



Universität Münster
Institut für Wirtschaftsinformatik

Lehrstuhl für Wirtschaftsinformatik
und Interorganisationssysteme
Prof. Dr. Stefan Klein

www.wi-ios.de
mail@wi-ios.de

7. Electronic Marketplaces in the Automotive Industry

Marcel Gogolin



eBusiness - Hochschulkompetenzzentrum

Overview

- What are electronic marketplaces?
- The „move-to-the-market“ hypothesis revisited
- Real-world vs. theoretical models of electronic marketplaces
- The mixed-mode electronic marketplace
- E-Business potentials in the automotive industry
- A marketplace example: SupplyOn – The online-platform of the automotive industry

Agenda

A. Electronic Markets

B. Industry structure: Automotive industry

C. Marketplace example: SupplyOn

Electronic Marketplace Definitions

- „An **electronic marketplace** (or electronic market system) is an **interorganizational information system** that allows the participating buyers and sellers to exchange information about prices and product offerings.“ [Bakos 1991, 296]
- „An **e-marketplace** is a **multi-party e-commerce platform** intermediating between business buyers and suppliers.“ [Le 2002, 113]
- „**B2B e-markets** function as **electronic hubs** that bring together a large number of buyers and sellers and automate business transactions.“
[Dai/Kauffmann 2002, 42]

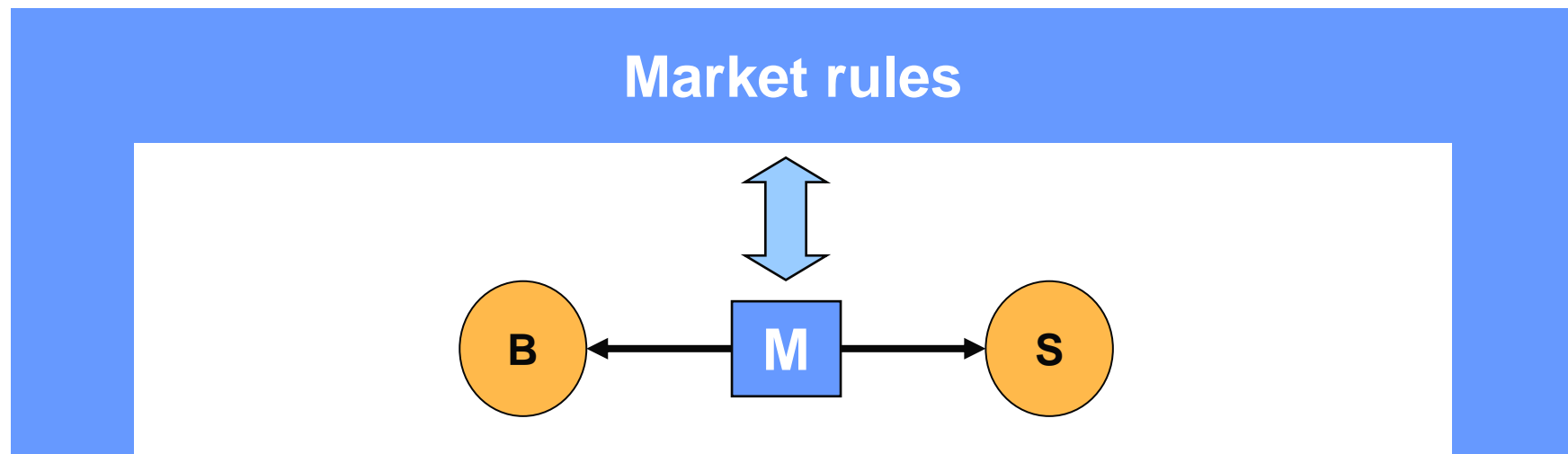
E-market Characteristics

- ... **virtual**, i.e. computer-mediated, marketplaces where multiple suppliers and customers "meet".
- ... (ideally) support **all phases** of business transactions.
- ... typically focus on **efficient transactions** rather than backend integration.
- ... are usually organized and governed by an **intermediary** (centralized market)
- ... follow strict **rules**: obligations of the parties, access, protection against fraud (e.g., insider trading) etc.
- ... (theoretically) come close to the economists's **ideal market** (complete information, immediate reactions of the market players, equilibrium price ...)

➔ Market efficiency is the result of a strong regulatory regime!

