Supplier Parks: Shared Proximity and Distributed Ownership

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What are Supplier Parks?

- Definition: Cluster of suppliers located adjacent to, or close to, a final assembly plant
- My study
  - Sets the normal logistics focus in broader organisational analysis
  - Challenges the smooth progression from left to right
Automotive Supplier Parks: 1990s Phenomena

- Modular Consortia
  - Volkswagen Resende, Brazil (9 suppliers)
  - MCC Smart in Hambach, France (8 suppliers)

- Industrial Parks
  - Brazil
  - Europe, then the US

- At least 35 supplier parks around the world
Emerging Market Experiments First, Home Implementation Later

- Ford
  - Amazon Project in Camacari, Bahia, Brazil
  - European supplier parks (Valencia, Saarlouis, Genk, Halewood, Cologne)
  - Chicago park in 2004 -- the first in US

- General Motors
  - Blue Macaw in Gravatai, Brazil
  - In Europe: Ellesmere Port, Opel Russelsheim

- Renault
  - Curitiba, Brazil
  - Sandouville, Douai (France); Palencia (Spain)

- Mercedes (Spartanburg, USA)

- BMW (Tuscaloosa, USA)
# Supplier Parks in the United States

<table>
<thead>
<tr>
<th>OEM</th>
<th>BMW</th>
<th>Mercedes</th>
<th>Ford</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Spartanburg</td>
<td>Tuscaloosa</td>
<td>Chicago</td>
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</tbody>
</table>
| Chassis | ZF Lemförder (axles, suspension)  
Alfmeier (fuel tank components)  
Plastic Omnium (fuel tanks)  
Zeuna Starker (exhaust systems)  
Continental Teves (front corner brake modules) | Dunlop (tyres)  
T&WA (tyre assemblies)  
ZF Industries (front and rear axles) | ZF Lemforder (suspension)  
Visteon (fuel tanks) |
| Drivetrain/electrical | Delphi-Packard (wiring harness)  
Dräxlmaier (wiring harness) | Delphi (wiring harnesses) | S-Y Systems (wiring) |
| Exterior | Plastic Omnium (bumpers)  
Magna International (body stampings)  
Spartanburg Steel (stampings)  
Edscha/ASC (roof system) | Oighara (body stampings)  
ORIS Automotive (trailer hitch)  
Rehau (bumpers, exterior trim) | Brose (door modules)  
Sanderson (stamping)  
Tower Automotive (stamping) |
| Interior | Lear (seats)  
Behr Climate System (air conditioning condenser)  
Dräxlmaier (interior trim)  
Sommer Allibert/ Inoac (interior trim) | Becker (interior trim)  
Delphi (cockpit module)  
Johnson Controls (seats, headliners) | Plastech (plastic parts)  
Summit Polymers (consoles)  
Visteon (cockpits) |
| Other | Alfmeier (fuel pumps and valves)  
Bosch (oxygen sensors)  
Kolbenschmidt Pierburg (fuel pumps) | | Pico (manufacturing equipment) |
Supplier Parks in Europe

Adapted from: Automotive News Guide To Purchasing
Ford’s Supplier Parks in Europe

<table>
<thead>
<tr>
<th>Model</th>
<th>Focus</th>
<th>Focus</th>
<th>Jaguar X-Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Saarlouis, Germany</td>
<td>Valencia, Spain</td>
<td>Halewood, UK</td>
</tr>
<tr>
<td>Chassis</td>
<td>Benteler (front &amp; rear axles)</td>
<td>Benteler (rear axle)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dalphi Metal (wheel assembly, shock absorbers, springs)</td>
<td>L Girling (brake booster)</td>
<td></td>
</tr>
<tr>
<td>Drivetrain/electrical</td>
<td>Lear (wiring harness)</td>
<td>Arvin Exhaust (exhaust system)</td>
<td></td>
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<tr>
<td></td>
<td>LMS/Sommer Allibert (engine/gearbox)</td>
<td>Kautex (fuel tank)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lear (wiring looms)</td>
<td>Lear (wiring looms)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dalphi Metal (radiator assembly)</td>
<td>Dalphi Metal (radiator assembly)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heidemann (gearshift assembly)</td>
<td>Heidemann (gearshift assembly)</td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td>Michels (body parts)</td>
<td>Dyanmit Nobel (bumpers)</td>
<td>Conix (painted bumpers)</td>
</tr>
<tr>
<td></td>
<td>Sekurit (glass)</td>
<td>Irametal (body parts)</td>
<td>Studco (bracket welding)</td>
</tr>
<tr>
<td>Interior</td>
<td>Anterist &amp; Schneider (instrument panels with steering wheel/column)</td>
<td>Dalphi Metal (steering column)</td>
<td>Lear (seats)</td>
</tr>
<tr>
<td></td>
<td>Irausa (headliner)</td>
<td>IPV (instrument panels)</td>
<td>Visteon (IP, corner modules)</td>
</tr>
<tr>
<td></td>
<td>LMS/Sommer Allibert (door/side trim)</td>
<td>Borgers (carpets)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Johnson Controls (seats)</td>
<td>Infast (fasteners)</td>
</tr>
</tbody>
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# Renault’s PIF

