


»Impacting New Markets«

Madrid, 28th – 30th May 2008

Emerging Economies Opportunities and Threats for a European RTO Venturing Abroad

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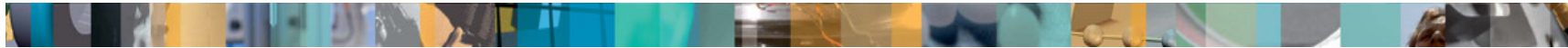


»It is clear that Europeans must open up to the rest of the world and cooperate in science and technology not only with the traditional large advanced economies, but also with the new emerging countries and the developing countries.«

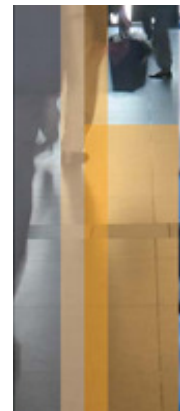
Isi Saragossi in:
Europe in the global research landscape, 2007



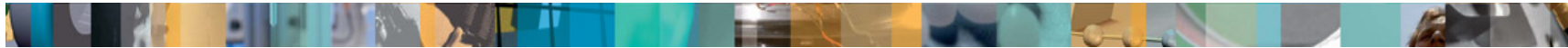
Outline



- Part I Some aspects worth considering when entering into a dynamic and little-known environment that is quite different culturally
- Part II Fraunhofer's motivations for engaging in China, and past experiences
- Concluding remarks



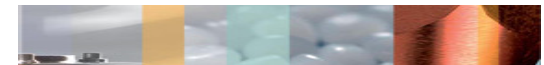
What is the long-term perspective for emerging economies?



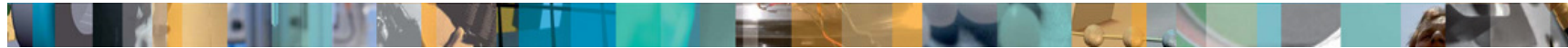
According to PricewaterhouseCoopers

- GDP of the E7 (Brazil, China, India, Indonesia, Mexico, Russia, Turkey) will be 25% higher than that of the actual G7 (Canada, France, Germany, Great Britain, Italy, Japan, USA) by 2050.
- Of the top three economies in 2005, the US will remain number 1 (in ppp terms, China will surpass it); Japan will be number 4, behind India; and Germany will settle in 8th place, behind Mexico.

Long-term predictions tend to see China as number one or number two, with a few betting on India for the top position already by mid-century.



Who are the main R&D drivers internationally?



Global R&D is enterprise-driven, with the 1000 largest investors covering about 60% of total international R&D expenditure and roughly 85% of the business sector (cf. Booz Allen Hamilton, Global Innovation 1000).

Multi-national enterprises (MNEs) have increasingly become integrators of globally distributed R&D.

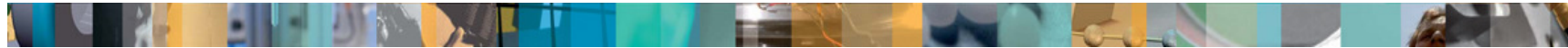
They seem motivated to internationalize R&D by mainly three factors: market perspectives, perspectives for technology sourcing and the availability of researchers.

While market perspective would favour the E7, perspectives for technology sourcing are currently still much better in G7 countries.

As for the availability of researchers, highly qualified people seem scarce the world over. But while E7 may have a relevant cost-advantage over G7, E7 clearly misses out in terms of excellent scientists and engineers.



What other aspects may weigh in in favour of emerging economies?



In 2004, China already had more foreign R&D bases than the EU-15, 67 and 60 respectively.

One reason for the strong involvement in addition to market perspectives and, to a degree, the availability of affordable researchers may be that in spite of good and inexpensive communication possibilities, businesses prefer to have their R&D partners close by.

