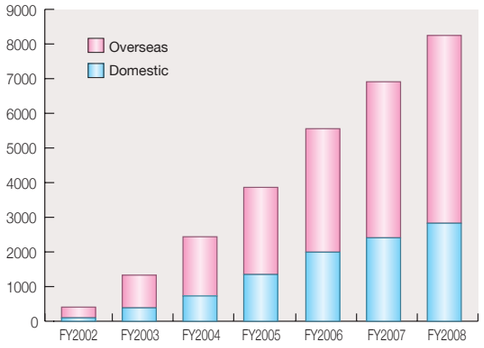
●Knowledge Cluster Initiative

Achievements of the Knowledge Cluster Initiative

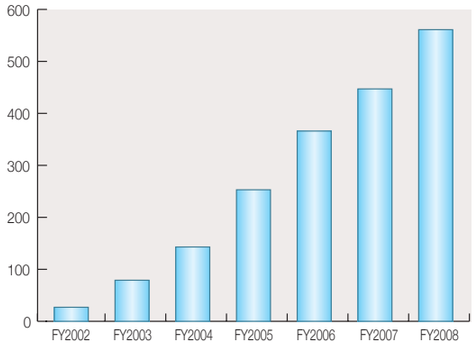
Current Achievement Data of Knowledge Cluster Initiative

The purpose of the Knowledge Cluster Initiative is to create an accumulation of the knowledges (i.e., a knowledge cluster) for internationally competitive technological innovation by collaborative research among industry, academia and government such as research organizations, R&D-oriented companies, and universities as a center of knowledge. These efforts yielded the following results.

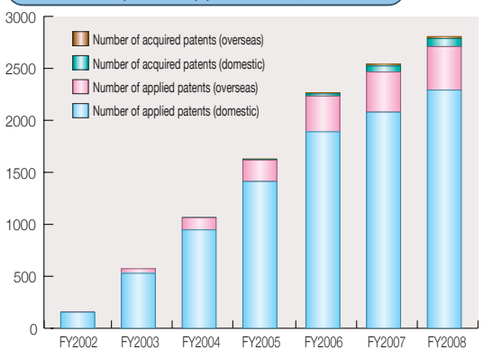
Number of papers (accumulated)



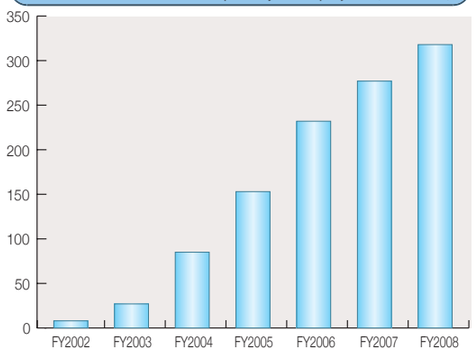
Number of awards (accumulated)



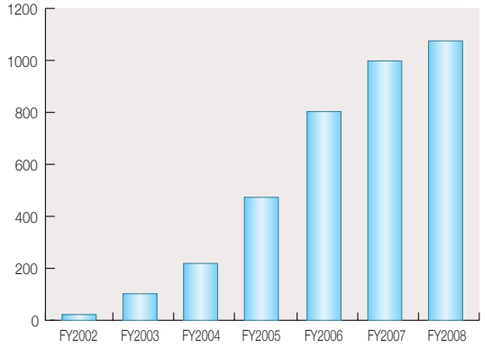
Number of patent applications (accumulated)



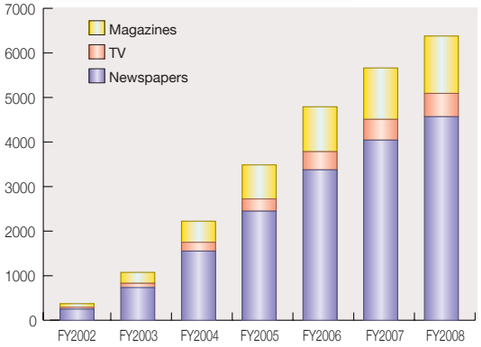
Number of achievements adopted by other projects (accumulated)



Number of products, practical applications, and established companies (accumulated)



Number of media reports (accumulated)



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Examples of Commercialization Strategies
(Examples of commercialization enhanced by R&D management)

In order to apply the university's R&D achievements for practical use and to create innovation, overall management of Knowledge Cluster Initiative projects becomes particularly important. In each region advancing the projects, the region's own management system is established according to a commercialization strategy considering the region/research field's characteristics, progress of R&D, etc.

R&D Management System of the Tokai Region

The Tokai Region (first stage: Aichi/Nagoya area) has introduced an R&D management system called the "Nagoya Model." The system adopts private companies' work procedures as reference. Prompt R&D for industrialization has been realized by phase management of R&D by the Knowledge Cluster headquarters as well as by a concurrent development system (concurrent management).

1. R&D Phase Management

- Defining R&D phases by setting a clear exit strategy
- To advance the overall phase, the Knowledge Cluster headquarters manages the progress of each project and invests resources intensively when a project is delayed.

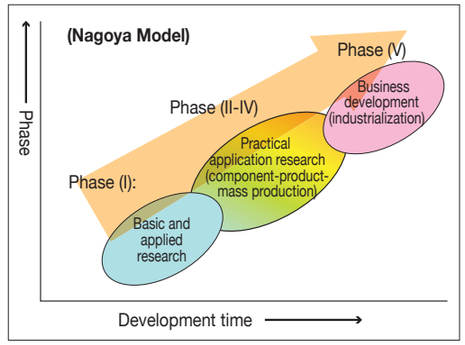
Phase (I) Basic and applied researches:
Aiming to create distinctive seeds for practical applications

Phase (II) Component development:
Setting a specific "target" based on newly discovered seeds and conducting necessary technological development

Phase (III) Product development:
Integrating/blending component technologies, setting a "target," and making/ improving trial models

Phase (IV) Mass production technology development:
Conducting technological development for mass production of the "target"

Phase (V) Business development:
Constructing a business model and commercializing the "target"



2. Concurrent Development System (Concurrent Management)

- It is imperative to integrate multiple-component technologies in order to realize final commercialization.
- They established a system where companies engaged in different products and fields can share the same development theme (final goal) while universities function as platforms. The system also enables the advancement of the overall phases concurrently.
- Participation and collaboration of many companies enables sharing/solving newly emerging problems as well as realizing prompt R&D.