

# An Analysis of the Impact of Higher Education Industrialization on University Management

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**Abstract:** The industrialization of higher education represents a trend in the future development of universities, introducing new possibilities and unforeseen challenges for university management. In light of this, the article examines the effects of higher education industrialization on university management and explores how universities can adapt to these changes, fostering the healthy advancement of higher education, enhancing the role of education, and producing high-quality talent for the progress of society and the times.

**Keywords:** Higher education; Industrialization; University management

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## 1. The proposal of the industrialization of higher education

The term “educational industrialization “ refers to the measures taken by higher education institutions to address funding shortages, focusing on operational and fee-related issues to enhance economic efficiency and diversify funding sources <sup>[1]</sup>. The concept of higher education industrialization did not emerge all at once but was introduced in stages. Firstly, in the late 1970s, the education sector overcame dogmatic views and recognized the role of education in economic development, concentrating on how education could serve this purpose. Secondly, during the 1980s, the government encouraged the exploration of various channels to increase educational funding, leading universities to enroll self-paying students and receive support for private education. During this period, a professor from Hebei University first introduced the concept of “educational industrialization.” Thirdly, in the 1990s, during a national education conference, scholars proposed establishing an educational system compatible with the socialist market economy, initiating discussions on the industrialization of higher education. Finally, in the twenty-first century, government documents stated, “Encourage social forces to provide logistical services for schools and develop the education industry.” Consequently, higher education industrialization became a focal point of interest <sup>[2]</sup>.

## **2. The impact and role of industrialization of higher education in promoting university management**

### **2.1. Expansion of University Functions**

At their inception, universities primarily aimed at teaching and nurturing students. However, with the advancement of political culture, scientific technology, and the development of market economies, the functions of universities have expanded beyond education and training. They now also engage in social activities, such as training teachers, corporate executives, and government personnel, as well as conducting technical research in collaboration with enterprises to transform knowledge and technology into productive capabilities and economic benefits. By generating economic returns, universities can secure adequate funding for the construction of infrastructure, enhance their hardware and software facilities, and invest more resources into talent development, thereby promoting the modernization of higher education. For example, the popular study-abroad city of Sydney welcomes over 25,000 international students each year, bringing significant economic benefits to New South Wales. The higher education sector in Sydney enrolls international students, generating hundreds of millions in tuition fees annually, which provides universities with more resources for talent development and academic research <sup>[3]</sup>.

### **2.2. Greater autonomy for universities**

The economic system of the twentieth century markedly differs from today's market economy, where economic activities were largely dictated by state planning, and all funding for university operations and campus development came from government allocations. This led to the government wielding significant influence over the development of higher education institutions. Today, with the establishment of the socialist market economy with Chinese characteristics, resources are allocated by the market's invisible hand, yet the government continues to provide financial aid and educational funds. Nonetheless, as universities begin to generate revenue through diverse channels, their autonomy increases while the government's control diminishes, transitioning from strict oversight to broader guidance. Enhanced autonomy presents both advantages and challenges; while successful institutions may attract more funding, those with declining educational quality may face serious challenges <sup>[4]</sup>.

### **2.3. Increased competition among universities**

With the industrialization of higher education, competition among universities intensifies. This competition emphasizes the assessment of various entities' performance to determine funding allocation, fostering a "survival of the fittest" scenario that enhances institutional efficiency and effectiveness. The competition engendered by industrialization spans not only across different universities but also within various departments and personnel within the same institution. For instance, around 1995, the "211 Project" was initiated, aimed at encouraging key universities to act as leaders, with lesser institutions learning from them to "concentrate efforts and rapidly enhance the quality of education and scientific research, making them the backbone of the higher education system." The objective was to establish a hundred "211" institutions in the twenty-first century, providing robust support in terms of funding and other resources for those selected. This was undoubtedly a rare development opportunity for Chinese universities, which historically faced funding shortages. Consequently, competition among institutions to be included in the elite group grew fierce, employing various strategies from attracting distinguished faculty to competing for high-quality students. Internally, competition manifests in personnel management and resource allocation, with the Ministry of Education advocating for a "position setting based on need, open recruitment, equal competition, merit-based selection, strict assessment, and contract management" <sup>[5]</sup>. Many universities have begun implementing faculty

appointment systems, marking a significant reform in university management, thereby replacing past practices of lifetime employment and collective remuneration with competitive appointment processes.

### **3. The current problems of industrialization of higher education**

#### **3.1. Challenges in government investment in education**

Education is a major national priority and a key agenda for the Party. The allocation of funds by the national finance department to higher education institutions is crucial for their development. On the one hand, the country has put forward the strategy of “revitalizing the country through science and education”, attaching importance to science and technology and education, which helps to enhance the country’s core competitiveness and achieve sustainable development; on the other hand, in recent years, financial investment in education has remained below 4% of national annual income, not significantly higher than that of many developing countries worldwide. One of the underlying reasons for this is the impact of the industrialization of education. This industrialization has become an excuse for the government to reduce its investment in education, leading to a situation where a large portion of universities’ financial income comes from student tuition fees .<sup>[6]</sup>

#### **3.2. Challenges to the achievements of educational reform and development**

In the process of educational reform and development, some reformers have pushed higher education towards industrialization. Education is the fundamental plan of the country and an important strategy of the government <sup>[7]</sup>. In the education market, investors face lower risks and can invest in both public and private institutions. With the support of national policies, operating costs can be reduced to a certain extent. The industrialization of higher education promotes the increase in the number of universities and promotes the popularization and widespread access to higher education, but it also brings potential problems such as the devaluation of degrees, a decline in educational quality, and poor employment prospects. In the process of promoting the development of higher education, reformers need to approach the trend of educational industrialization dialectically, ensure the fairness of higher education, and jointly promote social progress and development <sup>[8]</sup>.

