

Strengthening the Relationship between Higher Education and Regional Economic Development

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ABSTRACT

This paper analyzes the relationship between higher education institutions (HEIs) and regional economic development, focusing on the evolvement of various systems of higher education, and stressing that strengthening higher education is a key strategy for successful economic development. Further, this paper investigates and studies the crucial factors that enable certain national higher educational systems to achieve a high level of success and which promote economic development, while addressing the needs and objectives of specific countries and/or regions. The paper posits that the values of academic freedom must occupy the highest priority in educational systems that aspire to promote its national and/or regional goals for sustainable economic development.

In studying the current situation in various parts of China, this paper discusses the essential progressive need to promote academic freedom in Chinese colleges and universities, which is necessary for all successful colleges and universities. This, in turn, will enable them to encourage and prepare research personnel, business leaders, and entrepreneurs, while developing cutting-edge innovations and industries. Finally, this paper seeks to identify and discuss specific strategies and programs that have proven successful in certain regions/countries and that can be adapted to the current educational needs of growing and vibrant countries such as China.

INTRODUCTION

Consistent with the experience of most developed countries, knowledge has been the major incentive and foundation for successful economic development (Ledgerwood & Broadhurst, 1998; Laukkanen, 2000; Peck & McGuinness, 2003). Higher education institutions (HEIs) are places where knowledge is acquired and transmitted, and successful enterprises rely on them to achieve sustainable development through the transfer of technology, the cultivation of talents and ideas, and the promotion of entrepreneurship. Regional analyses suggest that success depends heavily on institutional “thickness” (Amin and Thrift, 1994; Indergaard, 1997; Cooke and Morgan, 1998, cited in Allison & Keane, 2001) or so called “social capital” (Putman, 1993, cited in Allison & Keane, 2001). We firmly believe that successful economic development relies heavily on a vibrant and progressive system of higher education.

Depending on the level of economic development in a specific country or region, certain key ingredients are absolutely essential and are best provided by the higher education establishment. For example, in countries or regions with a low level of economic development and significant needs, the most critical ingredient is for a system of higher education that addresses the basic needs of literacy, fundamental scientific knowledge and an understanding of how economic systems function. In contrast, in the more highly developed countries or regions, the need for higher education resources will include a more sophisticated level of teaching faculty, plus a

highly productive and competent level of research capabilities of university faculty members. Between these two extremes, exist models of economic development that call for varying levels of competence, skills, application and resolve. As the economies in certain nations and/or regions develop, the higher education systems need to adapt in order to better serve the changes and assist the process of development.

According to the World University Rankings (The Times Higher Education Supplement [THES], 2006), the top ranked universities are primarily located in the more developed countries. This is because in the early stages, higher education in those countries adopted the necessary policies to develop itself, thereby assisting economic development in those nations. The higher education systems and economies in those areas have mutually promoted each other, so that the more developed areas have the best higher education systems, and those countries that have better higher education systems have more highly developed economies compared with other nations and regions. America was a relatively poor country when it was first established, but things began to change about the time that the country embraced the concept of academic freedom as practiced in Germany in the 19th century. In addition, because the United States persisted on this path, America's HEIs have been continuously enhanced. According to THES (2006), among the top 20 world universities, 11 universities are located in the United States. And according to the University Ranking of Shanghai Jiao Tong University (2005), there are 17 universities located in the United States among the top 20 world universities. These universities and their graduates eventually helped the economic development of the nation, so that

the United States is one of the most highly developed countries in the world.

When one examines the relative achievements of universities that have been ranked in the top tier of all universities worldwide, in contrast to those that have been ranked in the bottom tier, it is easy to discern the reasons for the success of the higher ranked universities. It is not merely their technical skills and knowledge that sets them apart. More specifically, those institutions that have been ranked in the upper ten percent of all colleges and universities worldwide exist within an environment that has promoted and continues to promote and protect academic freedom to learn, teach and conduct research.

This paper analyzes the critical role that higher education plays in regional economic development. It also focuses on the development of certain systems of higher education and stresses that improving higher education is a key strategy for regional economic development. Further, this paper investigates and studies the critical factors that enable certain national higher educational systems to achieve a high level of success and which promote economic development while addressing the needs and objectives of specific countries and/or regions. In studying the current situation in various regions of China, this paper then discusses the need for certain changes and modifications in Chinese colleges and universities which would enable them to achieve higher levels of success in competition with colleges and universities worldwide. Finally, this paper identifies and discusses specific strategies and programs that have been proven successful in certain regions/countries and that can be adapted to the current educational needs of growing and vibrant countries such as China.

