

FP7 themes	health	agro	ict	nano	energy	environment	transport	ssh	space	security
ERA goals	mobility	infrastructures	rtd institutions	knowledge sharing	joint programming	cooperation				

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UK workshop participants in the NANO-SSH group																				
Manifestation	Gradual development	<table border="1"> <thead> <tr> <th colspan="2">Potential impacts in Europe</th> </tr> </thead> <tbody> <tr> <td>infrastructures</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>people's lives</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>legislation & regulation</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>economy & business</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>defence & security</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>government & politics</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>environment & ecosystems</td> <td>★ ★ ★ ★ ★</td> </tr> <tr> <td>science & technology</td> <td>★ ★ ★ ★ ★</td> </tr> </tbody> </table>	Potential impacts in Europe		infrastructures	★ ★ ★ ★ ★	people's lives	★ ★ ★ ★ ★	legislation & regulation	★ ★ ★ ★ ★	economy & business	★ ★ ★ ★ ★	defence & security	★ ★ ★ ★ ★	government & politics	★ ★ ★ ★ ★	environment & ecosystems	★ ★ ★ ★ ★	science & technology	★ ★ ★ ★ ★
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Importance for EU	★★★★★																			
Strategic attention	by 2030 ★★★★★ by 2050 ★★★★★★																			
Type of impact	Uncertain																			
Inspired by	Brainstorming session and group discussions in the iKNOW Workshop in Manchester (February 2010)																			
Key words	competition, globalisation, investment, natural resources, power, technology, Africa																			
<p>Negligible ★ Minor ★★ Moderate ★★★ Major ★★★★ Critical ★★★★★</p>																				

Wild card

Aggressive Chinese outward foreign direct investment (OFDI) outstrips and halts European and US investments and technology leadership in Africa and developing countries. While China's OFDI is characterised by being politically unconditional, therefore highly welcomed, the predominance of state-owned enterprises (SOEs) investing in Africa and other developing countries could eventually become a "great wall" or major extension of China's defence, security, science and technology policies. Such a pervasive OFDI strategy could sooner or later create natural market barriers for European and north-American firms to operate in some sectors and industries dominated by China (mainly in the tertiary and the manufacturing sectors, but also in energy and natural resources).

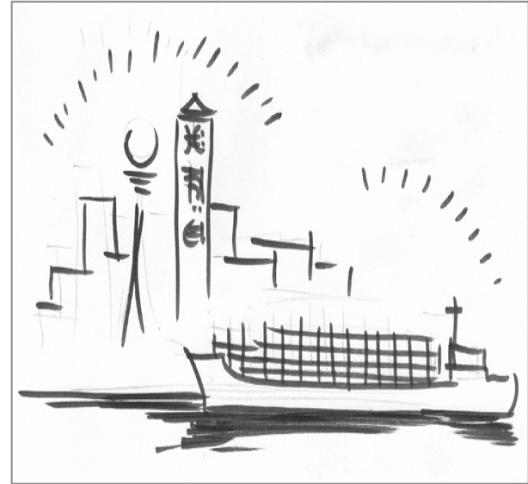
Surprises ('wild' scenario features)

With a steady GDP growth, nearly 2 trillion USD in foreign exchange reserves, and a healthy current account, it is not surprising to see the rapid growth of Chinese investments abroad. So the unexpected element of this wild card would be size and pervasiveness of China's OFDI growth to the point that it becomes a serious challenge for global players. China's thirst for natural resources and amazing capability to provide affordable and reliable solutions in the service industry may result in the capture and control of raw materials such as oil so that China could control prices and commodity markets. This leads to a major shift of global power and, possibly, to truly multi-polar world with environment-friendly and fair-trade policies driving competition. New political allegiances may arise in line with the new distribution of global investment and humanitarian aid. China could increase its political power becoming the dominant super power – or an idealistic power with production outsourced to Africa, Latin America and the Caribbean. In the long run China-US conflicts could lead to new "cold war" situations but China's new investment and services "great wall" successfully contains any coordinated effort to stop Chinese influence.



Possible interpretations

This wild card has multiple interpretations. People eager for a revolution to bring about change in global politics would see Chinese's influence expansion as a positive step toward a truly multi-polar world. However, the conservative political and economic elite would interpret this as a major threat that requires urgent action in order to maintain the *status quo*. Politicians, industrialists and the civil society in Africa and developing countries would see this as a major opportunity to develop new infrastructures, promote industrialisation and achieve major technological and socio-economic development goals. Some researchers and social activists would see this wild card as a sign of cultural shift towards collectivism.



