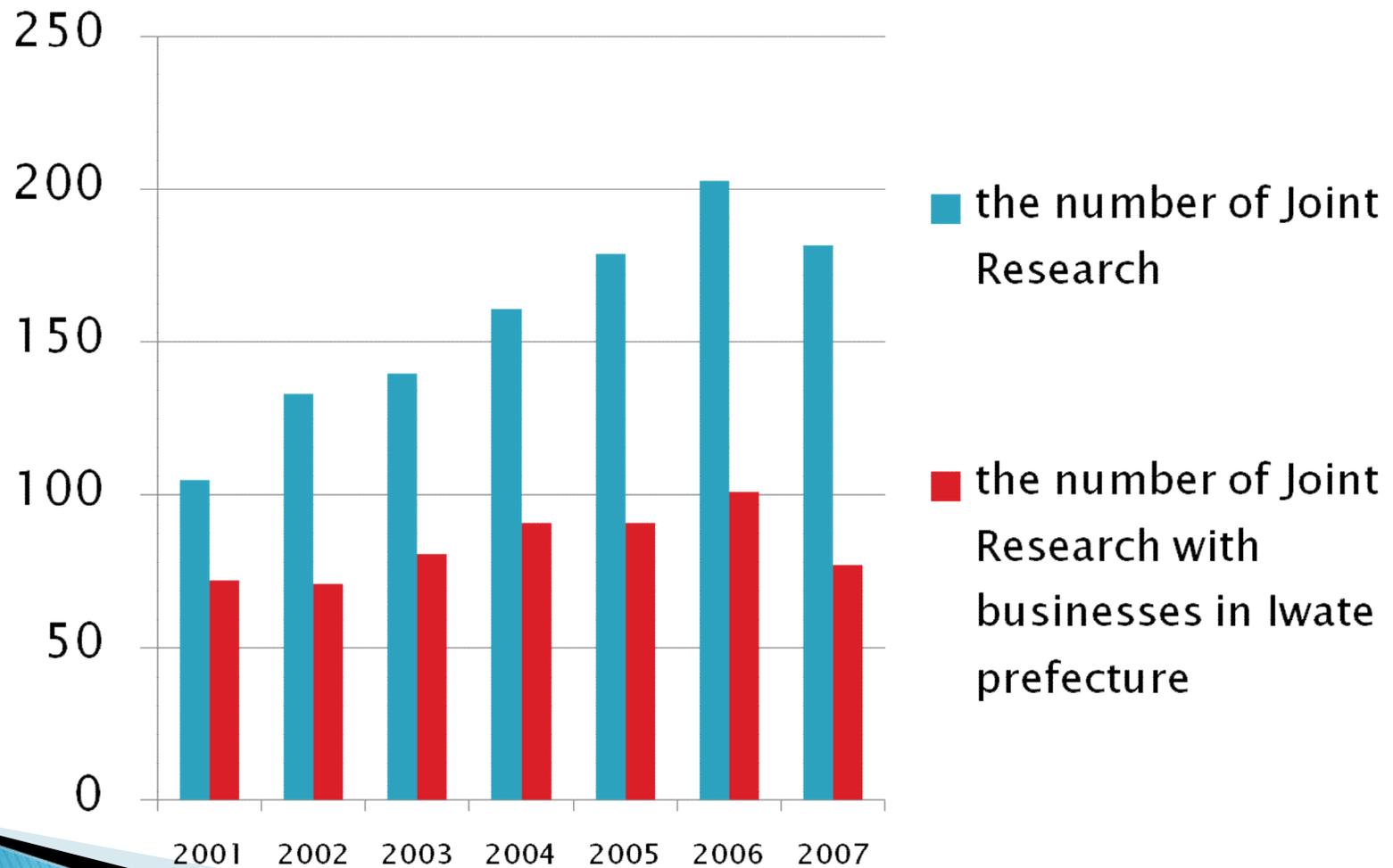
I have a great  
Idea !! ~~~

Business person

# Performance of INS (1)

- ▶ Increase of the number of joint research
    - Number of collaborative research (10<sup>th</sup> )
    - Number of collaborative research/ faculty member (1<sup>st</sup>)
    - Percentage of collaborative research with local companies.(1<sup>st</sup>)
  - ▶ INS is awarded by government for contributing to facilitating collaboration.
  - ▶ INS model is taken after by other regions.
    - Kansai, Yamagata, Tottori, Yamanashi, Hokkaido—and so on.
- 

