

Supplier Parks: Shared Proximity and Distributed Ownership

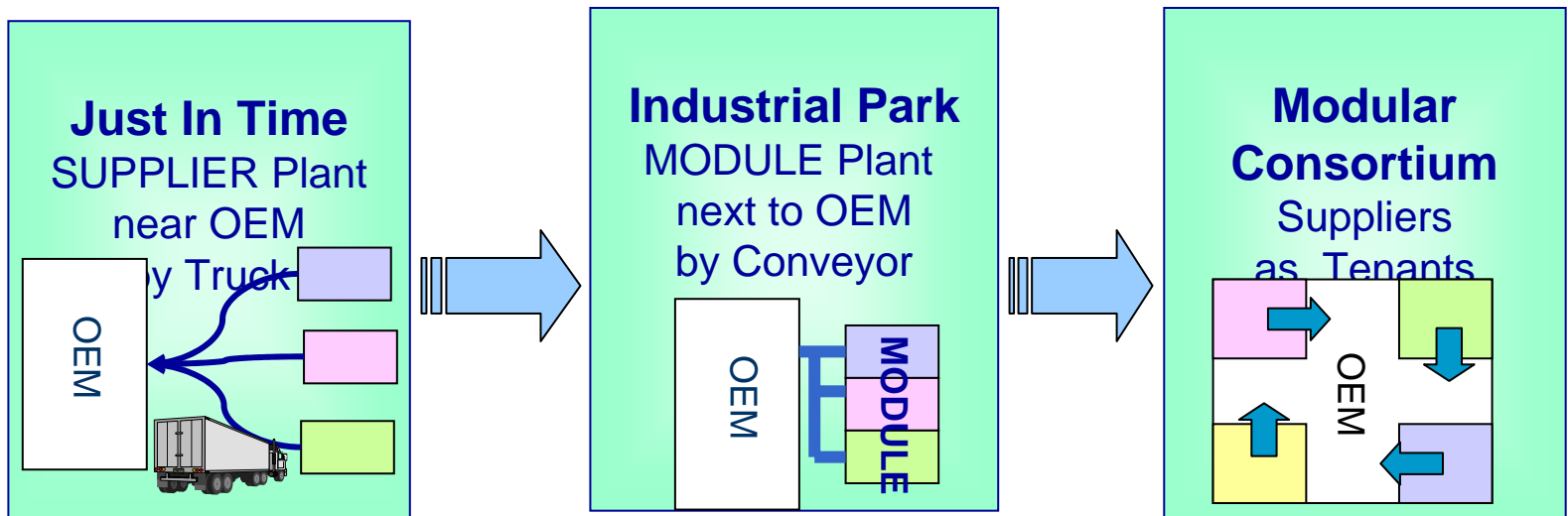


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What are Supplier Parks?

- 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



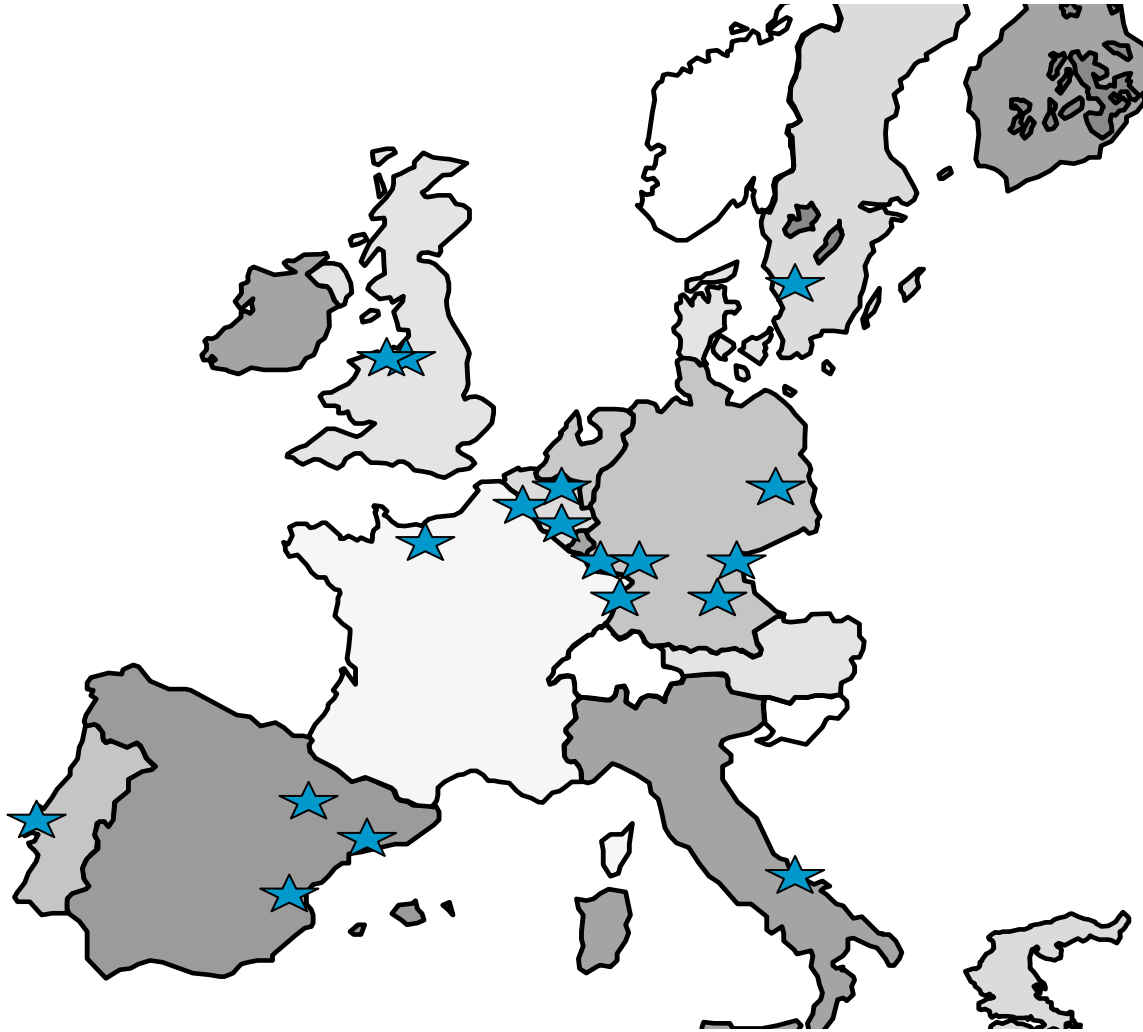
Emerging Market Experiments First, Home Implementation Later

- 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

OEM	BMW	Mercedes	Ford
Location	Spartanburg	Tuscaloosa	Chicago
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)	Ogihara (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

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

Renault's PIF

Model	Clio, Scenic	Laguna, VelSatis	New Megane
Location	Curitiba, Brazil	Sandouville	Douai, Palencia
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

	Committed	Uncommitted
<i>How proximate?</i>	Under one roof	Close but separate
<i>Specific asset ownership</i>	By suppliers	By OEM
<i>Employment governance</i>	Unified	Diversified
<i>Tasks outsourced to suppliers</i>	'Everything' (design, mfring, assbly)	Warehousing with sequencing only

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