<table>
<thead>
<tr>
<th>Model</th>
<th>Clio, Scenic</th>
<th>Laguna, VelSatis</th>
<th>New Megane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Curitiba, Brazil</td>
<td>Sandouville</td>
<td>Douai, Palencia</td>
</tr>
</tbody>
</table>
| Chassis     | Vallourec (wheels, tyres, suspensions)  
SMI-Koyo-Perdriel (steering assembly)  
Michelin (tyres)  
Vallourec (axle assemblies) | | |
| Drivetrain/electrical | Siemens (wiring harness)  
Faurecia (exhaust systems) | Lear (wiring harnesses) | Siemens (wiring harnesses) |
| Exterior    | Thera (stamping)  
Peguform (painted bumpers)  
PPG (paints) | | VPO (front end modules) |
| Interior    | Faurecia (seats, steering columns)  
SAS (door panels, cockpits)  
Eurostyle (plastic trim)  
Treves (carpeting & sound insulation) | Faurecia (seats)  
Sommer Allibert (door panels, dashboards)  
Inoplast Plastic Omnium (IPO) (HVAC)  
Irausab (roof lining) | S.A.S. (cockpits)  
Benteler (cross car beam)  
Grupo Antolinb (door modules) |
| Other       | | | |
# Key Dimensions of Supplier Parks

<table>
<thead>
<tr>
<th></th>
<th>Committed</th>
<th>Uncommitted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How proximate?</strong></td>
<td>Under one roof</td>
<td>Close but separate</td>
</tr>
<tr>
<td><strong>Specific asset ownership</strong></td>
<td>By suppliers</td>
<td>By OEM</td>
</tr>
<tr>
<td><strong>Employment governance</strong></td>
<td>Unified</td>
<td>Diversified</td>
</tr>
<tr>
<td><strong>Tasks outsourced to suppliers</strong></td>
<td>‘Everything’ (design, mfring, assbly)</td>
<td>Warehousing with sequencing only</td>
</tr>
</tbody>
</table>

Why do parks vary along these dimensions?
Four Puzzles at Supplier Parks

- **Modularity vs Outsourcing Dilemma**
  - Outsourcing with modular product architecture does not necessarily require proximity

- **Voice vs Exit Trade-off**
  - OEMs struggling to have the best of both greater commitment (voice) and flexibility (exit) from suppliers

- **Unified vs Diversified Employment Systems**
  - Unified system undermines suppliers’ cost advantage; diversified system under-exploits potential benefit of proximity

- **Governance Ambiguity**
  - Vertical integration of production, but with vertical disintegration of ownership, challenges coordination and authority relations
Key Issues in Automotive Supplier Parks

- **Why is proximity needed?**
  - auto subassemblies are bulky + just-in-time delivery + delayed differentiation requiring sequencing (Proximity as buffer: ‘we can remain somewhat undisciplined with proximity of suppliers in the park.’)
  - outsourcing without modularity forces proximity for close coordination

- **But why is a modular consortium so rare?**
  - Because neither OEM nor suppliers are willing to make the commitment to embedded business relationships
  - Exit (rather than voice) as key motive governing investment behaviour

- **Is vertical integration (VI) of production without VI of ownership sustainable?**
  - Vertical competition between OEMs and suppliers, each pushing risk to the other party whilst attempting to keep rents for oneself
  - Viable only if social relations (hierarchical or otherwise) between firms arise within a supplier park
Conclusions

- **Typology of automotive supplier parks along four dimensions** -- no one best way, driven by different mix of motives

- In many cases, *OEMs create SPs to outsource investment risk to suppliers*, hence distributed ownership

- **Proximity** in supplier parks needed because of delayed differentiation in automobiles with high product variety

- Supplier park is a cluster, but little attention is given to advantages of promoting communication amongst suppliers