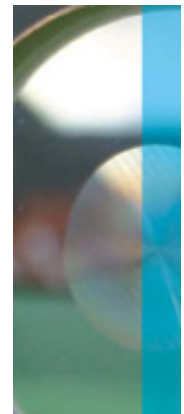
Economic activity in emerging economies has increasingly decoupled from that of developed economies due to growing domestic demand and changing trade patterns. A slow-down in rich economies would therefore effect emerging economies much less than in the past.



How will international developments affect European RTOs?



- Should they start setting up shop in Brazil, China or India?
- Is now too early?
- Too risky?
- Would it serve their main stakeholders, namely
 - customers
 - funding authorities and
 - employees?



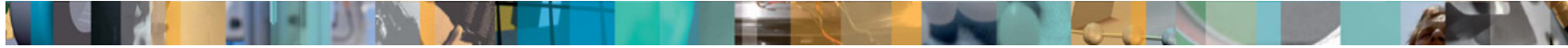
What are customers in a globalising world asking for?



- Competitive products, processes and designs at local, regional and international levels.
»Competitive« inevitably relates to price, but may involve many other elements such as beauty, comfort, running costs, safety, sustainability.
- To adequately serve the customer in a globalising world, local, regional and international expertise is needed.
In emerging economies, capabilities to meet customer needs beyond tailoring products to local markets are growing. In some cases, the R&D focus has started to expand towards major innovations.



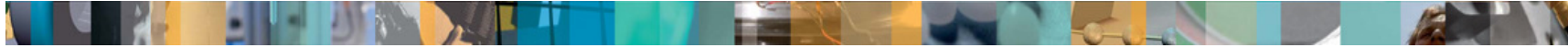
How to deal with diverging and possibly conflicting interests between actual and potential new customers?



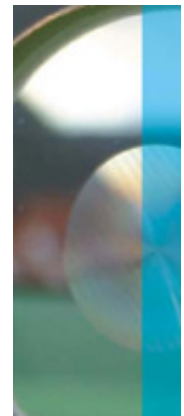
- The situation seems basically similar, no matter whether customers from developed countries or from emerging economies are involved. As always, a variety of aspects needs to be considered, such as trust, reputation, policy and, obviously, confidentiality.
- Experience shows that it is advisable to consult with those among today's customers who would be impacted by the RTO's R&D services for new offshore customers.



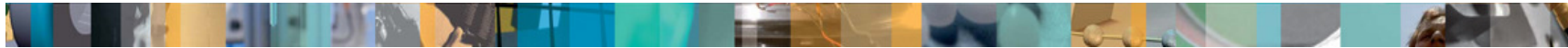
Where do offshore R&D activities of RTOs leave their national funding authorities?



Assessing the benefits and drawbacks of foreign investment in R&D services for the host and the home country tends to be complicated, and results can be controversial. Therefore it makes a lot of sense for RTOs to consult with their funding authorities to sort out the issues and align perceptions.



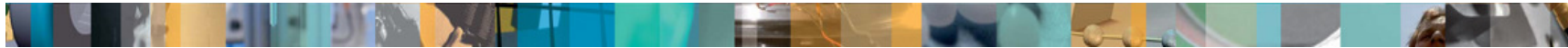
How would offshore R&D activities affect the RTO's employees?



- R&D activities of European RTOs in or related to emerging economies tend to provide the RTO's employees with
 - exciting (demanding) tasks;
 - help increase their qualifications;
 - contribute to their job security/employability.
- Potential consequences for the labour situation beyond the individual RTO are open to speculation and conjecture due to the complexity of economic interactions over time. In developed countries, concern centres on job loss and lower income. Political aspects play an important role. The real-world consequences may perhaps best be dealt with at a macroeconomic level.

