

LocoMotive

The LocoMotive Project: Overview and findings

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The LocoMotive Project

Aim:

“By providing a better understanding of the characteristics of, and motives for, the way in which MNEs organize their international R&D across European regions, the LocoMotive project aims to contribute to better and more effective policy making at the regional, national and European level.”

Approach:

Combining detailed regional information on R&D facilities with an analysis of global trends in R&D (including increased internationalization of R&D, the rise of China and India, outsourcing, and the increased complexity of organization of international production).

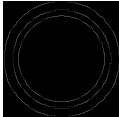






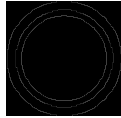

The LocoMotive Project: Main Questions

1. What are the locational determinants for R&D activities by MNEs in European regions?
2. How do MNEs organize and coordinate their R&D activities within their firm and across borders?
3. What is the regional contribution of MNE R&D activities in terms of employment, innovation, and spillovers?

The LocoMotive Project: Methodology

Three main empirical components

- Interviews with R&D managers
- Round table discussions
- 'Global View'

	Interviews	Round table	Global View
Theme 1 - Motives			
Theme 2 - Organization			
Theme 3 – Impact			

The LocoMotive Project: Interviews and Roundtables

Interviews

- 40 semi-structured interviews with senior R&D managers across 8 regions
 - Sectors: Electronics, Chemicals/Pharmaceuticals, Aerospace, other
 - E.g.: Siemens, Philips, Sanofi-Aventis, Airbus
- Pilot-tested with 1 interview in each region

Roundtables

- 1-2 roundtables in each of the regions
- Bringing together R&D managers, regional development agencies, government officials, tech transfer officers, academics, SMEs

1. Locational Determinants of R&D

Centripetal forces (innovation at home)

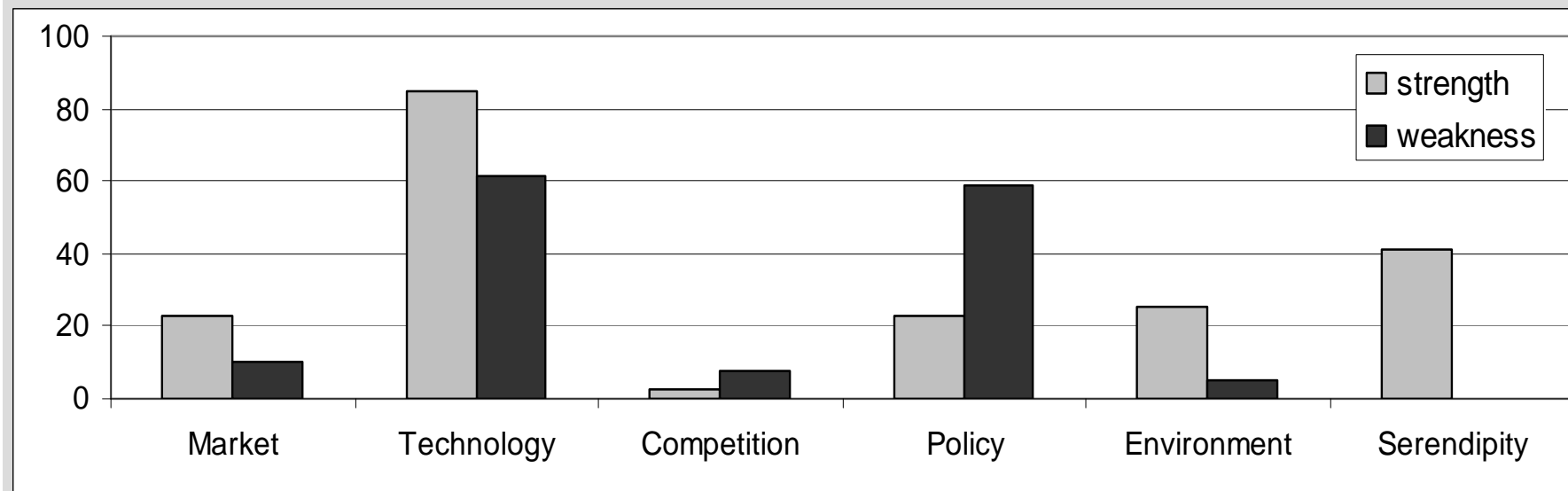
- protect firm-specific technology
- minimize organizational costs
- economies of scale
- home country embeddedness of R&D