HIGHER EDUCATION AND REGIONAL ECONOMIC DEVELOPMENT

Beginning with the passage of the Morrill Land-Grant College Act in 1862, the American government has prevailed upon higher education institutions to assist in the development of the national economy (Perorazio, 2000). Thus, the relationship between higher education and government can be described as an ongoing series of “social contracts” – an expectation that higher education should provide a return to the society for the public investment provided (Perorazio, 2000).

Since the late 1800’s, additional studies have focused on the relationship between higher education and economic development. Previous research had focused mainly on three points: 1) HEIs can provide knowledge and skills that meet the demands of regional economic development; 2) HEIs play a critical role in regional economic development; 3) HEIs are promoters of internationalization, which links the local to the global.

Producers of Knowledge

According to Duderstadt (2000), we are now entering the age of knowledge, in which the key strategic resource necessary for prosperity has become knowledge itself. As knowledge is created, absorbed, and applied – primarily by keenly educated minds – universities in particular will play increasingly important roles. Erich Bloch, former Director of the U.S. National Science Foundation states:

“The solution of virtually all the problems with which government is concerned:

health, education, environment, energy, urban development, international relationships, economic competitiveness, and defense and national security, all depend on creating new knowledge—and hence upon the health of our universities” (cited in Duderstadt, 2000, p. 3).

Fran Hulbert, Director of Skills Policy at the North West Regional Development Agency says:

“Knowledge is an invisible resource that impacts significantly on the regional economy in many ways...Universities are vast repositories of knowledge, supplying the business community with products, training, qualifications, high quality employees, consultancy services and innovation solutions. They are also a key stakeholder within the economy as a major employer, both directly and indirectly, a major owner of capital such as property and facilities – and they are also a very stable feature in the regional landscape. The cumulative power of all of these factors makes universities significant strategic partners both within the region itself, and as a national voice to influence government.” (Cited in Robson, Keith, & Deas, 1998, ¶ 3)

According to Knight (1995, cited in Allison & Keane, 2001), the focus on knowledge has been a key feature of economic development in the 1990's. In “post-modern” economic structures, knowledge-creating enterprises, including universities and professional firms, are seen as critical to developing competitive advantage for localities (Ledgerwood & Broadhurst, 1999). Regional analyses also suggest that success depends heavily on institutional “thickness” (Amin and Thrift, 1994; Indergaard, 1997; Cooke and Morgan, 1998, cited in Allison & Keane, 2001) or

so called "social capital" (Putman, 1993, cited in Allison & Keane, 2001)). Regional economies should be knowledge-based. To achieve economic success, regions need to emphasize innovation and see regional constitution as learning regions (Allison & Keane, 2001). Regions ought to become learning regions to acquire economic development, since as Goddard (1997, cited in Allison & Keane, 2001) argues that institutional thickness is more than a strong presence of institutional bodies, rather, there is a high level of interaction and a mutual awareness of common purpose generating tacit knowledge and lifelong learning. Actually, the traditional role of universities is changing. Previously, the main objective of universities was to increase and transfer knowledge, but currently universities are engaged in regional economic development and they are also involved in local employment, as well as university spin-offs and growth (Lazzeretti & Tavoletti, 2005).

A Crucial Factor in Regional Economic Development

Chugh (1997) argues that the HEIs play a vital role in assisting business and community organizations become engaged in promoting economic development. He believes that institutions can provide small business assistance, workforce and entrepreneurial development, international trade and investment assistance, total quality management, technology transfer and product development. He also cites the Internet and computer services, economic research, environmental and forestry management, continuing education, training programs, assistance to community organizations, as well as providing conference and workshop facilities.

Morgan (2002) also suggests that it now has been accepted that higher education plays a critical role in regional development. According to the National Report in UK (National Committee of Inquiry into Higher Education [NCIHE], 1997, ¶ 2), one of the purposes of higher education is:

“to serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels”.