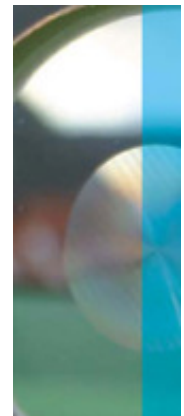


The particular case of China



»So far, S&T cooperation with China shows the tendency to lead mainly to knowledge transfer from Europe to China without yielding significant economic or other benefits to Europe in return. In addition, the MS/AS are faced with a number of challenges, most dominantly the protection of intellectual property but also a growing Chinese technonationalism and protectionism.«

Cf. Annex (e) Reflections of the CREST Working Groups on the Green Paper 'The European Research Area: New Perspectives'. 29 November 2007

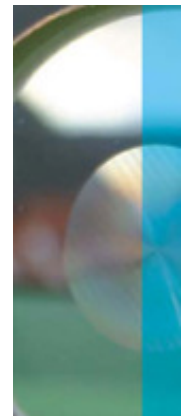


What motivated Fraunhofer to take up activities in China?



The two overriding objectives of Fraunhofer's international commitment are (1) to generate knowledge with scientifically outstanding partners and (2) to enrich preliminary research by taking into account requirements of non-European markets. A third strong motivation is to be able to serve its European customers outside of Europe.

With regard to China, all three objectives played and continue to play a role, with varying emphasis.



Why go to China?

