

EIRMA Representatives' Round Table Meeting
Globalisation of R&D: Benefits and Drawbacks

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Le Mas d'Artigny, Saint-Paul de Vence

Chairman: Professor Hans de Wit, TNO and EIRMA President

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Summary

Like all business operations, research and development have become global activities. The trends in Europe, the USA and Japan¹ indicate that many corporations have located, or are considering locating, R&D facilities or projects elsewhere in the world: Western European firms are moving R&D into the USA, Asia and Eastern Europe; American firms into Asia; and Japanese companies into the United States.

Decisions to outsource R&D are not new and in fact the proportion of industrial R&D handled this way a century ago was similar to the figure today. (In this respect, the golden days of corporate research were the outlier, not the norm.) However, overall industrial dynamics today are quite different than in the past. It is important to understand the globalisation of R&D in terms of these changed dynamics.

This Representatives' Round Table examined these dynamics and the opportunities and challenges that globalisation presents for the management of R&D in Europe. Parallel issues are:

- o Networking and outsourcing, regionally and globally; and
- o Selecting the locations on a global scale, with important criteria including proximity to good knowledge bases, lead customers and new markets.

Prior to the meeting, it seemed that important considerations would include the following:

- o That the decision to carry out R&D in a given location is closely tied to the strategic questions of developing business and customer networks. Regulatory and legal issues; influence on regional economies; local funding; and the balance of trade and economic growth were seen as important but perhaps secondary points.
- o That the availability of highly qualified labour would prove to be very important issue and more important than the immediacies of labour cost.
- o That, while using IT to share information is easy (knowledge is perhaps the most effective free market that exists today), the coordination of separate R&D activities is still an expensive activity.

These points withstood scrutiny at this meeting. The three main themes of discussion concerned:

- o The reasons for deciding to place R&D in a certain location;
- o How to manage well that decision; and
- o What will remain for Europe and how we shall ensure its continued vitality?

In the face of growing global capabilities, the case for concern about European decline was made strongly, albeit tongue in cheek, by Guy Haemers, but partly refuted by Charles Murray and others. The key point is the economics concept of "competitive advantage." Europe's future strengths can lie in the diversity and maturity of its producers and consumers, its markets and its support systems. Important weaknesses, which must be overcome, are the continued failure to resolve trade and other barriers, the high cost of doing business, and the seemingly endless desire to over-regulate.

¹ e.g. separately by the European Round Table of Industrialists, the Government-University-Industry Research Roundtable, and the Japanese Management Association, each observation causing concern for the local government.

Europe has skills, but not enough, either in total or in specific areas such as organic chemistry, so companies are forced to look elsewhere. Top talent exists everywhere and these people will be increasingly well educated and aware of the world. They must be sought out and treated as such if they are to align their interests with those of the company. Coaching and infrastructure become important success criteria. Relationships also have to be managed.

Similarly, the claims of uniform global approaches and markets have been shown to be a sham. In the many countries where unique value has become the economic driver, global quality and consistency matter to the extent that these provide the baseline for achieving high quality differentiated products.

In marked contrast to the discussion at the EIRMA annual conference held in 1995 in Prague, also on the theme of globalisation, success is measured in terms of an ability to adapt to the local situation, not in having a global controlling resource or creating a monoculture. The new ecology of innovation, so well illustrated at this meeting in the presentations by IBM and Novartis, shows the interdependencies that now exist between small and large, the need to access talent, the need to connect different parts of the innovation system and to understand which core competencies must be kept strong inside the organisation. Does the clock tick more quickly because you have a 24-hour R&D organisation? Do cultural tensions combine to achieve common benefit, or do they block progress.

When it is said that European industry fails to spend enough on R&D, this superficially correct statement opens up some more important underlying points. Which company is it that is not spending enough? Is this the existing company that has chosen to return profits to its shareholders because it can no longer see an adequate return, or is it the company that has chosen to spend its money somewhere else in the world because this is a more effective investment? Is it that industry in Europe reflects the pattern of naturally lower R&D intensity sectors, in other words that there simply are not enough of the potentially high R&D spenders here in Europe? And is the question really about how much is being spent or rather about how well, how effectively, this investment proves to be in turning ideas into products? The answer to all these questions is less straightforward and less comfortable than it might seem on the surface.

So globalisation should not be seen as a threat for the creative company and creative mind. European firms and governments can respond to these forces by being willing to eliminate the barriers that Guy Haemers describes and that hold us back, and create an innovation arena that will be, in Ken Taylor's words, renewing and energising because of its ability to manage R&D more effectively and build upon the positive advantages Europe continues to hold, not the negative, defensive features that depended on being the richest fish in an otherwise poor pond.

1. The Macroeconomic Picture

Peter Cornelius joined Shell recently from the Global Economic Forum as Chief Economist, and is involved in developing the company's new global scenarios. He spoke about changing perceptions of globalisation.

For the last decade, the major, inter-related drivers of globalisation, new technology (largely IT) and market liberalisation seemed irresistible forces. The Washington consensus defined the conditions of openness and fiscal rectitude that all countries must follow if they were to succeed. Global trade has grown rapidly as

a result (albeit still a fraction of internal and regional trade), but some countries have been much more successful than others. Analytically, the benefits seem real; yet there has been a strong backlash.