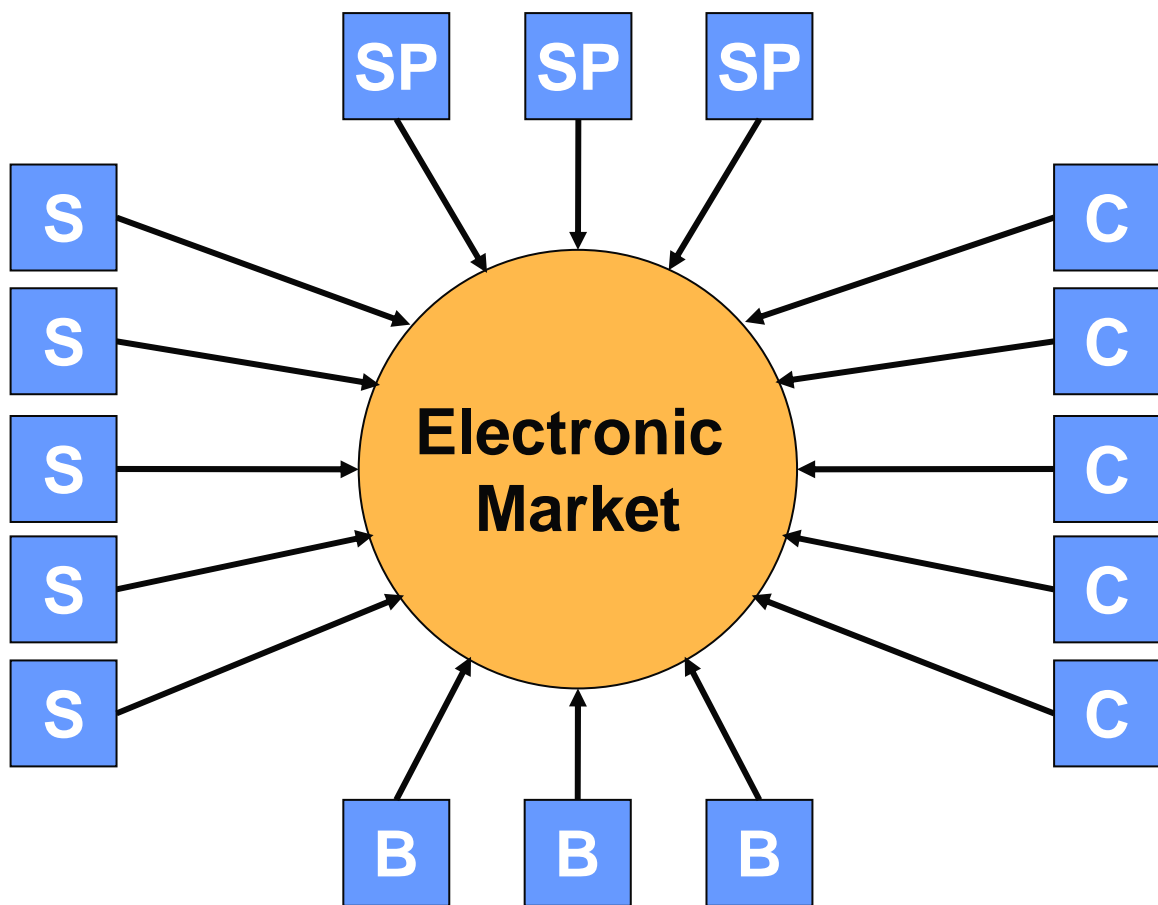
Institutional Structure

- The market provides rules
 - access, protection against insider trading etc.
 - trading rules (e.g., auction), standardized trade procedures
- ➔ **Trading partners decide to use standardized market rules to govern their transaction, rather than having their lawyers develop a customized contract**



