

THE ENVIRONMENT FOR INDUSTRIAL RESEARCH AND TECHNOLOGY TRANSFER IN EASTERN EUROPE

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Summary Closing Remarks

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“All’s well that ends well” (Shakespeare)

And this – in my opinion - remarkable conference is indeed ending well.

Let us briefly recall why EIRMA has come - for the first time in the Association’s history - to Kraków, Poland, and thus to a country in Eastern Europe. The invitation to this conference says this:

“The purpose of the meeting is to share insight into the industrial research and technology transfer capacity available in Poland and neighbouring countries, and learn how this capacity can be put to best effect.

- *Participants from EIRMA member companies will meet the people responsible for local institutes, programmes and initiatives and discuss the procedures for establishing effective research and technology-based activities in these countries.*
- *The intention is to achieve a dialogue: an open discussion of what is on offer and what companies would like to see”.*

As your Chairman I believe that I can speak in all your names, when I proclaim:

“Mission accomplished”.

The fact that high-level representatives in charge of industrial R&D as well as from private and public Research and Technology Organisations (RTO’s) from thirteen countries (Austria, Belgium, Denmark, Czech Republic, Finland, France, Germany, Hungary, the Netherlands, Poland, Sweden, Switzerland and the United Kingdom) have contributed to a lively exchange of experience speaks itself for the success of the meeting.

What are the issues coming to mind at this closing session when reiterating some of the highlights of this meeting?

There was talk about

- the “White space” or ‘terra incognita’ in Western Europe concerning the R&D potential in Central and Eastern Europe,
- the need for East-West ‘Match-makers’, ‘Go-betweeners’ and ‘Marriage brokers’ to overcome this information gap,
- “Yellow pages”, “White papers” and “Blue lists”,
- a much needed “Master Plan for Innovation and Restructuring of Polish R&D”,
- the much needed mutual ‘trust’ and ‘confidence’,
- the ‘10 EIRMA guidelines for Technology Transfer’ and the ‘10 commandments’,
- the need for the ‘scouting of talents’ or ‘Reconnaissanceurs’ in CEE,
- ‘Road Maps’ and ‘milestones’ for navigating into the important time frame covering the next 15 years,
- Industries from the West confessed their ‘hunger’ for university cooperation in CEE.

More concretely, the following observations made at the meeting can be retained in order to illustrate some of the discussions:

1. Key persons with enthusiasm are needed as facilitators between West and East European research
2. Industry-University relations introduce economic ‘reality’ into the rapidly evolving R&D relationship
3. The question was asked repeatedly: Are there ways to fight the shortage of joint East-West-research projects? Success stories are needed to stimulate emulation by others. ‘Best practise examples’ should be monitored and disseminated
4. Participants from Western Europe admitted ‘*We do not sufficiently know about the Central and East European Science and Technology Communities and their potentials and achievements*’. It was felt, however, that scientists who deal with basic science know their eminent colleagues in CEE and EE very well from publications and conferences. It is the management that does not. Things are different when it comes to applied science due to the lack of publications although even there the basic scientists can build the bridge.”
5. In the same context the question was raised ‘*How to find the right partner in East or West?*’ Matchmakers are needed to overcome what was labelled the “Waiting room mentality” in some of the CEE research institutions. An awareness of Western business ideas and an understanding for the ways in which Western laboratories are being managed are prerequisites for CEE RTO’s seeking cooperation with Western partners.
6. One Western voice added: “*We do not have time for looking around. Therefore, our RTD colleagues in CEE, in their own interest, must adapt to international standards for marketing their results. An ‘active approach’ was called for.*”
7. The tendency in Western Europe to give less attention to fundamental research can be compensated by the strength of the CEE fundamental research performance (Basic R&D of total R&D: Czech Republic 40,3%, Poland 37,9%, Hungary 29,3%).
8. The low level of R&D spending in CEE in both relative terms (% of GDP) and in absolute terms (for ex. the 8 new EU member countries with a total population of 66 mill. inhabitants are spending with 3,1 Mrd.€ only 75% of the 4,0 Bill. €) R&D budget of Austria with 8,0 mill. people). In spite of

this, both the lower wage level and the lower tax system combined with foreign technology through Direct Investments have been able to assure the competitiveness of CEE countries in some strategically important fields.