Centrifugal forces (innovation abroad)

- Market/demand side factors
- Technology/supply side factors
- Competitors
- Policy
- Environment
- Serendipity

Interview Results – Motives

- Technology is a main historical and current locational motive
- Markets are less important, *for Europe*
- Many firms stay in a region due to policy factors and environmental factors
- History and path dependency play a major role
- At the same time, technology (costs and quality) is also an important weakness (often ‘threat’), as is policy



Interview Results – Suggested Policy Changes

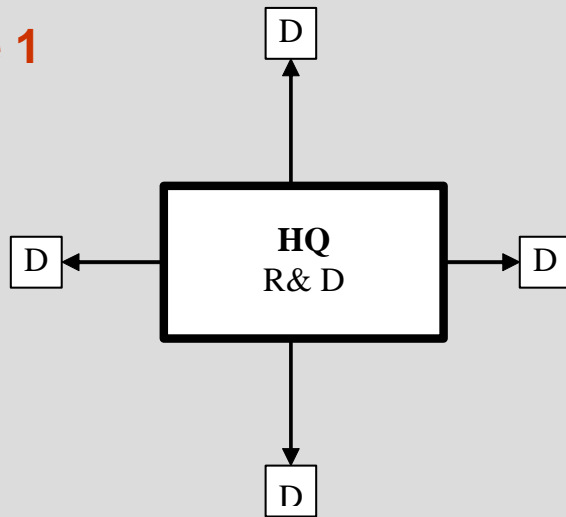
- **Taxes (28%)**
 - Lower to keep (staff) costs down in comparison to China and India
- **Education (41%)**
 - Better trained graduates
 - more attention for basic engineering
- **Funding (41%)**
 - More, but also more focused: no regional or thematic fragmentation
 - Support intra-industry cooperation and links with universities & governments
- **Governance quality (31%)**
 - Stability (no sudden changes)
 - Simplification and harmonization

Roundtable Results

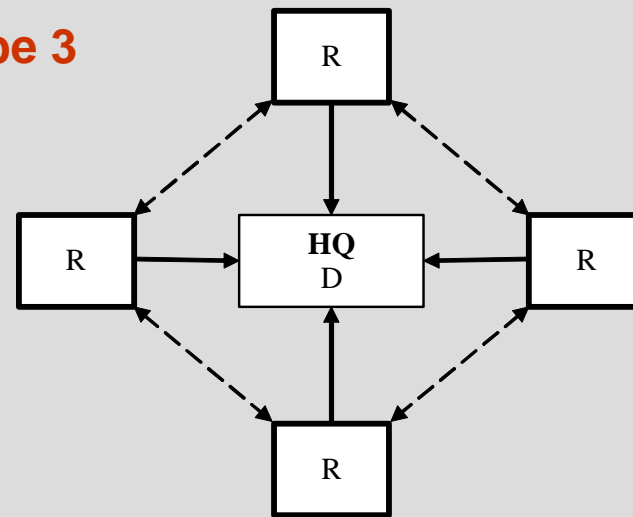
- In general: confirmation of interview results
- Discussions on specific (policy) solutions to specific regional problems, e.g.:
 - Helsinki
 - very innovative by all standards, but limited international investment → regional branding
 - Toulouse
 - Specialist knowledge available, but limited links with private sector firms → involvement of academics in EU initiatives (JTI)
 - Budapest
 - Local absorptive capacity (entrepreneurship, funding) → education and skills for business venturing