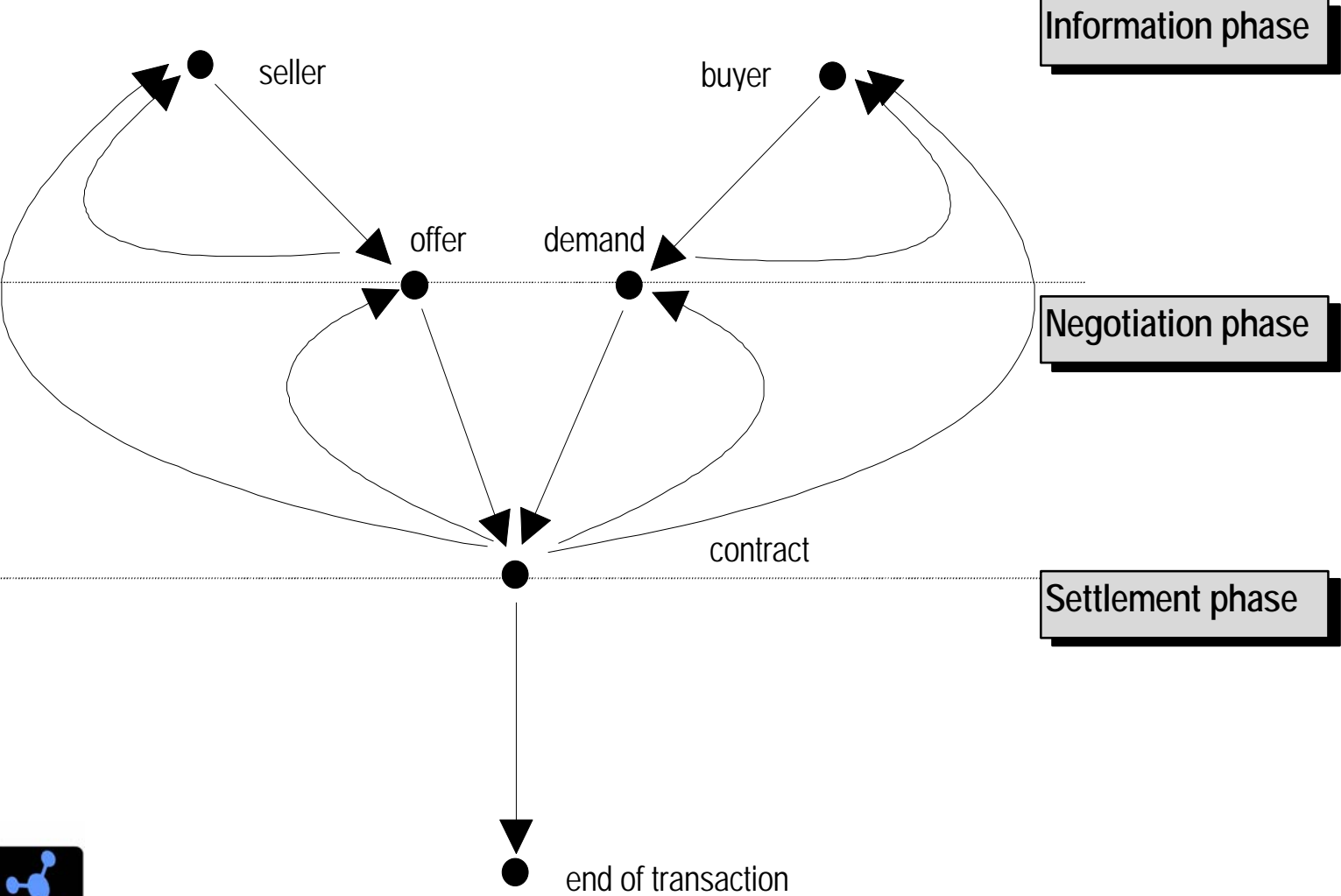
A. E-Markets
1. Introduction
2. Success factors
3. Mixed-mode EM