9. With special regard to the CEE research institutes, the need was stressed to overcome the lack of sufficient knowledge of the Basics of Intellectual Property (patents, unpublished know-how, trade marks, copyrights, etc) and its protection.
The relatively low patent activity in Central and Eastern Europe was explained partly by 'high costs' for the filing of patents.
10. Some of the Polish participants have warned that the Higher Education system in spite of the sharp increase of the student body was 'faulting', the teaching was often not responding to the requirements of industry. More 'cross-border' or cross-disciplinary teaching was needed.
11. The relation 'Business Enterprise-R&D' to 'Government-funded R&D' in CEE (such funds are in any event in absolute figures on a low level), which is for example in Poland 30,8% to 64,8% should be reversed: the EU-15 average is 56,1% to 34,0%, i.e. less government-funded versus more business-funded R&D is called for.
12. In this context it is remarkable that in particular the Hungarian example has demonstrated that countries in Central and Eastern Europe with generally a low level of own R&D expenditure, have been able to become very effective exporters of high-tech goods: 22,9% of the Hungarian exports fall into the category 'High-tech' (EU-15 average: 19,7%). The explanation of this phenomenon is to be found in the high export performance of Western enterprises with manufacturing plants in Hungary. Mainly because of FDI, the percentage of employees in the HighTech sector in our CEE countries (Czech Republic: 8,9%, Hungary: 8,5%, Slovak Republic: and Slovenia: 8,2%) are above the EU-15 average of 7,4%.
13. The subsidiaries are almost entirely relying on the production know-how and on the R&D of the parent company. The same can be said in particular about the automotive exports of Poland, the Czech Republic and the Slovak Republic. Since many of the suppliers of these Western car manufacturers follow the pattern of 'outsourcing' to CEE, such a trend may even accelerate in the years to come.
To sustain the economic 'catching-up' policies of the new EU members the imported R&D results through FDI are thus compensating to a large extent for the often relatively weak domestic R&D base.
13. In addition, some of the Western High-Tech companies do not only produce in Central and Eastern Europe, but they use these locations also as 'antennas' into the local R&D community. Encouraging success stories were reported showing the tendency in CEE to move away from the label of 'Cheap labour' to 'Low cost quality R&D' which has been increasingly detected by a strong field of multinational companies (ABB, Audi, Continental, Dell, Fujitsu, General Electric, General Motors, Honeywell, IBM, Michelin, Motorola, Philips, Siemens and others).
14. The Council of Mutual Economic Assistance (COMECON), abolished in 1991, had imposed on the so-called Soviet Satellite countries a division of labour whereas for example Hungary was mainly in charge of the bus production (Ikarus), Czechoslovakia of passenger cars and heavy machinery, the GDR of chemicals, Bulgaria of microelectronics and

informatics, Lithuania of TV tubes and TV sets and so on. As a consequence, R&D was organised in corresponding branch lines. Apparently this legacy of the past in form of imposed specialisation patterns plays only a minor role in the countries concerned as far as production and R&D priorities are concerned. It was reported that before 1989 the R&D of the individual COMECON countries was mostly based on resources coming from the domestic industry.

Today it is perhaps no coincidence that for example Hungary and the Czech and the Slovak Republic can exploit their traditional experience in the automotive industry, Bulgaria in informatics etc.

As a general rule, however, it can be said that as far as R&D is concerned, as in Western countries each country competes more or less successfully with everybody else on the same series of 'Clusters', such as Biotechnology, IT, environmental issues, material science etc. etc.

Regional co-operation mechanisms in Central and Eastern Europe, such as the 'Visegrad-Group' have a primarily political character and have so far no bearing on R&D co-operation among the participating countries.

15. There was consensus on both sides that 'the pace of change' resulting from the concurrent processes of *Transformation*, *'Europeanisation'* and *Globalisation* were such that all concerned had to be 'faster on their feet'. The question was asked: "Where would we like to be in 15 years of time from here?" In order to get there, targets must be set and a national road map with identifiable milestones.

As a sort of summary conclusions of the meeting three sets of recommendations can be identified,

- (I.) addressed basically to governments,
- (II.) addressed in essence to both the RTD community as well as to governments,
- (III.) addressed to EIRMA.

(I.)

