"Open Universities" and Regional Revitalization: Partnerships between Industry and the Academy in Japan*

Seiko Kitajima

Abstract: The move of universities to be oriented toward business has become apparent since the early 1980s in Japan, as exemplified by growing partnership activities between industry and the academy and emerging entrepreneurialism among universities. Ideologies of regional contribution are important in accommodating industry-academy partnerships, and space provides a basis in nurturing the ideologies. By making universities open to society, universities are to contribute to regions via such collaborative work as joint research with local industries and education for localities at large.

Despite the move of universities to be oriented toward business, partnerships contain hidden conflicts between industry and the academy, which are shifted toward, and mediated by, the state. They also contain contradictions between serving local businesses and seeking the academy's and capital's own interests, which are not necessarily contained within a locality or a region. The position of the state is also controversial, since promoting partnerships means its retreat from controlling universities. The persisting move of universities to be oriented toward business would widen these conflicts and elucidate the contradictions, which makes the state more difficult to mediate the conflicts. Then, it would be more important for the academy to recognize their own position and interests, and consider how to respond to the state and business.

Introduction

The academy has been questioned in the past two decades or so in industrial societies. The academy appears to be involved more directly than before in market economy, as universities have closer relations with industry and are becoming themselves entrepreneurial. Cooperation between universities and industry is not necessarily new. Close relationships between the academy and industry occurred in some fields of science in European universities in the late 19th century, and after their interruption, again in the late 1920s in Europe and the US (Etzkowitz and Webster, 1998; Weiner 1982). After the end of WWII, the academy and industry had by and large been apart, as governments having primary responsibility for financing research and education at

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universities. But, the relationships between the academy and industry seem to have changed since the 1980s. By collaborating with firms in terms of research and development, education, and training, universities appear to share interests with industry (e.g. Trumpbour, 1989; Newton and Bachbinder, 1988; Useem, 1981). There is also a sign that some universities are becoming entrepreneurial, by attempting to generate marketable outcomes from their activities (Clark, 1998; Maurice, 1986). Across industrial societies, universities are now at a cross road.

The move of universities to be associated with industry raises important questions concerning economy, politics, civil society, and space. The first one is about the role and position of the academy in society and economy. By nurturing labour forces for industry and often contributing to reproducing dominant ideology, university activities have played certain role in sustaining economic and political interests of the ruling regime (Poulantzas, 1969). Nonetheless, their activities have basically been regarded as of civil society. Research and education at universities have been distinguished from profit making activities of industry; universities have kept relative independence from an immediate concern of business. Now universities are to be involved in market relations, either indirectly via partnership research or more directly by marketing themselves research and education. The involvement of universities in business activities should influence the content of research and education at universities (see for instance, Mosher, 1995). Ultimately, it may cause conflicts between corporations and universities or individual faculties over possible gains from partnership research. Conflicts could also arise between academic labour and university management, if corporate management of universities proceeds. To what extent the academy can become business, how research and education at universities will be altered, and how the relationships between academic labour and university management will change, are the questions raised by the orientation of universities toward business.

Second, the move raises questions about the relationships between the academy and the state. As indicated in this paper and also research on university transformations, the association of universities with industry has often been encouraged by governments, which attempt to enforce market principles on universities (Martin, 1997; Etzkowitz, 1990). However, the state is in a paradoxical position in this move. The involvement of universities in market relations and corporate management means their independence from the government, thus causing a dilemma for its intention to keep administrative territory. Indeed, the state may not simply retreat in the move of universities be oriented toward business, because, alongside its encouragement for the move, it has often intervened more in universities matters. How the relationships between the state and the academy will become is also a question raised by the orientation of universities toward business.

Third, the move raises questions about the role of ideology and space in social mobilization.

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1) Here, the state includes a sets of institutions that not only exercise legal and jurisdictional power, but also informal role and hegemony. Thus, while the core institutions of the state consist of central and local governments, the judiciary, police and armed services, the state can also include cultural and academic institutions.