Actors and Roles



S: Supplier
 C: Customer
 SP: Service Provider
 B: Bank

Transaction Phases



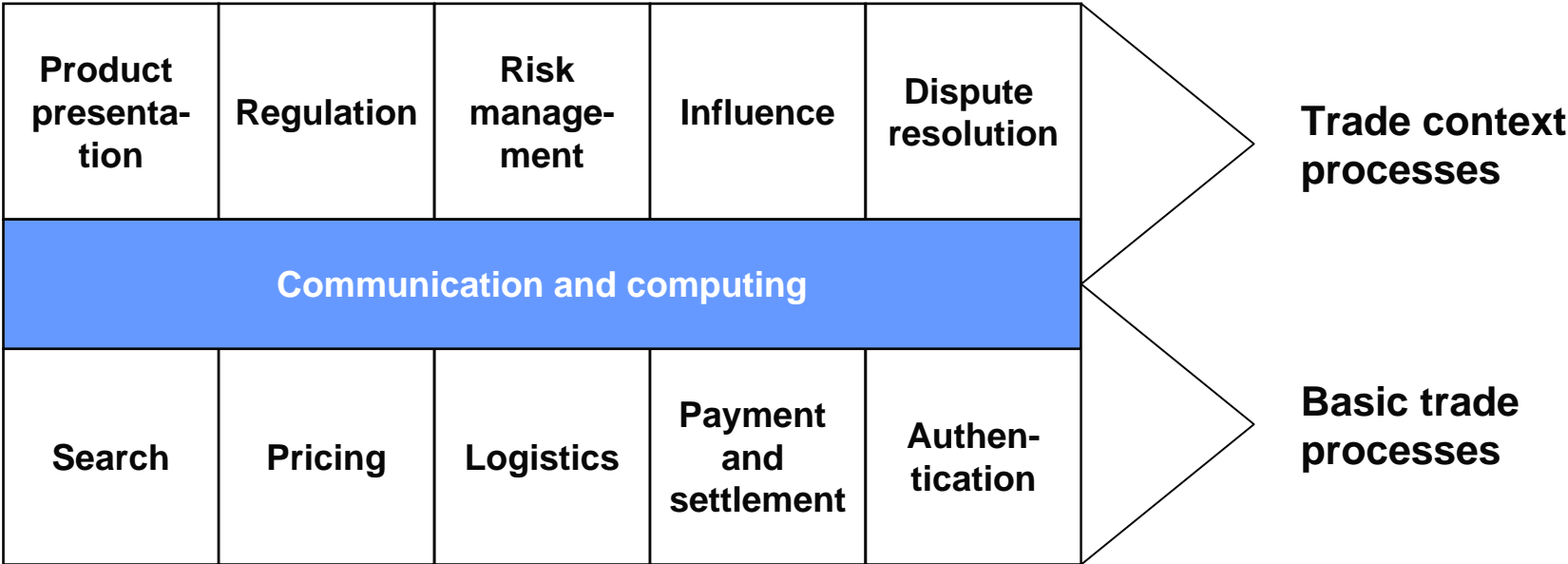
Electronic Marketplace Functions

Main functions	Sub functions
Matching buyers and sellers	(a) Determination of product offerings (b) Search (of buyers for sellers and of sellers for buyers) (c) Price discovery
Facilitation of transactions	(d) Logistics (e) Settlement (f) Trust
Institutional infrastructure	(g) Legal (h) Regulatory

[Bakos 1998]