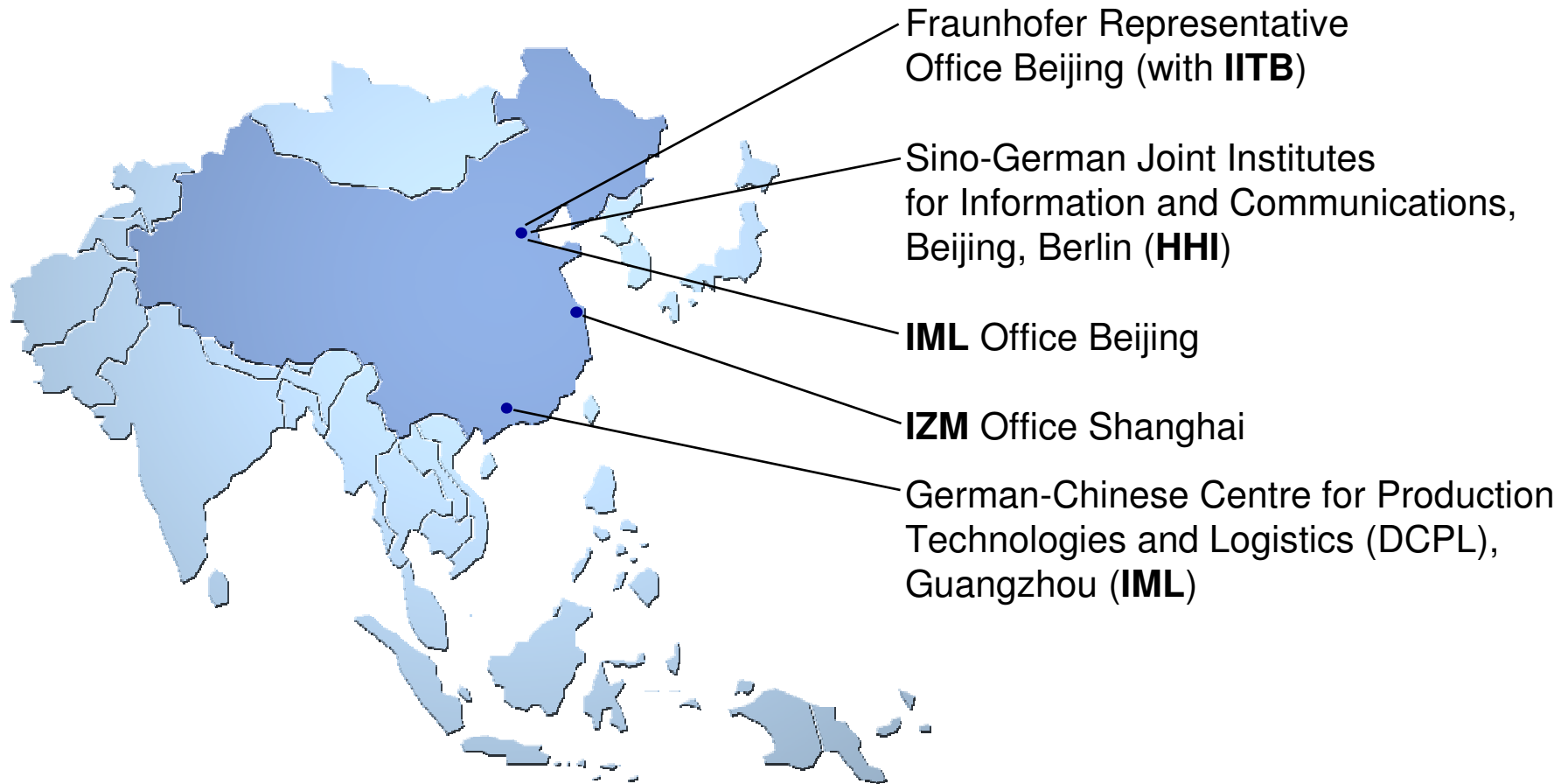


The institute directors' motivations reflect the general policy considerations:

- China offers a huge and expanding market for which R&D is becoming increasingly important
- To provide our customers with R&D services also in China
- To find excellent scientific partners
- To benefit from a dynamic environment - quick decisions, quick implementation



Fraunhofer Activities in China



Zentrale/P5/03-2008

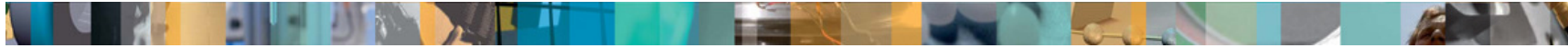


What is the yin to the market yang, the dark that balances the light?

- Protection of intellectual property
 - Were we, the Chinese, not told from earliest times onward to learn through copying the Master?
 - Was not every villager encouraged to copy a neighbour's innovations, and, if possible, improve on them?
 - And anyway, we, the Chinese, do not limit ourselves to copying, because if we did, we would never be able to surpass the Master.
- Excellent and reliable Chinese R&D partners are indispensable for a stable presence and continuous relationships but difficult to find.



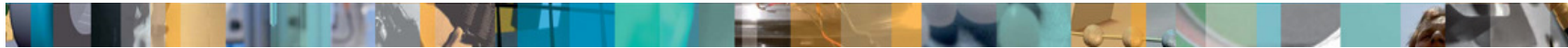
What other exceptional features do you encounter in addition to insufficient protection of intellectual property in China?



- Cultural differences burden communication independent of language hurdles.
- Chinese customers generally prefer ready solutions to tailored but time consuming developments.
- Whereas Japanese companies are sometimes guided by long-term vision, Chinese firms often aim for the quick profit.
- Politics enter, i.e. if Chinese companies provide technologies to countries embargoed by the West.



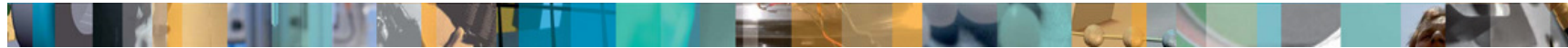
Concluding remarks



While the observations of the CREST Working Groups with regard to S&T cooperation with China ring true,

- it would seem a serious disadvantage not to understand and be able to serve one of the world's leading R&D markets.
- For our gains in China to be commensurate with our efforts, we need to better adapt to the environment and to become still more effective.





"The debate about whether Asia will once again dominate the global economy – as it did for two millennia before the industrial revolution in 18th-century Britain and the rise of the US – is over. The 21st century will be the age of Asia's return to economic pre-eminence."

Victor Mallet, Financial Times, April 5th/6th