2) For instance, in Britain, Tasker and Packham (1994; 1993) indicate the government further attempts to intervene by undertaking "quality control" of university education, while it has taken initiatives to orient universities toward entrepreneurial culture since the 1980s. This paper identifies the same tendency in Japanese context.
By being undertaken with small and medium firms of a region or locality, universities’ collaboration with industry are often expected to be a means for promoting industrial innovation and revitalizing local/regional economies. In Japan, the notion of “regional contribution” (that universities should contribute to regions by making themselves open to regions) has played an important role in promoting university collaboration with industry. On the other hand, university-industry alliances could break the spatial boundary. Both universities and corporations could conduct partnership research with corporations and universities in other regions or countries, thus threatening the rationale for local governments to support university-industry collaboration, that it would be useful for local industries and economies. How space provides material and ideological bases for local/regional coalition making, and how they can split up, are also questions raised by the move of universities to be associated with industry.

This article discusses the move of universities to be oriented toward business expansion of partnership activities between universities and industry and the emergence of entrepreneurialism among universities in Japan. It examines the circumstances behind the move, the interests and initiatives which generated it, and the activities in which business oriented universities are engaged. The final aim of this article is to elucidate what underlying forces and issues exist behind the move and inquire the nature of transformation of universities. The following section overviews how the relationships between universities and industry has been altered in the past three decades in Japan. The third section discusses the background for the transformation, including governmental initiatives. The fourth section examines main activities of university-industry collaborations in light of the questions indicated in this introductory section. The concluding section assesses those activities and discusses their implications.

The path toward university-industry collaboration

In Japan, collaborations between universities and industry is termed industry-academy partnerships (Sangaku Kyodo). Generally, the partnerships are on research, but they could also be on technical assistance, education, and training. Namely, via partnerships, universities or faculties undertake joint research with firms, provide consultations for firms over technical and management issues, and offer courses designed for practical training. By the 1970s, universities’ collaboration with industry had been seen cautiously. The dominant view was that such a collaboration would jeopardize academic freedom, making universities mere servants of industry. The circumstances changed in the early 1980s, as administrative reforms and privatization of the public sector were undertaken. In 1983, the Ministry of Education (MOE) sent national universities a notice (Tsutatsu) to modify their rules so that university faculties could engage in work outside the university. Since then, partnership research has constantly grown in number. When they were first initiated in 1983, 56 cases of partnership research were undertaken in 21 universities. The number rose to 869 in 1990, 1,139 in 1991, and 1,704 in 1995 (Monbusyo Gakujyutsu Gakujyutsu, 1991). For instance, it was argued that partnership research of some U.S. universities with Japanese firms would threaten the U.S. economy by selling technology to Japan even if universities are supported by federal funds (Jacoby, 1991).
Kokusaikyoku 1997: 652), more than thirty times that of 1983. Industry-academy partnerships are now treated by the mass media as a way for the academy to go, with little cautious or critical opinion being raised; the segment which once opposed industry-academy partnerships, including national higher education union, appear to accept them.4

Initially, partnership research was undertaken mainly in universities of core regions, like Osaka University, Tokyo University, and Nagoya University, which are highly respectful national universities. But with formal and informal pushes by the MOE and various incentives offered by the government, industry-academy partnerships have spread to universities in peripheral regions. Across the country, both national and private universities are now engaged in some sort of industry-academy partnerships.

Centers for conducting partnership activities were also created on university campuses across the country. The idea to create such a center was first noted in 1986 by the second draft of the Temporary Education Council (TEC), an advisory body of the Prime Minister. Along with the recommendation of the Council, the MOE recommended that universities create Regional Cooperative Centers (RCCs) or similar ones to promote industry-academy partnerships in each region.5 Since this push by the MOE, most national universities have set up RCCs on their campuses. These centers not only engage in partnership research, but also undertake technical assistance to firms, training of engineers, and public-relations services (for informing university researchers). In 1998, the number of centers across the country reached 52 (Nikkei Sangyo Shinbun 6 April 1998). This means that nearly half of the national universities in Japan have created centers. If we focus on universities created specifically in each prefecture, nearly all universities have created a center.6

Business to connect university research with firms also emerged. As government restriction over technology transfer from universities toward businesses was de-regulated in 1998, organizations (TLO, Technology Licence Office) were created to make business of technology transfer from universities to corporations by patenting university research results and distribute the royalty among researchers and universities. By being created in association with a university or sets of universities within a same region, the TLOs are expected to be useful for promoting local venture businesses.7

4) The main argument of the higher education union is that partnerships are not necessarily wrong if they contribute to "regions," which imply general public including small firms.