2. Organizational Structure

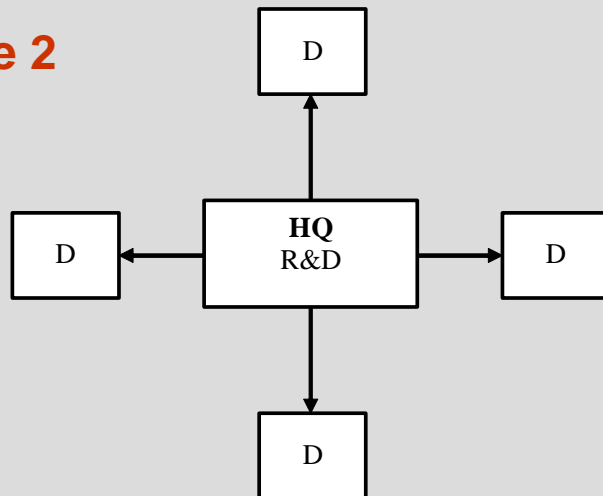
Type 1



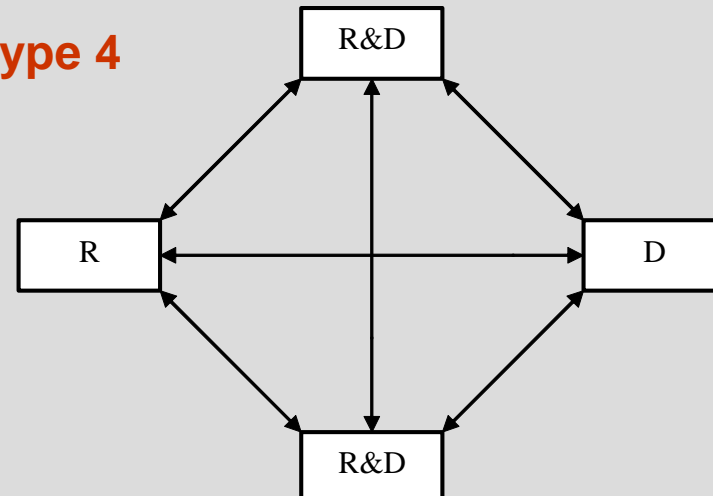
Type 3



Type 2

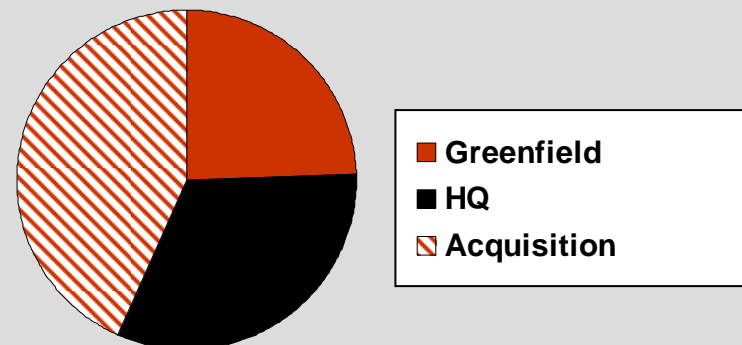
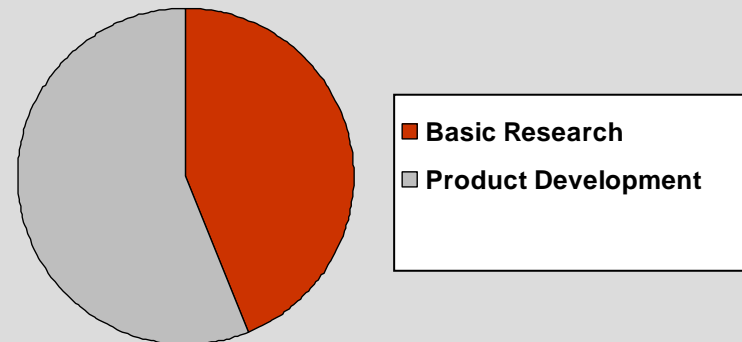
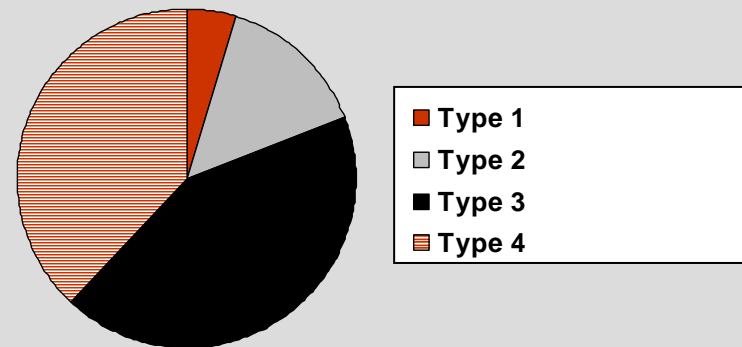


Type 4



Interview Results – Organizational Structure

- Type 3 and 4 dominate ('network kind organizations')
- Predominantly Product Development, followed by Basic Research
- Distribution of HQs, acquisitions and greenfields

