

Collaboration the Key

In 2008 the national government launched a Project for the Strategic Development of Industry-Academia-Government Collaboration in a significant move to help boost strategic collaboration among industry, academic and government bodies. **The Japan Journal** reports on the challenges ahead.

As part of a program of collaboration among industry, academia and the government, technology stemming from research at Japanese universities started to be transferred to private companies including small and medium enterprises (SMEs) after the formulation of the Science and Technology Basic Plan in 1996 and the establishment of official technology licensing organizations (TLO) in 1998. The government adopted a policy of transferring the results of commissioned government research to the relevant implementing body, the so-called Japanese Bayh-Dole Act, in 1999 and enacted the Basic Law on Intellectual Property in 2002 in an effort to establish Japan as a nation built on intellectual property, effectively putting in place a framework whereby intellectual property and related patents produced by researchers affiliated with national universities belonged to the researchers themselves. The only exceptional cases in which research results were required to be returned to the government were major national projects that had been funded by the government. During 2004, national universities obtained corporate status as part of a program of incorporation, resulting in universities adopting a position similar to that of employee inventions in the corporate world.

Since then, collaborative projects among industry, academic and government bodies have been carried out via a framework whereby intellectual property is regarded as belonging to the relevant individual university and handled on an organizational basis. This prompted the implementing body behind a project to establish university intellectual property offices

to put in place a framework for handling intellectual property, aimed at transferring technology to forty-three selected universities over a five year period, including steps to formulate organizational intellectual property policies at each university and promote a basic understanding and raise awareness of patents.

Another aspect of the collaborative project among industry, academic and government bodies is the so-called cluster project, which brings up the potentialities of academic bodies and SMEs in local areas. The ultimate goal is to spur technological innovations and strengthen the competitiveness of Japan.

In other words, SMEs have their own advanced technologies and skills, and this features the Japanese industry. Japanese government emphasizes strengthening the foundations and international competitiveness of SMEs. In this sense, government's active promotion of cooperation among industry, academia, and government is very important and one of the most important political methods to support SMEs.

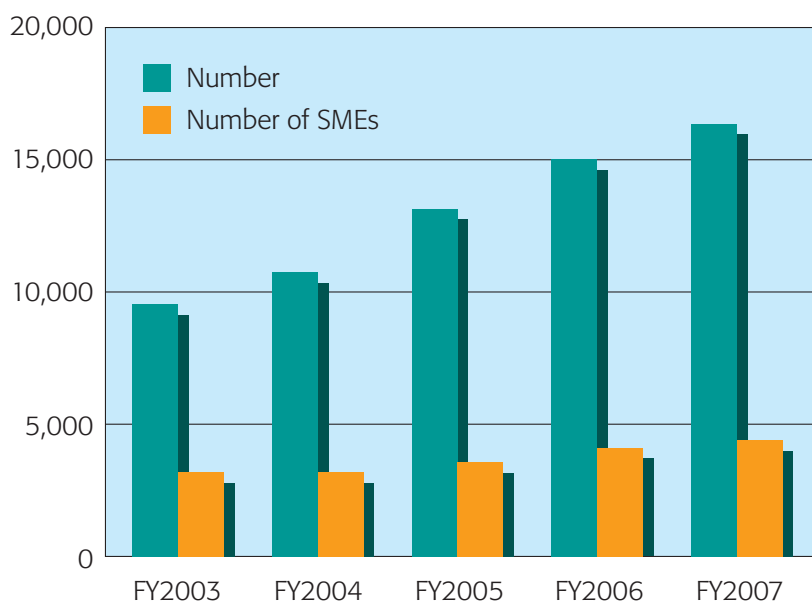
The Industrial Cluster Project's goal is strengthening the competitiveness of Japanese industry through the network of businesses, universities, and other institutions. METI plans to form regional industrial clusters to support start-up companies and raise world-class SMEs. Its three principles are (1) preparing a business environment that promotes innovation, (2) creating new industries in the fields defined as of strategic importance in the Economic Growth Initiative and other national programs, and (3) fostering the emergence of synergistic effects through tie-ups with the regional promotion policies that local govern-

ments and other bodies implement.