This is because globalisation also enables growth in undesirable activities such as trade in drugs and people; it raises questions over issues of competitive trade such as the handling intellectual property rights; it creates fear and uncertainty about company loyalties and future security. These points need managing before the benefits can be more widely realised and accepted.

Today's "Washington Contentious" requires not just fiscal discipline, but the means to smooth booms and busts; maintain social safety nets; educate the poor; accept progressive taxation; give small businesses a chance; protect the individual; and provide high quality consumer-oriented public services.

These factors emphasise clearly the importance of local roots, and indicate the way to respond to concerns about the negative impact of untrammelled markets. In seeking the benefits that globalisation can offer, Cornelius' take-home messages are that the company must also recognise and accept the consequences.

It is possible to identify the factors that lead to competitive success at different stages of economic development. The countries in which most EIRMA members are based can be considered innovation driven. "Unique value" has taken over from "efficiency" and "input cost" as the determinant of competitiveness.

This environment for innovation depends on local conditions – human talent, strong basic research, ample risk capital on the input side; a local context that encourages investment; related supporting clusters of industries, providing supply and support; sophisticated and demanding local customers derived from a home customer needs that anticipate developments

elsewhere.

2. The Changing Business Environment and What This Means for R&D

Guy Haemers, former EIRMA President and just now retiring from Bekaert, gave a downbeat view of Europe's prospects in the face of the changing business environment. In all key respects, he saw the US as equal or superior to Europe, with its long-term military investment having driven that process of differentiation.

With an inclination for companies to use reorganisation as the solution to every problem, rather than sticking with decisions for long enough for these to work, and a reluctance by governments and society as a whole to accept the implications of others' emerging competitiveness, he foresaw progressive delocalisation of R&D to regions with a higher speed of innovation than Europe, where their greater entrepreneurialism will bring knowledge much more rapidly through to market.

He predicted that tangible assets will have no real value and will be avoided to the maximum extent in favour of the intangible assets of R&D, marketing and alliance.

Thereby, this talk drew a line in the sand, for others to defend or challenge as they wished.

3. An American Company's Experience of Europe

Charles Murray, Procter and Gamble, rose to the bait. He described how P&G seeks an R&D structure that is optimal at leveraging the best ideas, resources and talents within regions to meet local needs and at leveraging the company's global scale.

With innovation seen as the marriage between "What's Needed?" and "What's Possible?" a company needs the capability to sense, create and implement, transnationally. These processes happen everywhere, and must be managed accordingly. Europe is a key source and

incubator of ideas, offers a very diverse consumer base, excellent suppliers, and fierce competition. This remains a very powerful engine for progress.

Murray went on to describe the evolution away from the traditional model of corporate R&D, to “Collaborate and Develop.” The willingness to licence out technologies which are not strategically vital to the company, combined with measures that actively bring together suppliers and users of ideas and technology at the individual and corporate scales (using external initiatives like Innocentive and NineSigma to access talent and solve problems) define the emerging corporate culture of P&G in terms of globally networked communities.

P&G does not see itself as an American company operating in Europe, but as a transnational with a big local presence. The challenges, complexity and diversity of Europe make it a hot bed of creativity. The company is constantly forced to re-invent its innovation systems and processes; while its European suppliers, SMEs and universities make ideal external partners.

BUT – and this is a big but – western European nations and the EU need to deliver policies, particular on matters of human and environmental protection, that do not endanger our ability to innovate competitively. Much more can and must be done to make access to EU research and research funding less bureaucratic.

4. Global R&D in a Company of 32 People

Nigel Biggs founded Pixology as the result of a varied career in IT consulting. He described the company’s development as digital photography evolved, and the possibility for even a small company with next-to-no R&D base to create ideas that are better than those emerging from large corporate laboratories. Such ideas are easily lost while the small company works to survive, and it needs the help and incentives offered by incubators, mentoring

services, corporate venturing and business links and networks.

From the SME’s perspective, it seems difficult to approach the large corporates because ideas will be stolen, costs will be too high, the company will be too small to be worth attention. So the SME seeks measures that make it seem a more desirable catch. Venture funding seems one route.

The corporate R&D organisation seems to remote, too busy and too wrapped up in its own ideas to take on half-tested ideas from outside. The result is lost opportunities.

(The paradox is that the large company is equally concerned about the SME: will we be seen to be too aggressive, can we respond as fast as they?)

Biggs outlined the role that corporate monitors, trusted intermediaries, hubs and model agreements can play in making the whole system work more effectively. He recognised the problems that each of these solutions creates, but he pointed also to the interdependency that exists in today’s business world. He sought a worldwide dating agency, where all the agents can talk to each other, understand each other’s needs without competing and without charging excessively for an introduction.

5. Taking Consumer Goods R&D into China

Ian Norton of Unilever’s Colworth facility described the strategic decision taken by Unilever in 1996 to build relationships with Chinese science and establish a research presence in China. The focus was on Shanghai, as the company’s business was based there, in what was clearly a very dynamic city, there was (and is) a strong academic community and a government belief that science and technology will provide the basis for economic growth.