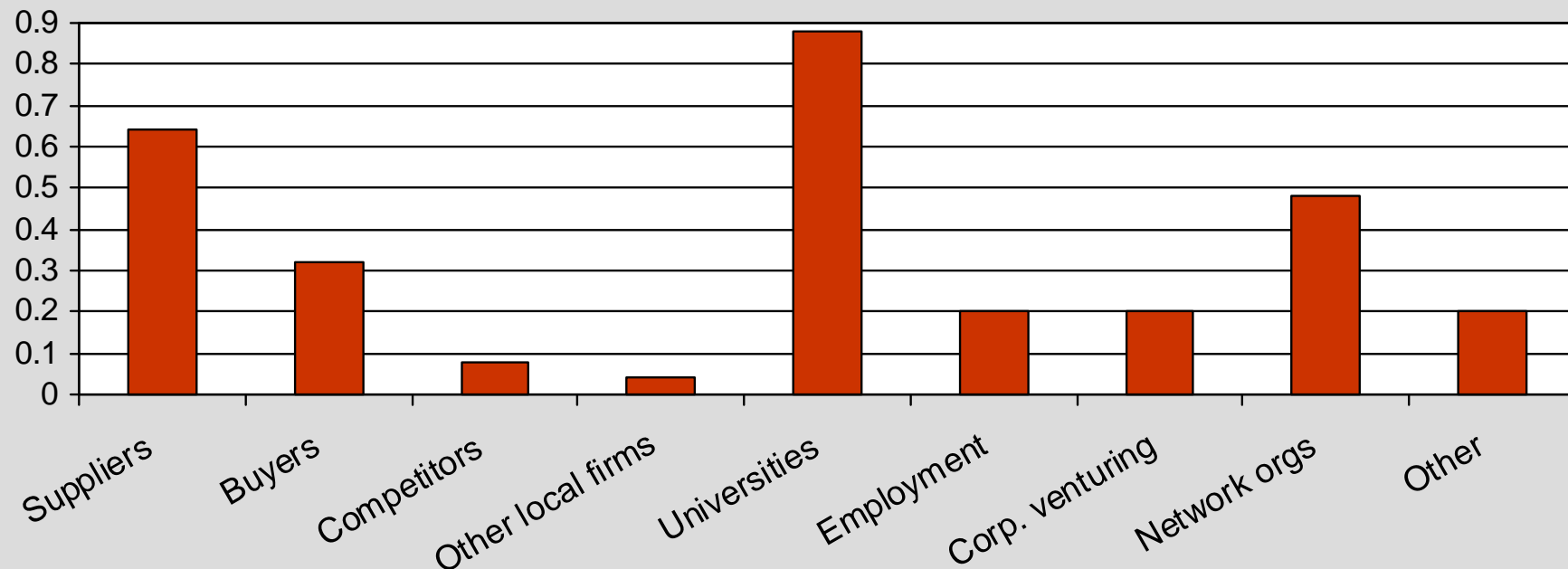


3. Regional Linkages

1. Contracts and informal ties with local firms
 - Suppliers (including multinational KIBS suppliers)
 - Buyers / consumers
 - Competitors
2. Contracts and informal ties with research institutes
 - Universities
 - Other research institutes
3. Employees
 - Labour migration
 - Proportion of native vs non-native employees in the workforce
4. Other contractual and informal ties with the local region
 - Corporate venturing; intermediary agents;
 - Policy makers and government