The British Government's White Paper on Enterprise, Skills and Innovation (DTI and DfEE, 2001) requires Regional Development Agencies to develop their cluster strategies further, by including partnerships involving higher education (Peck & McGuinness, 2003).

Vest (1996) reminds us of Michael Porter's argument about the importance of "core clusters" of talent and infrastructure for economic health. Further, Vest (1996) believes that of all the "core clusters", higher education and preeminent research universities remain our greatest asset.

Robson, et al (1998) suggest that HEIs have a role in supporting local and regional economic development through a variety of aspects of HEIs' work, such as involvement in local and regional partnerships, links with local business and industry through targeted training and research consultancies, the establishment of research incubators, science parks, quasi autonomous R&D companies and the commercialization of higher education research via spin-off companies and patents. Also cited are student placements in local businesses and the tying of student projects to the needs of businesses and local community groups, and through HEIs' wider role

as part of a network of knowledge industries, a feature which itself is used in local and regional promotion to attract overseas inward investment. Therefore, economic development policy-makers are increasingly attempting to draw universities and colleges into their strategies.

Different kinds of HEIs serve different needs of economic development. Vocational institutions meet the increasing demand for skilled workers, while research institutions improve the transfer of new technologies to business, and HEIs on the whole can create better links between the needs of business and the education of students (St. Paul, 1996).

A Link between Local and Global Development

Concurrent with the development of economic globalization, higher education plays a most critical role in linking global and local development (Thanki, 1999). The involvement of colleges and universities in regional economic development is enhanced by the growing importance and globalization of knowledge and technology. Furthermore, colleges and universities do not merely benefit the growth of regional economies, but also they provide enhancement of social, political and cultural life in the region.

Based on a case study regarding the Dutch University of Twente, Lazzeretti & Tavoletti (2005) argue that local economic relevance and international excellence are

not incompatible objectives (Lazzeretti & Tavoletti, 2005).

Goldstein & Drucker (2006) examined the influences of 4-year colleges and universities in the United States, focusing on the internal and external factors that affect regional economic development, and the spatial extent of their impact, while analyzing the effects of specific university functions. They found that knowledge-based university activities, particularly teaching and basic research, have substantial positive results in regional earnings gains. They argue that the greatest impact occurs in small- and medium-sized regions, and further suggest that universities may be able to function as a substitute for agglomeration economies (Goldstein & Drucker, 2006).

Gunasekara (2005) discusses the role of universities in shaping regional agglomeration in Australia. He states that universities carry out an important extensive developmental role, including education, research and incubation of industries and enterprises.

Lin (2004) argues that higher education overall provides a positive and significant affect on Taiwan's economic development, and that engineering and the natural sciences majors play the most prominent role in this process.

Atkinson & Reed (2000) suggest that California's education system and its economy maintain a close link with each other, and as the California economy becomes increasingly information-based, this connection will become even more consequential. The employers in the state will rely on universities more than ever to provide graduates who are well-prepared for the more intellectually demanding jobs.

Since universities in the state of California understand that the success of California's future economy depends on the effectiveness of the state's education system, they are working to strengthen the education-economy continuum so that students receive the preparation they need to succeed (Atkinson & Reed, 2000).

THE KEY ELEMENT OF SUCCESSFUL HEIS

As the former Director of the U.S. National Science Foundation Erich Bloch states, "...to solve the problems associated with regional development, it is essential to maintain the health of universities (cited in Duderstadt, 2000)". We argue that a healthy university must have good systems for the faculty to carry out research, to create and transfer knowledge to the students, cultivate innovation, while encourage the university to interact with industries.

When we examine the top ranked universities in the world, we find that they are mainly located in the US and UK, but especially in the US. As mentioned previously, HEIs are playing a vital role in regional economic development. If one wants to improve regional development, it is essential to understand the importance of HEIs in the region, and how to maintain successful HEIs.

Now, an important question needs to be asked – what is it that makes HEIs in America so successful and excellent?

In China, scholars have carried out many comparative studies between Chinese universities and American universities, expecting to discover the differences between the systems of higher education in order to enhance Chinese universities. Zhang &

Jiang (1994) argue that American universities have attracted the best teachers, developed better management systems, and world-class research facilities (Zhang & Jiang, 1994). Ren (2006) believes that China should adjust the orientation of universities to help the progress of the social and economic development of the nation. Pan (2006) suggests that because of the procedures, structure and function of higher education in America and China are different, the two types of higher education systems have achieved different status. Jiang (2005) argues that the main differences between the two types of higher education systems are in the framework and educational purpose of the university.

