

Innovation: from University to Market

--The Legend of *NUCTECH*

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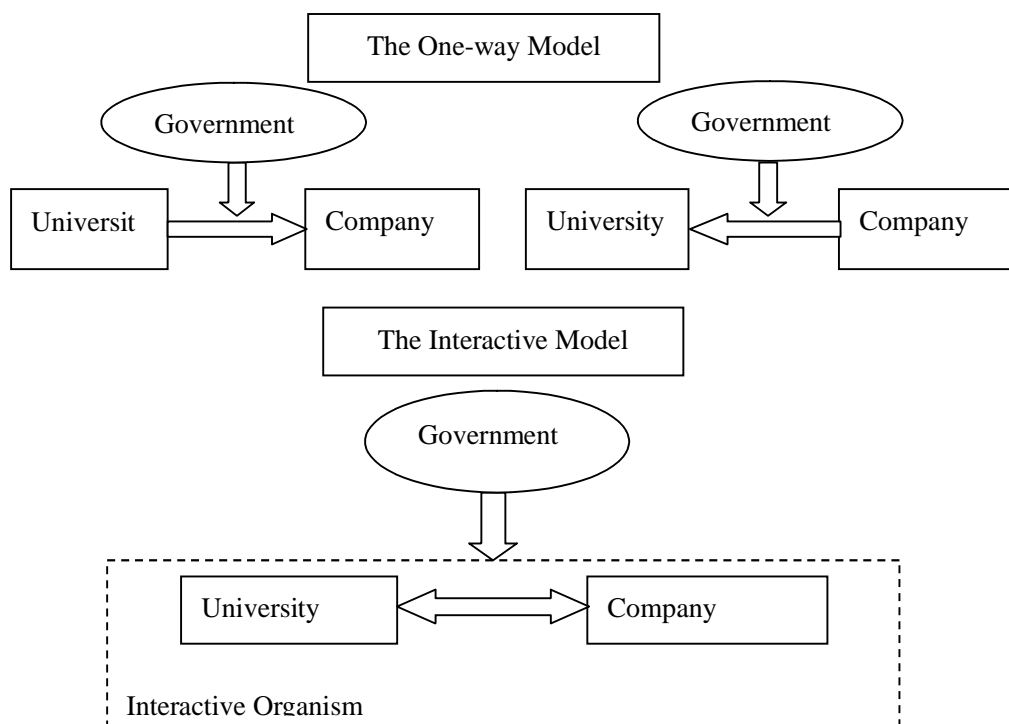
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In recent years, growing attention is paid to innovations in universities. Researches and innovations in universities are important resources of technology development. How to turn them effectively into productivity in the society and competitiveness in the companies is a meaningful issue. Before, while tons of patents and new progress are recorded in the universities, companies lack technology to gain competitiveness for further development. The technology transformation model in China now is evolving from the One-way Model into the Interactive Model. *NUCTECH*, a prestigious high-tech company originating from Tsinghua University, is a typical example during the model evolution. This paper examines the course of the development of *NUCTECH* to analyze the technology transformation model evolution in China.

Originating from the “85 Scientific and Technological Program” in Tsinghua University, *NUCTECH* has developed into a leading company in the world in only 10 years. Now *NUCTECH* is one of the world's largest suppliers specializing in the research and development of security inspection technology. Possessing more than 300 patents in China and 100 patents abroad, *NUCTECH* first developed the mobile container safety inspection system and then the second and third generation. A 10-year Chinese company gains more than 50% global market, which is a typical technology legend from university innovation.

NUCTECH's development history was along with the transition of the technology transformation model in China. Under the former model, the force of the innovation flow between university and company is One-way. That is, some on the campus who foresee the business potential of the research progress seek opportunities to transform

them into competitive products. *NUCTECH* is an example of this kind. Or, some companies in need of new potential technologies would seek and cooperate actively. There are huge number of entities in both side, but they suffer from finding the matching cooperators. The government's role, in this model, is to accelerate the One-way cooperation. Example forms are special company establishment (like *NUCTECH*), foundation for encouraging technology transformation, and incentive policies for the companies. That's a Ineffective Model because the two critical parts (university and company) could only connect when both meet, in an non-mechanism way. This One-way Model is like a one-off deal and sellers and buyers have to take time and effort to find each other. However, after the first deal, the company still has to take effort to co-work with the research institute because specialized product problems and improvements need help from the experts in the university.



Instead, a more effective should be based on an interactive platform. The beginning of this Model is new discoveries and developments being offered for exchange on the platform. On the one hand, universities needn't take effort in seeking, instead, they only focus on research and then further improvement. On the other hand, companies

could focus on business opportunities and technology transformation. Then a series of services and policies is needed to shape a convenient and encouraging environment. After the first generation product put into market, a further long term cooperation relationship is built to support the sustainable development of the company. Therefore, specialized problems arise in the course could be solved and improvements could be made. Furthermore, new generation products can be developed so to enhance market strength.

The establishment of *NUCTECH* was of the One-way Model. To transform Potential technology into products, a special team and then a company was set up. Government played an important role in the Industrialization of the product and then helped by influence buyers in the local market. Then the relationship between *NUCTECH* and Tsinghua University evolved into the Interactive Model. Instead of owning an equity share, Tsinghua gains from technology fee paid by *NUCTECH*. This is a proved form in developed countries. Under the long term cooperation relationship, *NUCTECH* has being developed new generations of products, customized solutions tailored to clients needs. This interactive cooperation is a sustainable source of the competitiveness of *NUCTECH*. Also, it is the interactive cooperation that helps the company gain its global market share, which is generally beyond the influence of the local government.

To sum up, innovations in universities are important resources of Research and Development for companies. The technology transformation model in China is evolving from the traditional One-way Model to a more effective model, the Interactive Model. *NUCTECH* was set up under the former model and then developed into a worldwide leading company, under an Interactive Model cooperaton. In China, the new model is predicted to be the mainstream and help the development of the local companies.