With regard to the future of the independent Research Institutes in Poland and in other countries of the region, a deeper analysis of the experience gained by other countries in East and West may be useful:

- In Hungary, for example, the sectoral/industrial RTOs were initially abolished. New organisations were created, such as Zoltán Bay Applied Research Foundation with three research institutes, and university based Co-operation Research Centres. Technical assistance to launch this initiative was given by the German Fraunhofer Society. At present, University based Regional Knowledge Centres consolidating fragmented technical resources are in place or being founded to work with regional & local industry.
- The experience of the transformation and/or privatisation of the numerous Research Institutes of the former GDR - primarily evaluated through an independent peer review system - was presented by the Science Counsellor of the German Embassy in Warsaw, *Stefan Kern*. If further analysed, it may serve as a stimulating case study to other interested countries in Central and Eastern Europe with similar structures inherited from their similar past.
- In Poland, RTOs, Universities and industrial organisations have created

(either independently or based on government initiatives) RTD consortia, in order to achieve the critical mass required to undertake interdisciplinary projects for SMEs and large industrial customers on both the domestic and international scale.

As an example of such a consortium the *Technology Partners Foundation* was presented; one could imagine that such a formula may evolve as a nucleus of a Polish equivalent of the German Fraunhofer-Gesellschaft, the Austrian Christian Doppler Research Society, the French INSA or the Dutch TNO.

Experience has shown that such large organisations can also serve as reliable business partners in research for foreign industrial organisations.

EU and/or bilateral technical assistance to deal swiftly with this wide-reaching issue could be mobilised.

(II.)

Since the EU Framework initiatives cannot substitute for national R&D efforts, there were strong voices to launch on a national scale massive activities to improve R&D and innovation efficiency within the context of international cooperation in order to support the economic competitiveness of the new EU member states. It was felt that supportive governmental backing is a pre-condition for the ultimate success of such an effort.

The national R&D communities should be encouraged not to wait for appropriate governmental actions, but to draft a "*White Paper*" on their own in recommending to the governmental authorities ways and means to set the proposed national Master Plan for Science and Technology into motion.

(III.)

At the beginning of the Kraków meeting it was stressed that the tragic circumstances of the division of Europe after WWII have up-till now not permitted that the Research Community in Central and East European countries could participate in the EIRMA mechanism. As part of the intended 'catching-up' policies of the CEE countries themselves as well as of the efforts undertaken by the EU, EIRMA's doors are wide open for those companies in Central and Eastern Europe which see in EIRMA an essential element for the construction of the European Research Area.

EIRMA should thus be encouraged – inspired by the Association's take-off meeting in Monte Carlo in 1965 with its special focus on Western Europe – to use the Krakow conference in 2004 as a start-off for continued attention to the particular situation of the industrial R&D environment in Central and Eastern Europe. A 'Special interest group' or a regular get-together platform of EIRMA member companies with special interest on the issues dealt with by the Krakow conference may be called for.

About EIRMA:

The *European Industrial Research Management Association (EIRMA)*, Paris, has been created in 1966 under the auspices of the OECD. The Association has 150 member companies based in more than 20 countries. Collectively they fund the major proportion of business enterprise research in Europe. The aim of the Association is to enhance innovation through more effective market-oriented research and development.

EIRMA publishes four times per year – with the support of the Association’s American sister organisation, the *Industrial Research Institute Inc. (I.R.I.)* – a Journal “*Innovation Quarterly*”. www.eirma.asso.fr

Funded in 1938 through the National Research Council (N.R.C.), I.R.I.’s more than 200 member companies employ well over half a million scientists and engineers in R&D activities. I.R.I.’s flagship publication is the Journal “*Research - Technology Management*”. www.iriinc.org

About the Technology Partners Foundation:

In the year 2000 ten independent Polish sectoral Research Institutes and a Technology Consulting company, covering a wide spectrum of R&D activities, have collectively created a common platform aiming to facilitate their marketing efforts and to seek national and international partnerships including EU Framework activities. The consortium is a member of both EIRMA and of EARTO, the European Association of Research and Technology Associations. The member institutes of the Technology Partners employ together a research staff of some 1.000 people.

They are reporting an annual turnover of approximately 55 Mill.US-\$.
www.technologypartners.pl