Viewed from the perspective outside of China, we contend that it is essentially the values of academic freedom that lead to the main differences between these two systems of higher education. Currently, many Chinese universities are attempting to attract excellent overseas Chinese professors to return to China to teach and do research. Besides salary and housing, the main concern of overseas Chinese professors is for the academic freedom to do research and teaching without interference.

If there is no or very limited academic freedom in universities, a faculty's desire and ability to carry out research will be restrained. They will have little motivation to do what they are prepared to do, because they know that there will be many limitations. Under such conditions, students too have little freedom to question and debate teachers; instead, they are required to repeat what the teacher believes and they will only do what the teacher wants them to do. Thus the innovation of students is severely limited. It is clear that if a university does not have strong faculty who can do research, and

does not have excellent students who can think critically, it will be very difficult for a university to achieve true excellence.

There are two types of academic freedom in America:

1. Individual academic freedom that protects the right of individual professors.
2. Institutional academic freedom that protects universities from interference by government, a right that applies to the community of scholars, not to individual faculty.

(Standler, 1999, ¶ 16)

Individual academic freedom is the relationship between professors and the university administration. The “1940 Statement of Principles on Academic Freedom and Tenure” promulgated by the American Association of University Professors (AAUP) spelled out the general expression of individual academic freedom. Although this Statement by the AAUP has no binding legal effect, the AAUP can and does publicly censure colleges and universities that they believe have violated the principle of academic freedom. Nearly all major US colleges and universities have adopted this Statement, or a variation of this Statement.

The clearest definition of institutional academic freedom in the USA is referenced in a U.S. Supreme Court opinion of 1957. According to this definition, academic freedom means that the university can “determine for itself on academic grounds” :

1. who may teach
2. what may be taught
3. how it shall be taught, and

4. who may be admitted to study.

(Regents, cited in Standler, 1999).

ACADEMIC FREEDOM AND AUTONOMY

Institutional Autonomy

Edward Shils (Ma, 2004) suggests that institutional autonomy is the freedom that higher education institutions enjoy as entities not interfered with by the nation, religious organizations, and/or other entities or individuals, such as politicians, government officers, religious officials and entrepreneurs. Academic freedom and university autonomy are the foundations of a modern university. These two principles are inextricably bound together. In the early part of 19th century, Oxford University and Cambridge University had considerable autonomy, but professors did not enjoy academic freedom as individuals. Berlin University, about the same time, had relative academic freedom without institutional autonomy.

There are two related and especially important principles concerning academic freedom and autonomy: (1) university autonomy is the institutional safeguard of academic freedom; (2) university autonomy is the consequent extension and result of academic freedom.

In Germany, autonomy is the institutional condition that guarantees academic freedom. In 1919, the Weimar Constitution prescribed that art, science, and teaching are all free, and the country should protect and encourage them. Today, the German Constitution prescribes that everyone has the freedom to engage in art, science,

education and research. Furthermore, many German scholars suggest that there should also be a system to guarantee this freedom, which would in turn guarantee the autonomy of higher education institutions (C. Schmitt, et al, cited in Ma, 2004).

Scholars in the United States are inclined to see university autonomy as the consequence of academic freedom, part and parcel of institutional academic freedom.

In Japan, institutional autonomy is regarded as a right protected by the Constitution. Japanese scholars believe that universities are places to do research and transfer knowledge, and therefore academic freedom must be secured. University autonomy secures scholarly academic freedom institutionally. (Tang & Peng, 2000)

The Relationship between Government and the HEIs

Although institutional autonomy is regarded as the fundamental feature of modern universities, interference from certain governments has never ceased. That is to say, autonomy is relative, and governments have intervened in the operation of universities on a regular basis. Burton Clark pointed out that there are four major modes of institutional co-ordination: political, bureaucratic, academic and market-driven, and that most systems of higher education partake of all four of these modes, though in differing amounts in different times and places (cited in Berdahl, 1990). In countries that enjoy a good deal of academic freedom, interference from the government is often informal, and more in the form of funding, instead of administrative and compulsory order.