Key actors

Key actors related to this wild card, include:

- **Scanners** or "early warners" such as international and national financial institutions monitoring OFDI (e.g. OECD, Eurostat, the World Bank, and the International Monetary Fund, etc).
- **Shapers** (i.e. enablers/inhibitors): Chinese State Owned Enterprises (SOEs) in China, transnational companies, financial institutions and global aid and humanitarian agencies.
- **Stakeholders** positively or negatively impacted include governments as well as public/private actors in China, African countries, developing countries, USA, Russia, Iran and European countries with interests in Africa, among others.

Potential impacts

The impacts of China's investment and services "great wall" could include: Manufacturing activities being reduced in China and outsourced or increasingly provided by Africa and developing countries. China could eventually control global CO2 policy, export media and culture as well as global poverty reduction solutions. Consequently, the EU and USA may get closer.

Potential actions

This wild card may be associated with Chinese science and technology overtaking Europe and the US. The current European policy based on leading the global knowledge economy would be undermined. Would the maturation of China follow conventional routes and how this will affect Chinese communism? Will China be more capitalist? Can Europe have an influence on this? Will China dictate ideas and cultures to the world in a way that happened with the US with beverages, fast food and via Hollywood etc? Could Chinese become the dominant language of the web or global lingua franca? For that reason, a number of *early actions* (pre-wild card) and *early reactions* (if the wild card occurs) should be considered:

- **Policy actions**

Early actions: Strengthening national/EU business enterprises; Paving the way for European businesses and corporations worldwide; Strengthening EU/national relationships with African countries; Investment in science and technology research; Focus on education policy is vital.

Early reactions: Putting in place policy measures that protect EU businesses (imports and exports) Continuing investment in science and technology research.

Recommended research

Thematic area(s)

Social science and humanities, agriculture, energy, ICT, transport and security.

Research topic

European response to major changes in global foreign direct investment strategies.

Contemporary society relies on a globalised and market economy system driven by international trade and foreign direct investment strategies of state-owned enterprises (SOEs) and transnational companies (TNCs). As new states enter the system, many of which have the potential of becoming major players it is vital that an understanding of the current system is gained in order to predict how it will respond to large scale changes and also to prepare current stakeholders for the possibility of vast changes to the market environment.

Objective

Research could focus on examining the nature of outward foreign direct investment strategies (OFDI). Research could focus on developing strategic country-specific OFDI options for EU Member States. Research could identify areas of vulnerability (e.g. natural resources). Research could furthermore use foresight methodologies to examine how European society could be prepared for a significant change in trade, investment and technological leadership patterns in developing countries.

Expected impact

Research should aim to a) inform the development of strategic OFDI for EU Member States; b) devise strategies for major changes in OFDI of key economic actors; c) monitor and analyse OFDI strategies of major SOEs and TNCs; d) inform relevant policy, legislation and regulation across EU; e) inform business enterprise and innovation in this field.

Importance for Europe

In order for the EU's continuing successful participation in the market system, research is key in forming a response to imminent changes. It is vital that any response, which would endeavour to monitor and respond to this shift, is informed by research which aims to understand the changes as well as predict foreseeable implications these may have. It is furthermore important that the EU recognises any current weaknesses in its systems in order to strengthen their participation in as many areas of trade and business as possible. It is also of great importance that the EU forms a coherent response that could guide member states in forming their own responses, in accordance to changes to their circumstances.



iKNOW is a Blue Sky foresight and horizon scanning research and technology development (RTD) initiative aimed to advance knowledge and tools for the early identification and analysis of events and developments potentially shaping and shaking the future of science, technology and innovation (STI). **iKNOW** is run by an international consortium lead by the University of Manchester and sponsored by the European Commission Directorate General for Research. By supporting Blue Sky RTD the EC aims to create more proactive European research policies that will be capable of anticipating challenges and opportunities associated to emerging issues, wild cards and weak signals (WI-WE). **Wild Cards** are situations/events with perceived low probability of occurrence but potentially high impact if they were to occur. **Weak Signals** are unclear observables warning us about the probability of future events (including Wild Cards). They implore us to consider alternative interpretations of an issue's evolution to gauge its potential impact.