



## **Innovation in China and Implications for Ireland**

### **Introduction**

The purpose of this paper is to review recent technological advancements in the Chinese economy and to identify some opportunities for Ireland to engage in developing and bringing these technologies to the western markets.

### **Innovation in China**

China has moved from being an imitator to an innovator in many areas of technology, particularly in wind and solar power industries, consumer electronics, electric vehicles, pharmaceuticals and high-speed rail.<sup>1</sup>

There has been a traditional bias towards innovation through commercialisation in China, whereby products are launched and subsequently perfected through market response. This contrasts with the western approach to product launch.

The Chinese Government promotes indigenous innovation through the latest 5-year plan, seeing it as critical to the domestic economy's long-term health and to global competitiveness of Chinese companies.

Many product innovations in China have not reached the western market yet. Particularly in consumer electronics, some developments have progressed beyond western market expectations, particularly in messaging and streaming services.

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<sup>1</sup> McKinsey Quarterly Bulletin, February 2012, A CEO's Guide to Innovation in China



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The China domestic market is now so large that many Chinese companies have little incentive to adapt successful products for sale abroad into the global market. Others encounter hurdles in reaching the global market, with, for example, executives uncomfortable doing business outside their geography and language, localisation and licencing fees not encountered within China.

In pharmaceuticals China's sophistication has grown dramatically. In renewables they are using new manufacturing techniques to improve efficiency of solar panels and are engaged in wind power equipment development.

The Chinese Government is encouraging technology transfer from multi-nationals in return for market access and co-ordinated R & D investment. There is an opportunity for MNCs to leverage their abilities in collaboration with Chinese manufacturers and product developers. Multi-nationals bring superior product quality into play and can lead product development for consumer markets in collaboration with Chinese producers.

The Chinese Government wishes to have more than 5 million plug-in hybrid and battery electric vehicles on the road by 2020 and is heavily supporting this goal with extensive subsidies and tax incentives.

### **Chinese Innovation in the Global Market**

Shifting from production-based imitation to innovation requires R & D, knowledge of customer preferences and delivery of reliable product. Many multi-nationals have these capabilities.

In the western economy, multi-national companies (MNCs) are stronger in areas of market analysis, risk taking and collaboration in developing products prior to launch on the global market.

The marriage between the two is achieved through location either in China or in a Chinese hub. One method is to transfer top executives from the west to China to run global R & D organisations, to be closer to Chinese customers and the network of

institutions and universities from which multi-nationals source talent. Another is to train Chinese innovators in western companies engaged in R & D.

Retention of these trained PhDs is an issue for multi-national companies. However, high-level Chinese graduates appreciate mentorship and training provided by foreign companies. MNCs that commit to developing meaningful career paths for Chinese employees can succeed in retaining them.

One key is to develop products that will serve the global market rather than the domestic China Asian market.

Team building is a way to develop risk taking, which is an anathema in China. Particularly in pharmaceuticals, innovation cannot be lead by experimentation. It must be research based. MNCs are experienced in this area of product development.

Collaboration and hot housing in the development of ideas is a western as opposed to an eastern phenomenon. Chinese innovators can benefit from an interactive open process of innovation, when located in an open environment.

China will take time to evolve and achieve a true innovation revolution, moving from incremental innovation to one where breakthrough innovation is common.

### **Chinese Innovation and Ireland's Role**

Ireland is a leading world economy in terms of MNC presence, collaboration in innovation and openness to global trade.<sup>2</sup>

The US/Ireland experience of FDI indicates that direct investment in plant on the ground and operating enterprises in the reciprocal countries is a far quicker way of generating trade exchange than by trying to grow economic interaction remotely through import/export alone. Spin-off SME enterprises gain systems, marketing and innovation expertise through collaboration with MNCs.

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<sup>2</sup> What Does FDI Do For Ireland, Simon Clear, February 2012, [www.clearconsult.ie](http://www.clearconsult.ie).

The Irish Government has introduced significant support and tax arrangements to foster R&D.

Ireland needs to engage in accelerated FDI and innovation collaboration with China on a very substantial basis.

There is a possibility of a situation whereby Chinese scientists (10,000 science PhDs graduate in China each year) can train in a host country with wide exposure to multi-national companies. Ireland is the best example of that arrangement.

Outside high-tech products and agri-business development, Ireland and China have common interest in renewable energy technology. Ireland has some of the best global resources and China is developing some of the best renewable technology. Marry the two in Ireland and there is an economic and environmental “win-win” situation, with Ireland as a global environmental first mover.

The visit of the next Chinese premier, Mr. Xi Jinping, to Ireland in February 2012 is a huge opportunity to showcase Ireland and to make strong connections. It is interesting that there is a wish in the visit to showcase Irish attractions on the west coast to Chinese tourists and to learn more of Irish agri-business and FDI experience in transforming Ireland from an agrarian society 50 years ago, to a modern technology society today.

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15th February 2012