# The number of Joint Research of Iwate university

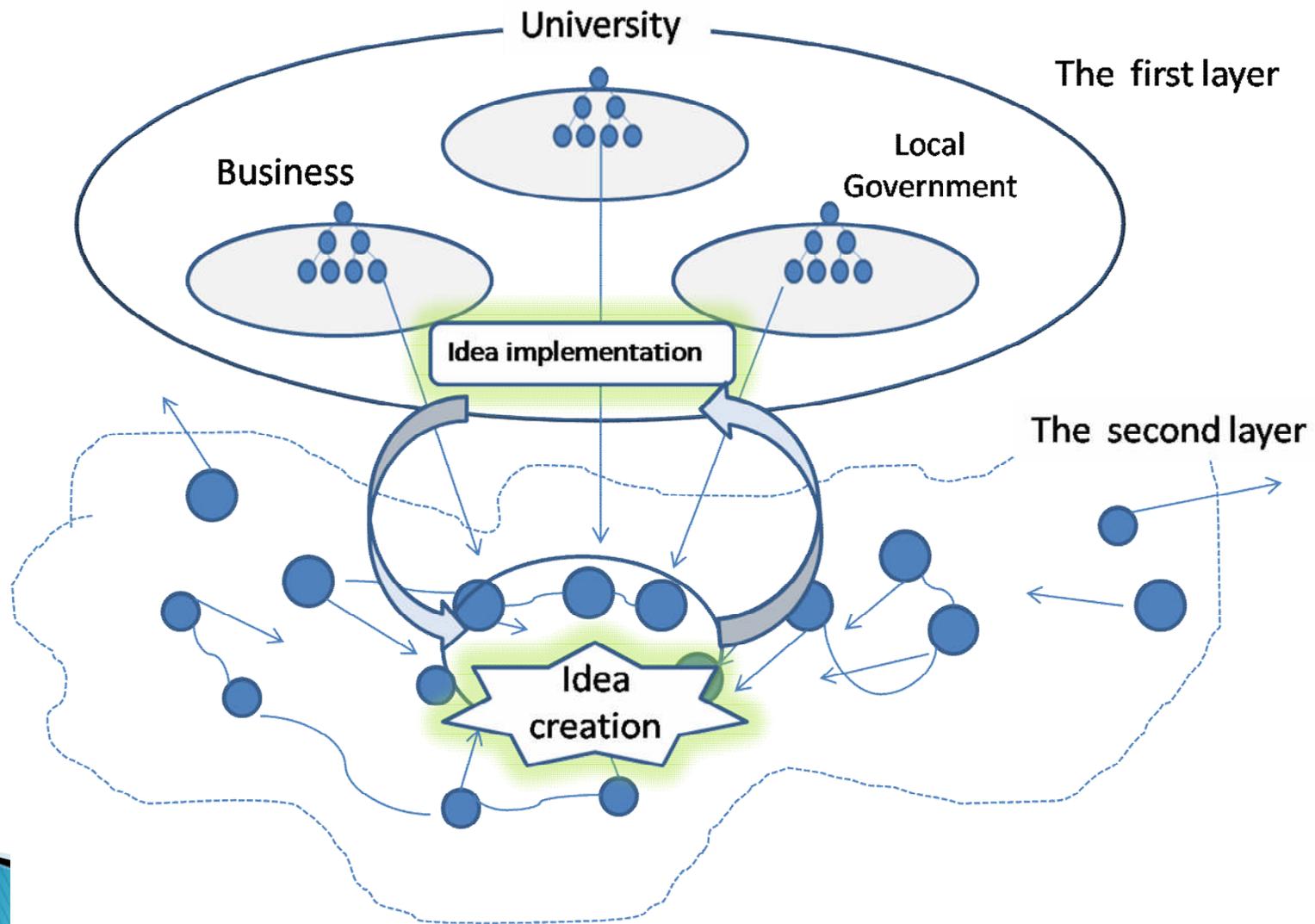


# Performance of INS(2)

- ▶ Getting huge grant/subsidy with (for) local SME.
- ▶ INS members (business persons+researchers) founded 22 university spin-off companies(as of 2008).
- ▶ The new department of graduate school specialized in “Molding” (which is originally started from the research meeting of INS)

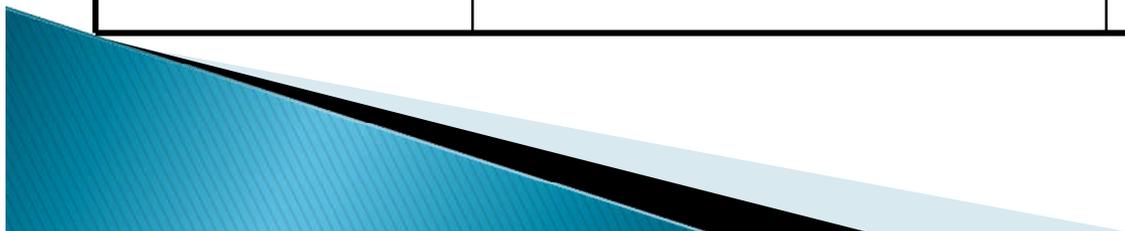


# Regional Innovation System in Iwate



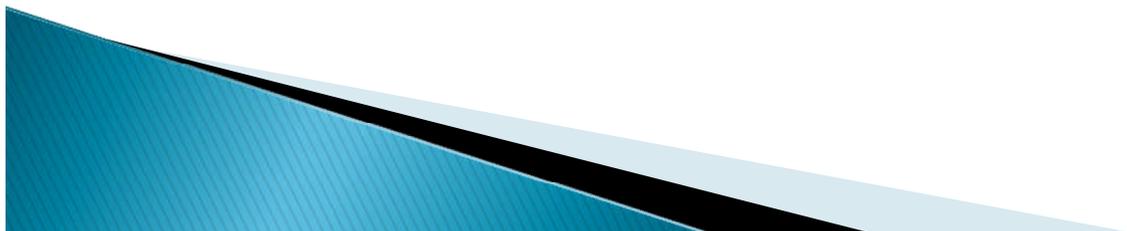
# Comparison between formal organization and informal network (INS)