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Key Processes in Markets

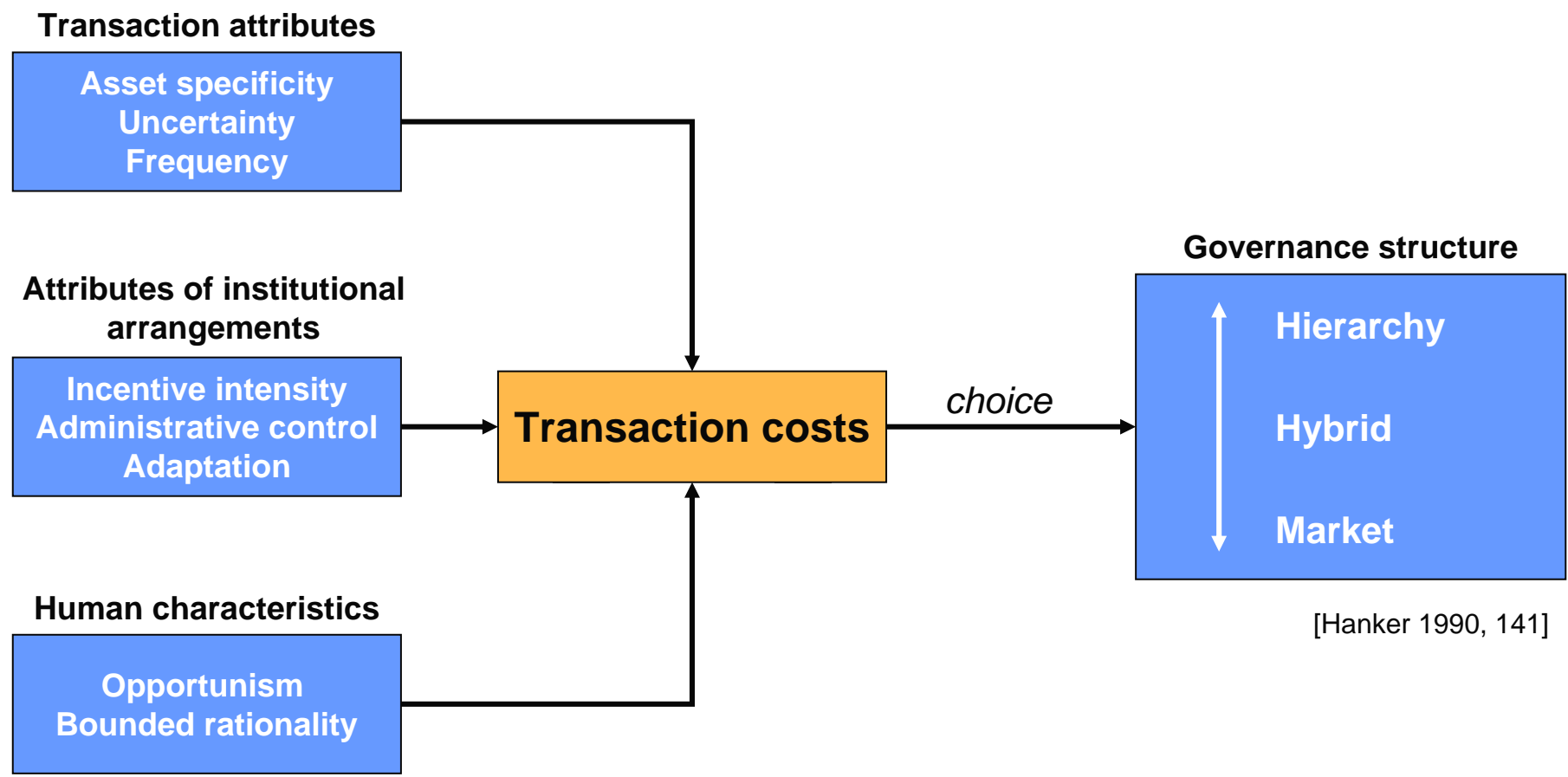


Measures of Success?

- Markets compared to other institutional arrangements
- One market compared to competing markets in the same industry or in other industries
- One market mechanism compared to another one (e.g. English vs. Dutch auction)
- Successful start vs. sustainable success
- ...

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Choice of Governance Structures



[Hanker 1990, 141]

Transaction Costs = Coordination Costs + Governance Costs

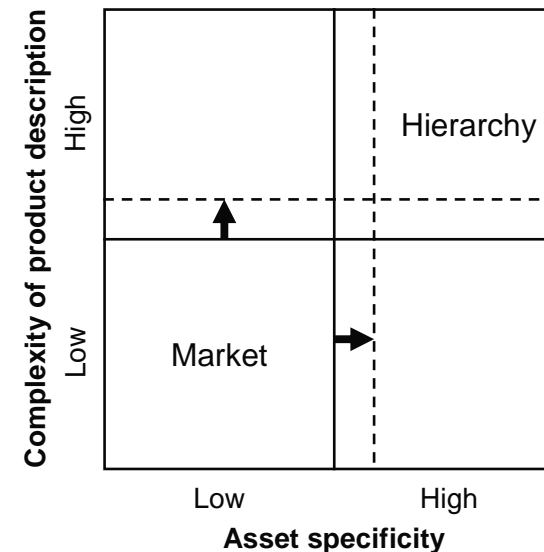
Governance Structures: Markets

- Markets are **coordination mechanisms** based on the rationality and self-interest of economic agents. The market is open to everybody and after a completed transaction each agent is free from any future commitment.
- **Prices** are the central mechanism for transmitting information to all trading parties.
- Markets are particularly **well suited** for straightforward, volatile, non repetitive transactions that require no transaction-specific investment. Markets are inferior when the task is to coordinate highly complex and less vivid forms of exchange (Selz (1999), p. 26).
- **Contracts** regulate the behaviour and the trade among parties.

IT Impact: “Move to the market”

Reasoning

- Comparative analysis of transaction and production cost
- Three effects of IT
 - Communication Effect
 - Brokerage Effect
 - Integration Effect
- Impact on transaction attributes
 - Asset Specificity
 - Complexity of product description



Proposition

- “By reducing the costs of coordination, information technology will lead to an overall shift toward proportionately more use of markets - rather than hierarchies - to coordinate economic activity.” [Malone et al. 1987, 484]

Faulty Business Models or Faulty Governance Structure “Market”?