In the first stage, the decision was to establish a major collaboration with the Shanghai Institute of Organic Chemistry (SIOC), reflecting also the declining

availability of organic chemists here in Europe. It also established an R&D laboratory as a mixture of regional innovation centre plus a centre for research into natural products. The logic was to focus on local strengths.

These experiments benefited from the supportive structures that Unilever provides for its longer-term R&D. With board-level commitment, it is possible to see the experiment through until the interaction starts to pay off.

At the 2001 review, the R&D fund supporting this initiative was continued but given greater focus. It is decided to invest primarily in one area of key mutual interest. The vision for research in China thus develops, and the scale of the initiative can grow.

In the early days, relationships were the key to doing anything, and a lot of effort went into developing these relationships and getting a toe-hold via the collaboration with SIOC. This effort takes time and it needs senior support.

6. Ten Myths about Handling Globalisation

Martin Navrátil, chairman of Synpo, is a clearly-spoken man who recognises mistakes and is prepared to admit that he has made them all. His talk restated the earlier messages about treating globalisation trivially.

In all respects from marketing through R&D to HR systems, the assumption that global standardisation will prove more effective than local understanding and resilience proves to be wrong.

Furthermore, at least in the industry in which he works, the need for such standardisation, even in seemingly obvious areas such as information technology and account management, is less real than it seems.

On the contrary, globalisation must be driven by the ability to manage and accommodate diversity, differentiation and

specialisation.

The general economic principles of trade apply: everyone will benefit when everyone finds their competitive niche. Efforts to globalise must be driven by a global business strategy that identifies and exploits the best; that genuinely understands and responds to what customers want; and finds the best places in the world to develop or licence technology and then make the product.

7. Big Pharma's External Collaborations: an Option or a Must

Romeo Paoni came to this meeting a happy man, with company profits sharply up. This is a company which is currently seeking to instil a much stronger American spirit into its culture, accessing the great resources that exist in that country.

Collaboration and outsourcing have become essential and integral parts of pharmaceutical R&D. External R&D now constitutes around 30% of the Novartis R&D budget, which is a very high proportion by overall industry measures.

The global management of the R&D portfolio is clearly crucial in this sector where product development is so complex, where the number of products in development is a key factor determining the company's share price, and where shaving time off the regulatory process makes a large difference to the economics.

In the post-genomic era, "big pharma-biotech" collaboration is undergoing a quite dramatic evolution. It is not an option: it is an integral part of strategy.

8. Taking R&D in the IT Sector into India and China

IBM runs the world's largest IT research organisation and still does most of its own R&D. The reasons are to maintain the scientific and technological leadership needed to stay at the top of the value chain in this rapidly changing field.

Krishna Nathan, head of the Zurich laboratory, outlined the contributions that

the IBM laboratories make to the company's success. He confirmed that, in research, the predominant costs are in establishing facilities and creating the tools and technologies to do sustainable, top quality work. Decisions about the location of research centres are based on access to locally-based talent, far more than on labour rates.

The level of people IBM seeks to employ can find work anywhere. Although employment costs cannot be wholly ignored, it would be reckless to seek to employ such people on the basis that they are "cheap."

So the company has taken its R&D into India and China for much the same reasons as it stays in Europe. The move is now feasible; it allows the company to be close to important markets; to develop solutions tailored to local needs; to understand local technical challenges and technical standards; and because world-class skills are available there.

Of course, some obvious lessons have then been re-learned: India and China are different, local relationships to government are crucial to success; it is not about "off-

shoring" but about treating new excellent people as the equals of the rest.

The message for Europe, taking us right back to the start of this meeting, is that governments here have to work with business to create an environment that will foster continued investment and economic development; that innovation has to be seen more broadly than traditional notions of R&D and intellectual property; that universities must be challenged to provide the right talent for the future; that mobility must be increased and labour laws made more flexible; and that risk taking encouraged.

These messages are well-known, long and often restated, yet seemingly very hard for many of us to put into practice.

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Programme

Thursday, 22 January 2004

Peter Cornelius, Chief Economist, Shell: "Introduction: Current thoughts on Globalisation and Global Competitiveness"

Guy Haemers, Corporate Vice President, Bekaert: "The Changing Business Environment and What This Means for R&D"

Charles Murray, Vice President R&D Fabric Care, Procter & Gamble Eurocor: "An American Company's Experience of Europe"

Nigel Biggs, Founder and Director, Pixology: "Global R&D in a Company of 32 People"

Ian Norton, Chief Scientist, Unilever: "Taking Consumer Goods R&D into China"

Friday, 23 January

Martin Navrátil, Managing Director, Synpo: Ten Myths about Handling Globalisation

Romeo Paioni, Head of Scientific and External Affairs, Novartis, "Big Pharma's External Collaborations: an Option or a Must"

Krishna Nathan, Director, IBM Research, "Taking R&D in the IT Sector into India and China"

General Discussion facilitated by Jens Rostrup-Nielsen, Director R&D, Haldor Topsøe: What Does This Mean for Firms and their R&D in Europe?

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