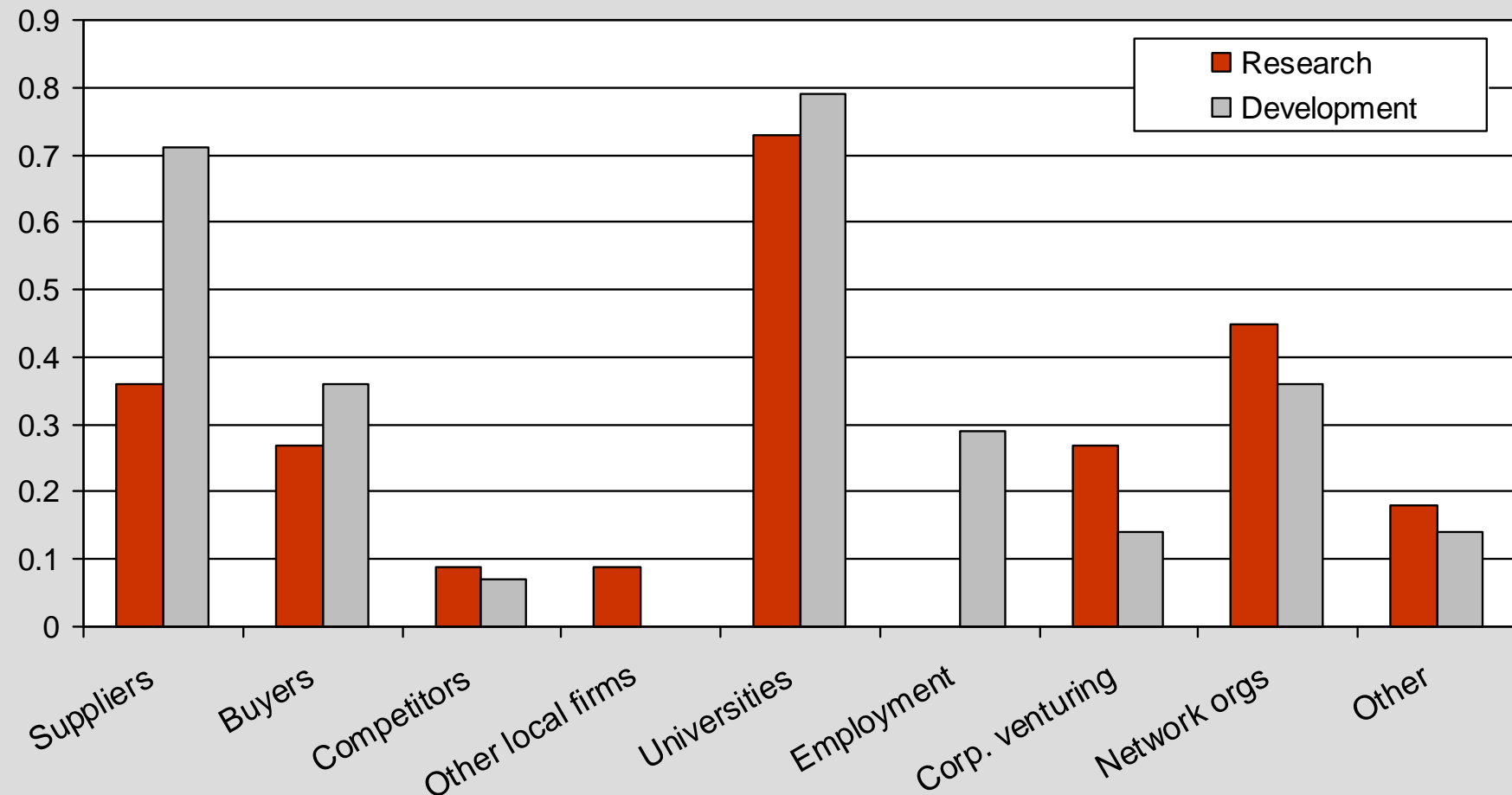
Interview Results – Regional Linkages

- Many links with local firms (particularly suppliers), universities and network organizations.
- Little information on whether used for knowledge acquisition, or knowledge transfer
- Degree of engagement not always clear (nearly every firm has informal contacts with university)



Interview Results – Synthesis (example 1)

- Differences in regional linkages between ‘basic research’ and ‘product development’ subsidiaries



Interview Results – Synthesis (more examples)

- Differences in regional linkages by organizational structure
 - Acquisitions have stronger regional links than greenfield investments
 - Headquarters (domestic firms) have stronger regional links than subsidiaries (foreign owned firms)
 - Hierarchically organized firms have more regional links than network firms (except for engagement in corporate venturing)
- Differences in regional linkages by investment motive
 - R&D units created for market-related motives have the strongest links with local firms (buyers, suppliers)
 - R&D units created for accessing technology have the strongest regional links with universities and suppliers, and engage most often in corporate venturing

Conclusions/policy issues

- Harmonization, reduced fragmentation, stability
- Don't look down on product development
 - Regional ties are larger
 - May be a start for more substantial research
- Create quality: *"It is not rocket science: we go where the good people are"*
 - Education: move away from 'mass-middle-class'
 - Import of experts: tax systems, immigration laws
 - Promote and help 'home-grown firms'
 - Acquisitions often showed growth afterwards;
 - HQ have strongest local links
 - Spillovers require absorptive capacity

Thank you

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