5) This is comparable to the University-Industry Cooperative Research Centers created in the United States under the University-Industry Cooperative Research Centers Program by the National Science Foundation initiated in 1972 (Gray et. al. 1986). English name of Regional Cooperative Center differs depending on universities. Some universities call them Center for Cooperative Research and Development, and others call Center for Joint Research.

6) In Japan, there are 98 national universities, most of which have graduate courses. There are 4 other universities which are specifically targeted for graduate education. If private universities are included, there are 500 universities in Japan (Sonoda, 1996).

7) The TLOs are either in the form of corporation or of public utility corporation (Keikoku Hojin). By May 1999, six universities (both public and private, including Todai, Kyodai, Tsukuba, Tohoku, Waseda, Nichidai) created the TLOs (Nihon Keizai Shinbun, 24 May, 1999).
Backgrounds and government initiatives

The move of universities to be associated with industry should be understood in the context of economic restructuring and political reforms undertaken in the 1980s. As Japanese growth process came to a limitation in the late 1970s, a new way of regulation has been explored by undertaking administrative reforms and privatization since the 1980s (Kitajima, 1998). Some functions of the central government have been transferred to the private sector, while some others have been toward local governments.

The academy was not exceptional from the administrative reforms. The second Temporary Administrative Council (TAC), an organization that examined ways for undertaking the reform, recommended university reform in its basic draft issued in 1982. In responding to the draft, the Temporary Education Council (TEC), an advisory body of the Prime Minister, offered a scheme for reforming higher education. The scheme included: industry-academy partnerships, diversification of higher education, strengthening the management system of universities, and an increase in beneficiaries’ cost. Upon the TAC’s recommendation, the MOE sent in 1983 a notice (On Dealing with Partnership Research with Private Firms) to the national universities which it supervises and recommended them to amend regulations so that they could undertake joint research with industry (Hamabayashi 1987; Nihon Keizai Shinbun 11 August 1993). Although the government did not amend the National Service Law, which prohibited faculties of national and public universities to engage in private business activities outside their office hours, the notice in fact served the same purpose as modifying the law. Further initiatives have been taken to accommodate industry-academy partnerships: working restrictions on university faculties were deregulated; financial aids for corporations to undertake partnership research began to be offered; and a law to deal with the issue of patent rights obtained by partnership research was established. Graduate universities targeting exclusively for partnership research and education were also created in the early 1990s.8

Privatization of national universities would be the ultimate initiative to make universities be oriented toward businesses, and not only be associated with industry. Since 1997, the Administrative Innovation Council of the Cabinet (with Prime Minister as a chair) has probed a possibility to privatize national universities by making them independent agencies. Although an agreement has not yet been made within the government, the final conclusion will be made by 2004. The government’s urge to make universities be associated with industry should be a preceding step of privatizing national universities.

For the government, making universities be associated with industry is a means to reconcile financial constraints and the necessity to respond to the requirements of industry. As fiscal crisis became apparent in the late 1970s, the government has sought to deal with the issue by undertaking administrative reforms and privatization in the 1980s. After having privatized the national railways, the government has probed another candidate to privatize, and along with the Post Office, it found the national universities a possible candidate. The requirement of industry was also

8) One was created in Ishikawa prefecture in 1990, and the other was in Nara prefecture in 1993.
an important factor. As the traditional, heavy-chemical industry came to a limitation in yielding a profit share, it became necessary for industry as a whole to develop new areas, such as those based on high-technology, information, and knowledge, which involves risks to invest. In addition, there were problems of labour shortages in these areas.\(^9\) Making use of universities appeared to be a means for dealing with the problems of industries, and business leaders have expressed their expectations for industry-academy partnerships to resolve those problems.\(^{10}\) By letting university researchers engage in corporate research and projects, partnerships enable industry to deal with the labor shortage, as well as disperse risks involved in investing the new areas.