According to Tapper (1995), university autonomy is always exercised within a

political context which, to varying degrees, prescribes its boundaries. Institutional autonomy in the United States is based on the system of a corporation and governing boards. Higher education in the United States is relatively independent of the government and political pressures. Both private and public universities have the freedom to appoint professors, select students, and courses. Private universities have the right to allocate funds in the manner they deem best. Public universities also have considerable freedom to allocate funds received from the government. However, this is not to say that universities are or should be isolated from the development of the country and the society. On the contrary, both private and public universities have an obligation to serve the country. Universities believe that they do not belong to any organization. Instead, they represent the needs of the society, and their mission is to serve society, the people and the nation. For the benefit of the country the government, society and universities together build autonomous university systems. Thus, maintaining institutional autonomy is consistent with the benefit of the country (He, 2006).

Higher education institutions in Great Britain were initially related to the government by the University Grant Committee (UGC) from its establishment in 1919 through the early 1970s. However, in order to let universities rely more on market forces, the current Government reforms terminated the UGC and created a Universities' Funding Council which is obligated to operate more on contracts than grants. Through this kind of cooperation, the relationship between HEIs and the government in Great Britain has become more closely connected.

Although the relationship between the HEIs and the government is very complicated, in countries those have more academic freedom the government is more inclined to be involved in the HEIs by funding and general policy and does not interfere in the daily operation of HEIs.

DEVELOPING A STRATEGY FOR ENHANCING ACADEMIC FREEDOM

As has been mentioned above, academic freedom plays an essential role in the development of universities. Only when universities commit to this principle, are they able to achieve great accomplishments. Therefore, if a country or a region wishes to attain maximum economic development, it must do everything possible to develop its institutions of higher learning; and in order to develop higher education, the country or the region must first adopt and protect the principles of academic freedom.

Academic Freedom in China

Academic freedom was violently attacked during the dark time in China from 1949 to 1976 – the so called “Cultural Revolution”. There was no academic freedom at all during that time, and scholars were restrained from free expression. However, as economic reforms began to be carried out in 1976, academic freedom in China began to emerge. Today, professors in Chinese universities have much more freedom to conduct research and to teach than in previous times. Students also have more freedom to select teachers and courses. Nevertheless, we believe that academic freedom in China is relative, and much more needs to be achieved before Chinese universities can

be considered as on a par with the West. There are several reasons why we say this:

- ◆ Currently, the way that Chinese universities obtain funds is unitary. Normally, only the government appropriates funds according to its own needs. Donations from the outside are limited. Thus, the connection between HEIs and the government is closely related – perhaps too closely related.
- ◆ Although each university has its own president, the top leader of Chinese universities is typically a political party member – the secretary of the Communist Party of the university. The president is also assigned by the Party and the government. So in reality, the government is directly involved in the daily operations of HEIs. It can therefore be inferred that most HEIs in China do not enjoy full autonomy, which as we have stated is essential to institutional safeguarding of academic freedom.
- ◆ The status of staff in HEIs is linked closely to certain administrative positions. Excellent professors are also respected, but they usually do not have the right to be involved in important decisions of the university.
- ◆ Academic freedom has not received judicial recognition in China. China does not have a long tradition of academic freedom, especially since it was completely destroyed by the Cultural Revolution. However, in recent years the government has begun to realize, based on the experience of other countries, that academic freedom can benefit the development of HEIs. Therefore, Chinese universities are beginning to enjoy some academic freedom. Because the Chinese government has been deeply involved in the management of

universities, there is no law prescribing that academic freedom is fully protected. Although academic freedom is now given more and more attention by scholars, it has not received enough emphasis by the academy and the government.

- ◆ The Chinese government has not fully comprehended that giving reasonable academic freedom to HEIs can actually lead to benefit for the development of the region, the country and universities. This might not be the most propitious time to give the same freedoms to Chinese universities as their counterparts in other countries, since there are not any nongovernmental organizations in China that can carry out the many educational functions currently performed by the government, such as evaluation and monitoring.
- ◆ Today, in China, more and more private universities are emerging, but still there are only a few in comparison to the number of public universities. These private universities cannot be compared with large public universities, whether in terms of size, teaching staff, students or funding.