A. E-Markets

1. Introduction

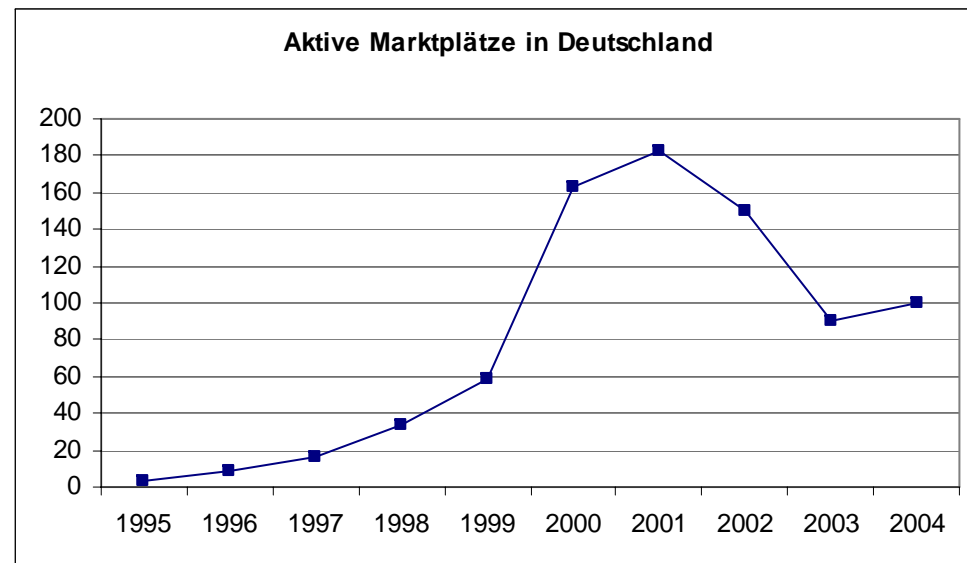
2. Success factors

3. Mixed-mode EM

■ Unsuccessful electronic marketplaces

- were often based on off-the-shelf software that did not provide any competitive advantage,
- provided low value to marketplace participants,
- did not consider the needs and requirements of important stakeholders, management teams, in particular of independent marketplaces, lacked business skills and industry-specific knowledge,
- increased information asymmetry between transaction partners,
- did not consider established social structures and social inertia.

➔ „Shakeouts in digital markets“
[Day et al. 2003]



Learning from Failure ...

- Despite a convincing economic rationale - proven by simulations -, electronic transport exchanges did not succeed because of
 - the complexity of the services,
 - the relationships between the business partners (distrust and power structure) and
 - structural properties of the industry.
- ➔ **Markets are not always the best remedy against transaction inefficiencies!**
- Several logistics solutions failed because of bypassing effects: companies have met on an electronic market and have continued to do business directly.

Success Factors of Electronic Marketplaces

- Partner set-up
 - Who guarantees supply and demand?
 - Consortium operated markets appear to be winners
- Operations
 - Liquidity
 - Transaction fees and bypassing
 - Security, trust, ...
- Comparative advantages - defining the right scope of e-markets
 - Standards vs. pragmatic bilateral shortcuts
 - Price advantages vs. integration efficiencies

The Future of Electronic Marketplaces

- **But:** Electronic marketplaces are still alive...

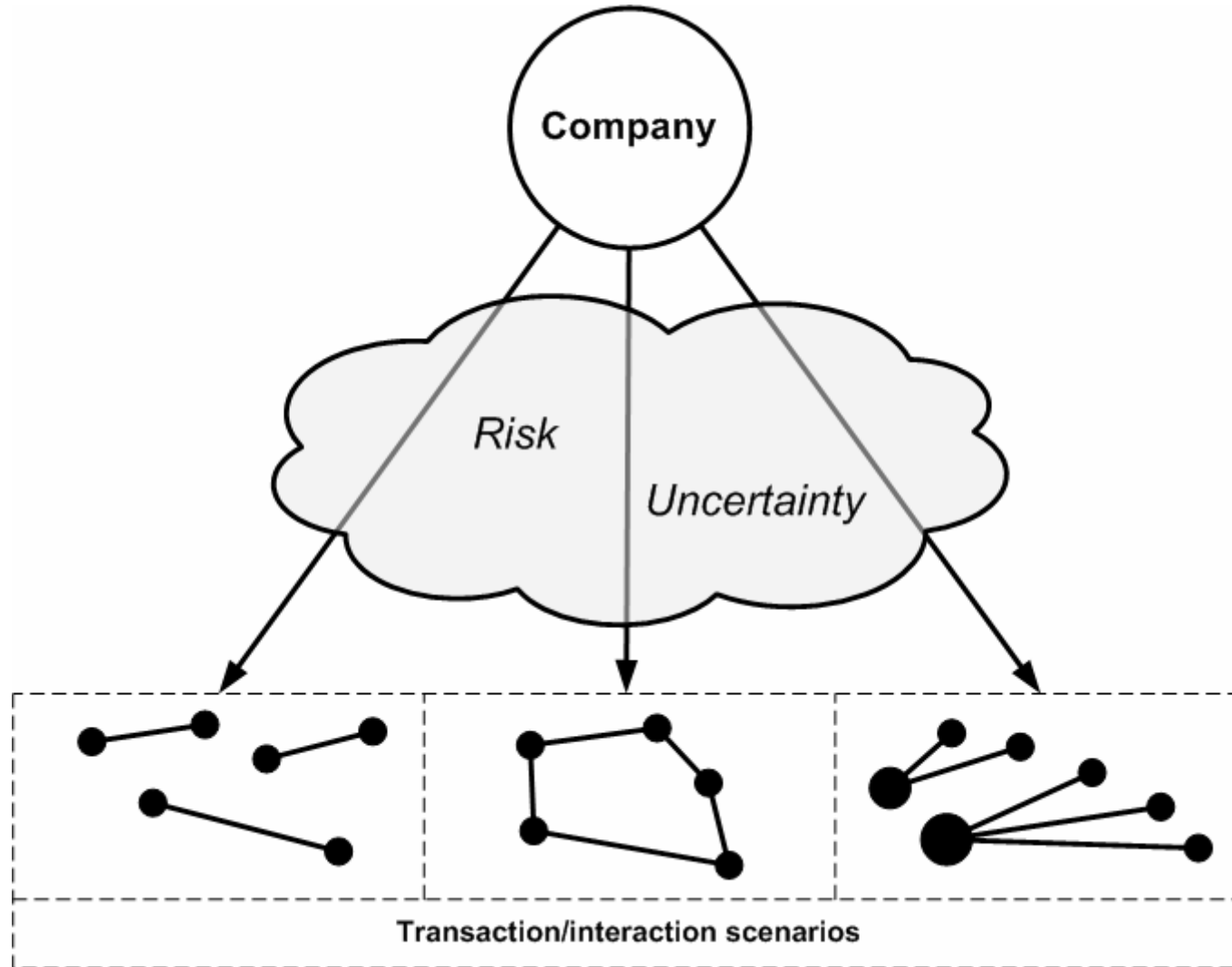
Active in	Berlecon Research		eMarkt Services		
	2002	2003	2002	2003	2004
World	1189	1060	1015	889	861
North America	619	669	459	556	357
Europe	540	381	524	324	434