Another important factor for the government's (in particular, the MOE's) eagerness to make universities be associated with industry is socio-demographic. By the first decade of the 21st century (2009), the population of 18 years old is expected to decrease by 40\% (Nihon Keizai Shinbun 2 November 1997). This is a threat for MOE's administrative territory. To develop demands for persons from corporations and other segments which were out of the category of 18 years old, such as the elderly and housewives, appeared to be a means for this. The MOE's life-long education policy for the adult was intended for this purpose. Acknowledging the necessity to respond to changes in the education demands, which occurred in the globalization, informatization and aging population, the MOE initiated the Life-long Education Promotion Law in 1990 (Inowe and Murata 1990; Monbusyo Shogai Gakusyu Shinkoka 1990). Conceptually the life-long policy and partnership policy are different, but they are in fact mutually related. As shown by the range of activities that RCCs were intended to serve — from retraining of engineers to public relation services — making universities open to general public could also serve retraining employees who are outnumbered. Indeed, the first draft of the TEC stated the necessity to organize life-long education in association with general public's requirements, education and training within firms, and existing culture centers (Rinji Kyoiku Shingikai 1985). The MOE also attempted to adjust its policy with the interest of cultural industries, and the industries welcomed the policy as possible business opportunities (Kobayashi, 1991).\(^{11}\)

Universities were not reluctant in cooperating with industry. Although their willingness was initially induced by MOE's pressures, the expectation of younger population decline was also a factor. Under the expectation, universities, in particular those in peripheral regions, have worried that they would not be able to draw a minimum number of students to sustain themselves. By demonstrating that they are contributing to regional economies and education for local residents

9) In the early 1990s, Roundtable Conference toward High-technology and Information (Hitechka-Jyoho-ka Kondankai), an extra-government organization of the MITI, warned of an acute labour shortage in the coming decade. It reported that there would be a shortage of 200,000 engineers of the needed 2.1 million in 1995, and a shortage of 600,000 of the needed 2.8 million in 2000 (Nikkei Sangyo Shinbun 14 June 1991). A report of the Federation of Economic Organization (Keidanren) on employment and training problems expressed business concern over labour problems and demanded for government education policy (Hamabayashi 1991).

10) For instance, a business leader expressed his expectation for partnerships by noting difficulty for a company to conduct research and development dealing with rapidly evolving technological innovation (Nakahara 1997). A manager of a big electronics company (Matsushita Electronic Industry) stated that "forecasting research of new materials is difficult " (quoted in Nikkei Sangyo Shinbun 22 July 1987).

11) For instance, the MOE held a roundtable conference made up of the major firms of culture businesses (Nihon Keizai Shinbun, 18 October 1988).
at large, partnerships appear to be a sales appeal to regions and localities where universities are located. For the universities as organizations at least, to be positive about partnerships could be proof that their universities are worthy to exist, since they contribute to regions.

On the other hand, local governments are increasingly unable to expect financial support from the central government when they came gradually under the constraints of budget shrinkage. They thus become interested in entrepreneurial projects for their survival. The MOE also expected local governments' involvement in promoting industry-academy partnerships. As mentioned later, the ministry required local supports be ensured for a RCC to be created on an university campus. Expecting that RCCs would contribute to regional economic development, local governments have offered financial support for the centers. Ideologies of regional contribution (Chiki Koken) have been advocated by the government (MOE), local government, businesses, mass media, and the academy itself. Industry-academy partnerships were regarded the same light as that universities are open to society and contribute to regions.

Activities and characteristics

i) Research, education, and training

Joint research in the areas of high technology and sciences, such as new materials, advanced machinery (e.g. electron microscopes), and bio-technology, are the main activities of industry-academy partnerships. Unlike the areas which are already on a track (e.g. electronics), these are new areas that involve risk to develop. There were also incentives for university researchers to conduct joint research. Under chronic lack of research funds available from government, some researchers, in particular those for whom funds are vital for their research, welcomed the opportunities to acquire research funds from the private sector.