In light of the current situation regarding academic freedom in China, we make bold to offer a few suggestions related to the development and advancement of academic freedom.

1. Investigate the development of governing boards and allow them to make key decisions for the university. Such boards should consist of government members, professors, and other stakeholders, each of whom has equal rights

of voting on matters brought before the Board. The president of the university should be the CEO of this enterprise. The government and political parties must be kept separate from the daily administration of HEIs.

2. The government should encourage free and innovative research and ideas in HEIs, and in the case of state founded HEIs, recommend salary increases for professors and staff. The salary level of professors is very low compared to those of other careers. However, since professors can make significant contributions to society, salary increases should be viewed as an investment in China's economic development.
3. Universities should be able to allocate budgets without interference. Since universities are organizations that can make contributions for the benefit of society, financing of each university should be influenced by the appropriate Budget Committee of the governing Board.
4. Although the political system and social traditions of China are very different from those of Western countries, HEIs in China can learn a great deal from the experience of successful universities in other countries.
5. The government should encourage interaction between universities and commercial enterprises, and also encourage entrepreneurship and spin-off enterprises. We believe that commercial enterprises are the essential economic elements in society. Therefore, if universities can assist in the development of enterprises or carry out successful business activities in other ways, great national benefits will result. Currently, in China, there are still many

regulations that restrain such interaction and activities. We urge the government to adopt regulations so as to favor the development of regional economies and HEIs.

6. Heretofore, there has not been any significant nongovernmental organization that can share some of the educational responsibilities of the government. We believe the government ought to encourage the formation and development of this kind of organization to assist in the further development of universities.
7. According to the experience of HEIs in United States, the government not only invests in public universities, but in private universities as well. Private universities will become a strong force in the future, and therefore the government should support their development, which in turn will stimulate reasonable competition among all universities. The government should consider investing in reputable and responsible private universities to help them become stronger competitors of public universities.

Limitations of Academic Freedom

Academic freedom is not an absolute freedom. All freedoms have some limitations. When people have the freedom to do something, they must also share corresponding responsibilities. The corresponding responsibilities of academic freedom include creating new ideas, carrying on responsible research, serving society truthfully and assisting economic development. Therefore, scholars who desire more academic freedom must be prepared to contribute more to the society, and to the

economic development of the region or the country. Most important, whether in teaching or research, all faculty members bear responsibility for adhering to the canons of truth and in sharing the results of their research for the benefit of society and their fellow citizens.

CONCLUSION

Many studies have demonstrated that higher education and regional economic development are closely related. Properly designed and organized systems of higher education will greatly benefit the development of regional economies. Therefore, we suggest that in pursuit of regional economic development, governments must pay more attention to developing higher education. This should be regarded as a strategic objective of a region's plan of development.

In order to improve higher education, it is most important to realize those qualities needed to create a great university. From examining the top universities in the world, we believe that the principle of academic freedom is most important. Today top universities are located mainly in the United States and Great Britain, but especially in the United States. The higher education systems in those countries are known for their wide acceptance of academic freedom. Not only have the universities adopted this concept, but the governments of those countries recognize this principle as well. Other top universities in Asia, such as Tokyo University and Indian Institute of Technology, have embraced academic freedom. Accordingly, if a certain region or country wishes to strength its system of higher education, it should begin by adopting the principle of

academic freedom. We strongly urge that the adopting of academic freedom will eventually benefit both the higher education system and regional economic development.

In this paper, we have focused on the current situation of higher education in China, and we believe that Chinese higher education institutions do not enjoy true academic freedom as understood in other countries. Since the leaders of Chinese HEIs are normally assigned by the government, the daily management of HEIs is directly influenced by the government by appointing Party members to become the top leaders of HEIs. In addition, the status of staff in HEIs is mainly based on the administrative positions instead of on academic contribution.

To modify this situation, to benefit the progress of Chinese higher education, and finally to promote the regional economic development, we further propose several strategies for advancing academic freedom in China as outlined above.

Based on the desire to promote higher education systems in China and other developing countries, and overall development worldwide, our suggestions are intended to stimulate further discussion of the principles of academic freedom and the positive relationship that ought to exist between institutions of higher education and regional economic development in the 21st century. It is our hope that this paper will make a small contribution toward enhancement of academic freedom by once again emphasizing its importance.

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