	Formal organization (the first layer)	Informal network (the second layer)
<b>Actor Model</b>	<b>Organization man</b>	<b>Free agent (without title)</b>
<b>connection</b>	<b>Power and authority</b>	<b>Sharing mission</b>
<b>membership</b>	<b>limited</b>	<b>Boundary-less, amoeba</b>
<b>communication</b>	<b>Official Remarks ("tatemae" dominated)</b>	<b>Bottom line ("honne" dominated)</b>
<b>style</b>	<b>Hierarchical &amp; vertical Top-down</b>	<b>Flat &amp; horizontal,</b>
<b>Role</b>	<b>Idea implementation</b>	<b>Idea generation</b>



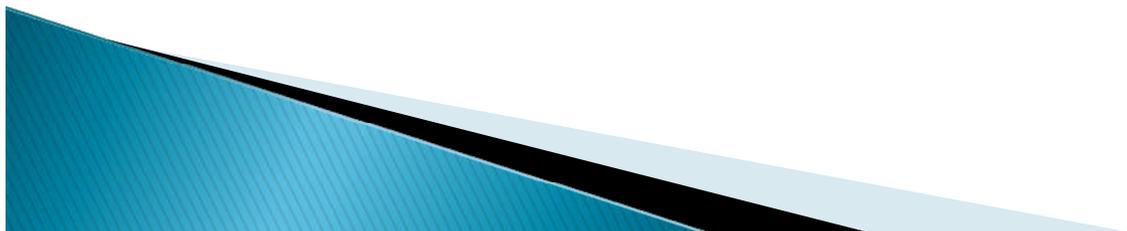
# Toward regional S&T

- ▶ In 2002, the Law on Science and Technology was revised. The new law emphasized the roles of the region in enhancing and diversifying S&T in Japan and **delegated initiatives on S&T to various regions.**
- ▶ METI launched “Industrial Cluster project” in 2001.
- ▶ MEXT started a program called “Knowledge Clusters” in 2002.



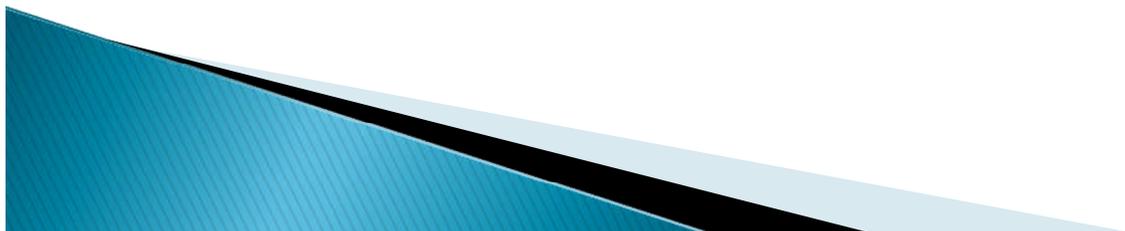
# Years in which S&T policies and S&T committees were established

<b>Name of prefecture</b>	<b>Year S&amp;T policy was set</b>	<b>Year S&amp;T committee was formed</b>
<b>Aomori</b>	1998	1997
<b>Akita</b>	2000	2002
<b>Iwate</b>	1990	1992
<b>Miyagi</b>	1999	1998
<b>Yamagata</b>	1999	1999
<b>Fukushima</b>	2002	1997



# Focus area in each prefecture

Name of prefecture	Focus area
<b>Aomori</b>	Medical health welfare, Agriculture, Green energy
<b>Akita</b>	Manufacturing technology (for nano-tech, medical, ubiquitous, transportation), Agriculture
<b>Iwate</b>	Basic manufacturing technology, Medical instruments, Marine biology
<b>Miyagi</b>	Advanced electronics parts, Automobiles
<b>Yamagata</b>	Life science, Electroluminescence
<b>Fukushima</b>	Medical instruments, Agriculture



# Problems and Prospects

- ▶ From top-down style to bottom-up style
  - Excess egalitarianism is a problem.
  - Respecting for individuality and Focusing are required for every region.
- ▶ Unstable politics in Japan and regional S&T policies
  - The Japanese government will give up supporting regional S&T.
- ▶ “Independence” and “Regional initiative” may be the keys for regional S&T policies.



Thank you for listening !