Training is also a main area of partnership activities. By retraining labour forces which are out-skilled, the training is eventually expected to contribute to regional economies by assisting technological innovations of small and medium firms in regions and localities. Regional Cooperative Centers are expected to play a primary role in training by undertaking such activities as education and technology counseling. For instance, in the case of the Advanced Institute of Science and Technology, Hokuriku, a graduate university created for conducting partnership research and education, local businesses send their employees to the center at the institute for mastering advanced technology in high-tech industry. By retraining the employees so that they can catch up the daily changing innovations of advanced technology, which industry alone cannot deal with, the center is expected to be a core of training labour power (Nihon Keizai Shinbun, 24 June 1995). The RCC at Gunma University established a vocational course for doctoral students. Under the guidance of “guest professors” (who are often engineers sent from firms), the students undertake such work as literature research, observation of corporations, and practical training (Otani, 1990). This system enables the guest professors to use the doctoral students as their research assis-

12) For instance, Amano (1997), a professor of national school institution, maintains national universities in non-metropolitan regions must actively interchange with regions since their role has changed.
tants, as well as makes the students be familiarized with corporate culture and thereby be ready for labour force in corporations.

Vocational courses which have increased in number recently in university curriculums also serve training. In Japan, university education has been primarily intended to serve industrial needs: to nurture people with industrial skills (Sangyo-jin) who can readily enter the labour force in corporations. However, in the economy based on information and service industries, this type of Sangyo-jin became obsolete; the desired type are those with practical skills such as computer and languages. Vocational courses that have increased in university curriculums are designed for providing students with those skills adaptable for these emerging industries.

Industry sponsored courses are also offered through monetary contributions from corporations. Corporations such as security, insurance, and electronics provided money for universities to create courses that deal with subjects related to the corporations' businesses. For instance, finance courses were created at Tsukuba University and Tokyo University, an insurance course at Kyushu University, courses of computer and telecommunication, information science, future materials, and urban development engineering at Tokyo University, and an intelligent system course at Tokyo Engineering University (Yamabe, 1990). Although the industry sponsored courses are offered on a short-term basis, they nonetheless have influenced university education to be more practically oriented.

ii) Regional economic revitalization and civic activities

Industry-academy partnerships do not end by undertaking specific research projects and education activities. As shown by the primary justification for the government to endorse partnerships, they are ultimately supposed to contribute to regional economies. The RCCs are expected to play a key role in connecting partnerships with regional economic revitalization. Indeed, the initial plan of the MOE in 1988, which intended the RCCs to serve revitalizing regional/local economies, targeted regions to create the centers on those dependent on structurally declining industries and concentrated by small firms. The RCCs were also expected to be centers to implement the Technopoli Program which were initiated in 18 regions including Hokkaido.

The MOE allowed the creation of a RCC on the conditions that a university has experience in partnership research, and that a regional support system (presumably a local government's support) is established (Iwabuchi, 1997). Expecting that RCCs would contribute regional economies, local governments have basically supported RCCs. Under pressure by the central government and supports by local government, most national universities created RCCs on their campuses. As has been mentioned, most prefecture-based national universities have centers now.

It is however doubtful how well agreements were made between universities and localities (in particular, local businesses) over the nature of RCCs. Generally, universities expect RCCs to be useful for their research, or serve public-relations for universities by their consultation activi-

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13) Examples include: Muroran City, where a steel company began rationalization and there was a sharp population decline from the early 1970s (25,000 during the 15 years from 1973); Gunma prefecture, where small textile industry firms were concentrated; and Gifu prefecture, where small ceramic industry firms were concentrated.
ties. But local businesses expect RCCs to respond to their immediate business needs, such as technology consultation and training engineers in advanced technology. Such expectations of businesses appear to be stronger in non-metropolitan regions, where universities that can conduct high-tech research are small number. The discrepancy between universities and local businesses over the centers’ role has in some cases became apparent; some localities have claimed that the centers are not necessarily acting along with the expectations of local business interests. For instance, in the case of RCC in Ehime University in the Shikoku region, the business community in the region complained that few researchers in the university do research for the sake of locality (Nihon Keizai Shinbun, Local ed. 7 January 1998). A different assessment is offered by a chair of the center. While acknowledging that the center tends to be criticized, the chair asserted that research does not always produce quick results expected by business (Iwabuchi, 1997).