Recently however, administrative subsidies from national university corporations and subsidies for private universities, which universities use to cover their basic running costs, have continued to decline year on year. In response to such a difficult situation, this year saw the launch of a new venture entitled the Project for the Strategic Development of Industry-Academia-Government Collaboration, which is designed to enable all universities to engage in strategic collaboration among industry, academic and government bodies.

As part of this venture, fifty-five research projects run by sixty-six implementing bodies around the country have been selected under three categories: international industry-academia-government collaboration, activities capitalizing on individual universities' strengths and renewed efforts to strengthen the foundations of industry-academia-government collaboration. The overall project is divided into two main programs. The first is a strategic development program aimed at helping to establish a framework to strengthen collaborative capabilities among industry, academia and the government. This includes formulating funding and other plans for individual universities, providing government support for the national policy of acquiring international patents, furthering industry-academic-government collaboration in specific fields such as life science and working to create a system of industry-academic-government collaboration capable of contributing on a local level. Given the fact that universities that are unable to start working on intellectual property are in the majority, the government is also running a financial support program, which includes support to help broaden fields of activities so as to take industry-academia-government collaboration to new heights. Another program currently underway is the Coordinator Program. As you might expect, human resources are central to progress with the Project for the Strategic Development of Industry-Academia-Government Collaboration. Rather than simply occurring naturally be-

Number of joint research



Source: MEXT

tween universities and companies, collaborative activities require experts to bridge the gap between both sides. When engaging in joint research for instance, universities need access to human resources with specialist knowledge and practical experience in areas in which they have insufficient expertise, such as planning, contracts and public relations. In order to fulfill this role, eighty highly experienced members of staff from private companies have been appointed as Industry-Academia-Government Coordinators and are assigned to individual universities as required.

State of Collaborative Research Today

The number of joint research projects between universities and private companies including SMEs continues to soar (see **figure**). Joint projects between national, public and private universities and private companies numbered 16,211 and 4,087 of them were SMEs during fiscal 2007, worth a total of more than 40.1 billion yen (431 billion dollars). There were 18,525 funded research projects (1,752 of them were SMEs) too, resulting in 9,869 patent applications worth something in the region of 770 million yen (8.3 million dollars). The

number of patent applications being filed overseas also continues to rise. Elsewhere, donations to national universities are on the increase as well. However, the lower figures of SMEs are the national issue to be solved early. As many of them possess advanced technologies and patents.


As the process from inventing something and carrying out repeated research and development through to filing a patent application and getting it approved takes around seven years on average, in reality it takes quite some time before patent royalties start to materialize. Given that patents have automatically become the property of the relevant research institution since fiscal 2004, this means that, even though this system has only just got off the ground, universities are already receiving expenses for joint or funded research and have effectively earned at least 770 million yen in patent royalties as a result of their economic activities. As royalties are paid at the rate of 3–5%, the actual economic impact of universities' activities comes to around 10–20 billion yen (215 million dollars).

Overall, the changes in the figures mentioned above effectively demonstrate that, if the results of education and research at universities were to be rolled out in collaboration with indus-

try, companies and the general public would recognize the extent to which universities contribute to society and donate larger sums of money.

Due in part to the fact that efforts to establish a university intellectual property framework have only just got underway, as mentioned previously, there are various other issues such as the lack of official contracts and forms for the conclusion of joint research projects with overseas institutions. We need to work from the bottom upwards, starting by establishing a system for the distribution of such forms, promising research themes and English information on researchers via the Internet. It will also be essential to secure admin staff capable of handling such procedures at each university as soon as possible, whilst at the same time organizing internal training in intellectual property for university-based human resources. In actual fact, human resources such as these are in plentiful supply in the private sector, with a sizeable pool of highly experienced personnel available in the form of the baby boom generation, members of which have already started to reach retirement age. Harnessing their potential would be a superb solution in terms of making effective use of human resources, cutting costs and boosting employment.

Also the fruit of this challenge should be handed to SMEs to develop their high potentiality.

The government invested 2.8 billion yen (30.1 million dollars) from the national budget in industry-academia-government collaboration during fiscal 2008. The Project for the Strategic Development of Industry-Academia-Government Collaboration is a five-year project that will act as a lead-in period for the promotion of independent intellectual property activities that universities can handle without national support and further industry-academia-government collaboration in the future. Developing the necessary infrastructure to establish Japan as a nation built on intellectual property is one of the government's primary policy objectives. 

Hitoshi CHIBA, The Japan Journal