### **4. A study on the relevant path strategies of university management in the context of higher education industrialization**

#### **4.1. Accurately understanding the attributes of education and upholding the principle of prioritizing people amidst the wave of industrialization**

Education is a “quasi-public good”, and a sound education system can cultivate citizens with high literacy. Citizens with high comprehensive quality participate in various sectors of society, which helps to improve economic productivity and progress social civilization. The country has proposed a “millennium plan, education as the foundation” and formulated a “science and education to develop the country, talent to strengthen the country” strategy, which may also consider this factor. The development of education is related to the progress of society, the development of technology, and the enhancement of comprehensive national strength <sup>[9]</sup>. Education faces the development of morality, intelligence, physical fitness, aesthetics, and labor. Suppose education is treated as a product, and the relationship between teachers and students is maintained through money. In that case, society may become a tool society, not a civilized, rational, and democratic society. Education is the transmission and creation of knowledge, which helps to inherit and develop civilization. The inheritance of Chinese civilization for five thousand years inevitably relies on education. Scholars pursue things such as personality concepts, philosophical ideas, the pursuit of truth, valuing righteousness over profit, and noble personality, which

cannot be measured by economic benefits. Education has social functions, universities are sacred places, and universities are the academic and knowledge halls in the minds of intellectuals. Therefore, higher education needs a pure land to preserve the scientific and academic spirit. With the industrialization of higher education, university classrooms still need to maintain a student-centered approach. From a dialectical perspective, higher education can adapt to industrial operations before and after classes and achieve effective resource allocation <sup>[10]</sup>.

## **4.2. Introducing industrialization into the internal management of universities to adapt to the wave of higher education industrialization**

Some universities have bloated internal institutions, low work efficiency, and insufficient funds, but there is also a situation of resource waste. After being awarded professional titles, some teachers lose motivation and lack the persistent spirit of striving for excellence and delving into the end of scientific research and teaching. Professional courses in universities are detached from social needs, the updating speed of textbooks is slow, and teachers' teaching methods are single and sometimes boring. Students do not fully participate in the classroom. There are problems in university management, and how to integrate resources and improve educational efficiency is an urgent problem to be solved. To ensure the effective operation of internal management in universities, industrialization models can be implemented <sup>[11]</sup>. The development of universities mainly relies on two parts, one is talent, and the other is funding. In the previous management model of universities, talent and funding were wasted, and resources were not fully utilized. Through industrial management, talents and funds can be effectively utilized. In terms of talent, universities need to attract talents to work in schools, provide a good environment for their lives and work, establish incentive and competition mechanisms, fully tap into the subjective initiative of talents, distribute according to work, reward university teachers with many and good scientific research achievements, and punish teachers with no scientific research achievements or teaching negligence. University teachers play the core role in the smooth development of university work as the soul and blood of universities. Implementing rewards and punishments can help stimulate the vitality of universities and ensure sufficient development momentum.

In terms of funding, universities need to learn from the advantages of industrialization models, raise funds positively, and enrich the sources of university funds. For example, in addition to financial contributions, tuition revenue, and university-industry income, universities can also use university resources to provide services, cooperate with high-quality enterprises, apply for scientific research projects, donate to outstanding alumni, and receive donations from all sectors of society as sources of university funds. They can leverage their advantages, give donors a reputation, write in the university's history, and take other measures to attract attention from all sectors of society. The investment of funds needs to have a clear return period. For project investment, experts and professors need to participate to avoid wasting funds. In summary, the industrialization of higher education institutions lacks practical soil. Industrialization of internal management in higher education institutions is a choice that helps to improve educational efficiency and promote the development of universities while ensuring that education is people-oriented <sup>[12]</sup>.

## **4.3. Government macro management and industrial operations of universities**

The industrialization of higher education requires a standardized higher education market system. Higher education products are different from general commercial products. They reflect humanistic characteristics, have emotions and are related to the values of young people and the future of the country and nation. Therefore, the higher education market system cannot be a commodity market. Universities must introduce the market system into higher education and build a suitable market system for themselves <sup>[13]</sup>.

Firstly, the government should appropriately enter the background, withdraw from areas that can



be withdrawn, give universities autonomy, and at the same time grasp the overall direction of university development. It is not allowed for universities to be capitalized or commercialized. In the process of university industrialization, the government and market mechanisms coexist.

Secondly, create an equal and fair competitive environment. Without fairness, the industrialization of university operations cannot be achieved.

Thirdly, improve the market system and regulate the relationship between universities and students, graduates and employers, society and research achievements in universities <sup>[14]</sup>.

Fourthly, establish a sound legal system to safeguard the industrial operation of universities and provide legal protection. Under the macro management of the government, the industrialization of universities should combine “going out” with “bringing in,” draw on the experience of developed higher education countries such as the United States, the United Kingdom, and Australia, and avoid taking detours. For example, universities in Macao will industrialize technological achievements, benefit humanity, realize economic value, provide feedback on teaching and research, and achieve interaction between teaching, research, and industry.

Based on its characteristics, Macao’s development of the higher education industry promotes its transformation from consumer-oriented to industrial-oriented, making higher education economically beneficial while paying attention to public demand and assuming social responsibility. Government departments should seize the macro level and do a good job in regulation, creating an environment suitable for developing industrial higher education and ensuring the sustainable development of the higher education industry <sup>[15]</sup>.

## 5. Conclusion

In summary, establishing a market economy system has provided a foundation for the industrialization of higher education. The impact of this industrialization on university management has both advantages and disadvantages. Universities should, therefore, maintain a commitment to education at their core while drawing on the benefits of industrialization to enhance the management of faculty, to secure a competitive position within a market-oriented environment.

## Disclosure statement

The author declares no conflict of interest.

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