Industry-academy partnerships also engage in civic activities for residents in a region or locality, such as lecturing in open classes (often without fee) for local residents. These activities were encouraged under the MOE’s life-long education policy, which, as mentioned, was initiated in tandem with the partnership policy. Making universities civic activity centers is likely to be considered the primary means of carrying out the life-long education policy; the MOE required universities to hold open-class lectures for residents and other related civic activities. In the early 1990, nearly all national universities held the open classes, which dealt such subjects as culture, professional activities and sports (Monbusyo Shogai Gakusyu-kyoku, 1991).

iii) Entrepreneurial universities, making business of partnerships, and local/regional networking

Universities do not end by forming partnerships with industry. Some universities even began to pursue an entrepreneurial policy. Classes and courses focusing on entrepreneurship are created, and partnership research targeting entrepreneurialism are undertaken. For instance, Kochi University of Technology created in 1999 a graduate school with an entrepreneurship course. The course intended to train people who are interested in establishing venture businesses. By encouraging partnership research between the graduate school and enterprises in the prefecture, the course is expected to contribute to strengthening the industrial basis of the prefecture (Kochi University of Technology, n.d.; Nikkei Sangyo Shinbun, 19 December 1997). Shiga University, a national university in Shiga prefecture in the Kansai region, established a joint research center to undertake research on business management, market planning, and organizational management. Aimed to be an “open university” for the region, middle managers of business within the prefecture and professors undertook joint research concerning new development in enterprise management, and held conferences on the subject (Shiga University n.d.; Nihon Keizai Shinbun, 22 January 1995).

Entrepreneurialism is more evident in private universities. Ritsumei University, a private university in the Kansai region (originally it was in Kyoto prefecture, but has partially moved to Shiga prefecture), established on its campuses Liaison Offices, agencies to handle joint research with enterprises and undertake enterprise consultation (Sakamoto, 1997). On the grounds that the U.S. economy has been supported by a strong connection between universities and industry (its
model was Stanford University), professors (from science and engineering, and management) of the university argued the necessity for universities and industry support each other (Nihon Keizai Shinbun, 23 August 1995).

Enterprises have also emerged to make business of industry-academy partnerships. As mentioned, by engaging in technology transfer from universities to industry, TLOs are the business intended for supporting industry-academy partnerships. Other corporations or semi-public corporations have also been created to accommodate partnerships. Keihanna is a third sector organization created as a core management organization in the Kansai Culture-Academy Research City, a Kansai version of Tsukuba Science City. Financed by the central government, local governments (Kyoto, Osaka, and Nara in the Kansai region), and corporations, Keihanna organizes partnership research projects and makes a data base of the results of that research. By offering the data base to associations of local firms, Keihanna mediates the academic city and small and medium sized firms in the region (Nihon Keizai Shinbun, 12 July 1996).

The Kyoto Research Park (KRP) was created by an utility company to accommodate partnership research and information exchanges. The park was created by redeveloping a central part in the Kyoto city, which faced industrial decline (textile industry) and population decrease. Inviting major universities in the Kansai region and corporations centering on high-tech industry to join in the park, the KRP is intended to network industry-academy partnerships within and across the Kansai region (Kimura, 1991).

Regional networks are also created to promote entrepreneurialism of universities. Universities and individual faculties in the Kansai region, and the KRP created Kansai TLO, which undertakes technology transfer from universities to corporations in the region. Similar TLOs based on regions are also planned in other parts of the country: one in Kyusyu region centering on Kyusyu university, another in Cyubu region centering on Nagoya university, and the other in Hiroshima prefecture.