Marketplace trends

- Increasing number of specialized marketplaces
- Big companies are stronger users of electronic marketplaces and more often members of the provider consortium than SMEs

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Mixed-mode Network Structures



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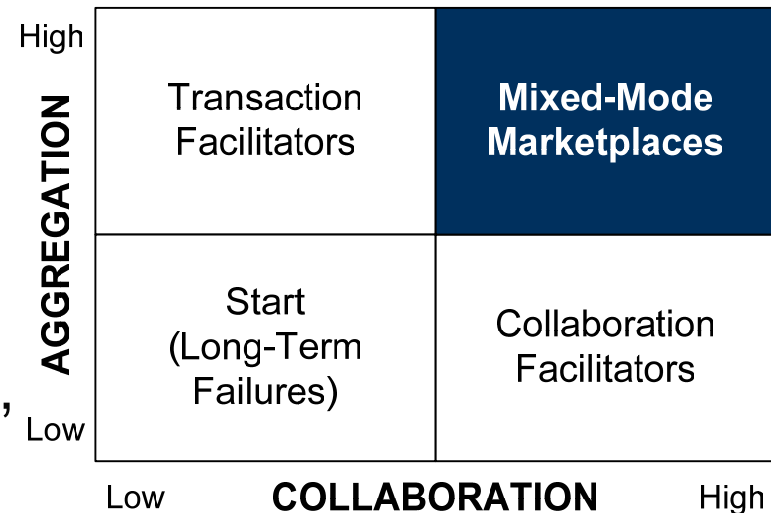
Mixed-mode Electronic Marketplaces

Concepts and approaches

- „Mixed-mode Network Structures“ [Holland/Lockett 1997]
- „All-in-one Markets“ [Kambil et al. 1999]

Characteristics

- Multiple market and relational coordination mechanisms (auctions, RfPs/RfQs, VMI, etc.)
- The appropriateness of coordination mechanisms depends on the socio-economic, technological, and regulatory environment



Acc. to [Le 2002, p. 116]