Assessment and Discussions

The association of universities with industry appears to be intensified, as partnership activities persist with the institutional support by the governments. The move of universities to be entrepreneurial is also apparent, as seen in the increasing number of entrepreneurial courses, orientation of university administration toward corporate management, and the emergence of enterprise businesses to capitalize information on research and development. Furthermore, as shown by the creation of regional networks to capitalize information on research and development, entrepreneurialism has spread to regional levels, not only at the level of each faculty or university.

The possible conflicts that may arise from the engagement of universities in market activities and corporate management are not apparent yet. This may be in part because corporatization

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14) 55% share by private companies, and 45% by the Japan Development Bank and three prefectures (Nihon Keizai Shinbun, 28 June 1989).
of universities has not so far promoted, but the mediation of the state also plays a role in containing possible conflicts. These conflicts are shifted toward those between academic labour and the state, or between capital and the state. Although the MOE undertook initiatives to promote industry-academy partnerships by recommending universities to create RCCs and conduct partnership programs at the RCCs, the Ministry has not allocated enough funds to operate the centers. Thus, university faculties are obliged to carry out such work as clerical duties related to the RCCs, and teaching enterprise personal and regional residents, which has not been the regular work of university faculties. So far, faculties in Japanese universities have not complained about the increasing burden on their work loads, partly due to the peculiar character of academic labour at universities and the ideology that universities should be open and contribute to regions.

It is however questionable to what extent the state can continue to mediate between industry and the academy. As mentioned, the government began to support university researchers to own patents of their research. Although this is intend to promote partnerships, it could also lead an opposite result by inducing conflicts between industry and universities or individual faculties. Indeed, the position of the state is paradoxical in promoting partnerships. Despite the government’s support for universities to make business of partnership research, it does not necessarily expect universities to be totally privatized, as seen by the initial opposition of the MOE to making national universities independent agency. Although the MOE’s policy has been changed of late by allowing the corporatization of national universities, it still hopes to sustain critical power to supervise universities. It remains to be seen how the MOE could resolve the contradiction between privatization and state control.

Industry-academy partnerships also contain spatial contradictions. Despite the importance of the government’s role behind the growth of partnerships, the government initiatives should not have been so effective without the spatial framework which, as shown by the cases of regional based TLOs, provided ideological and material bases for regional/local collation making. Under the notion of regional contribution, universities and/or researchers have felt the necessity to support partnerships, and even more, prestige in undertaking partnership research. However, even if how effectively these frameworks have worked, the advance of partnerships could break up them by revealing their contradictions. The interests of industry and the academy need not to be contained within a same spatial framework. The discrepancy between local industries and the university in Ehime prefecture shows that local businesses and the academy do not necessarily share a same interest in conducting partnership research. In addition, if more regionally-based TLOs are created, competition over those TLOs will arise and be intensified. It remains to be seen whether and how both ideological and economic grounds of space would be sustained if partnerships are proceeded.

Conclusions

The examination of the move of universities to be oriented toward business elucidates hidden conflicts between industry and the academy, and between the academic labour and university management, the importance of the state in mediating those conflicts, and its paradoxical position
in promoting the move. The position of business is also paradoxical in partnerships, as they could eventually create possible competitors. The space also plays important role in facilitating partnerships, by providing ideological and material bases for local/regional collaboration making. But these bases could also break down, if the difference between academic interest and business interest become apparent, and competition over marketing partnership research are intensified. In this regards, industry-academy alliances contain contradictions on political, economic and spatial grounds.

However, meanwhile, the orientation of universities toward business would continue. Research and education serving primarily profit making would be valued, while the values to seek truth and serve public interests would be eroded. Universities will be more involved in competition over marketable research and education. Given the uneven distribution of university resources, the intensifying competition among universities may lead to more divisions among universities which already exist in Japan. Currently, opposing forces to this direction are slim in that country. One possibility that such forces to occur is when the differences in values between business and the academy, and in class interests between the academic labour and university management, are made explicit as partnerships proceed. This means breaking up the ideological and spatial apparatus which has played such a critical role in forming coalitions between business and the academy.
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