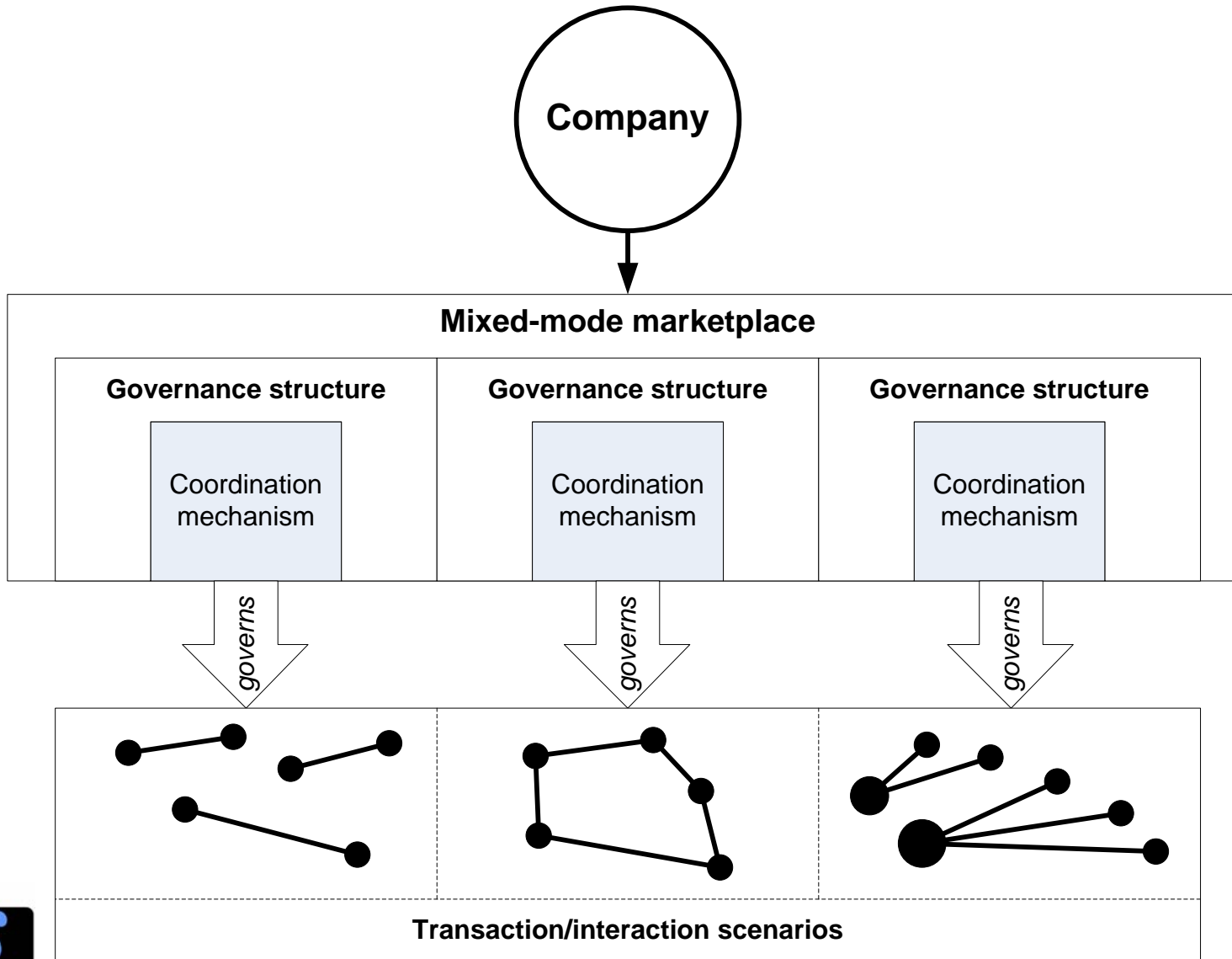
Governance Structures vs. Coordination Mechanisms

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Governance structure Coordination mechanism	Hierarchy	Hybrid/Network	Market
Hierarchical	<i>Normal case</i>	Focal network (vertical integration)	-
Relational/ reciprocal	Divisionalized company	<i>Normal case</i>	Collaboration electronic marketplace
Bilateral/ market-like	Internal markets	Dynamic network	<i>Normal case</i>

Executing Transactions on Mixed-mode Marketplaces

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A. E-Markets
1. Introduction
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3. Mixed-mode EM

Dialectics of Mixed-mode Marketplaces

	Mixed-mode marketplace	
	Transaction services	Collaboration services
Platform characteristics	Transaction services, negotiated pricing (catalogues, auctions, exchanges, bidding), spot trading	Inter-organizational processes and transactions, collaboration services
Market orientation	Horizontal, vertical	Mainly vertical
Service portfolio	Lean service portfolio, focus on efficient price formation/price discovery and settlement	Broad service portfolio (ranging from data format conversion to virtual project management)
Business functions	Purchasing, procurement, distribution	Not determined, but often supply chain focus
Number of participants	High	Low - Medium
Membership stability	Dynamic, high fluctuation	Stable
Openness for new entrants	Open	Closed (network-specific)
Participant relationship	Arms-length/transactional relationship ("market")	Co-operative/relational relationship ("network")
Success factors	Simple access, low entry barriers, back-end integration facilities depending on transaction frequency	Expectation management, asset specificity, lock-in/dependency, trust/commitment among participants

Conclusion

- At the **first glance** we see a proliferation of e-markets, in particular market mechanisms (e.g., auctions).
- At the **second glance** (or during the second wave) many exchanges appear not to be successful. In response, the notion of the market is extended (or blurred): the trend is towards integrated marketplace (mixed-mode marketplaces).
- Overall, the **notion of markets**, non-market preconditions and operational success factors of e-markets are not well understood.

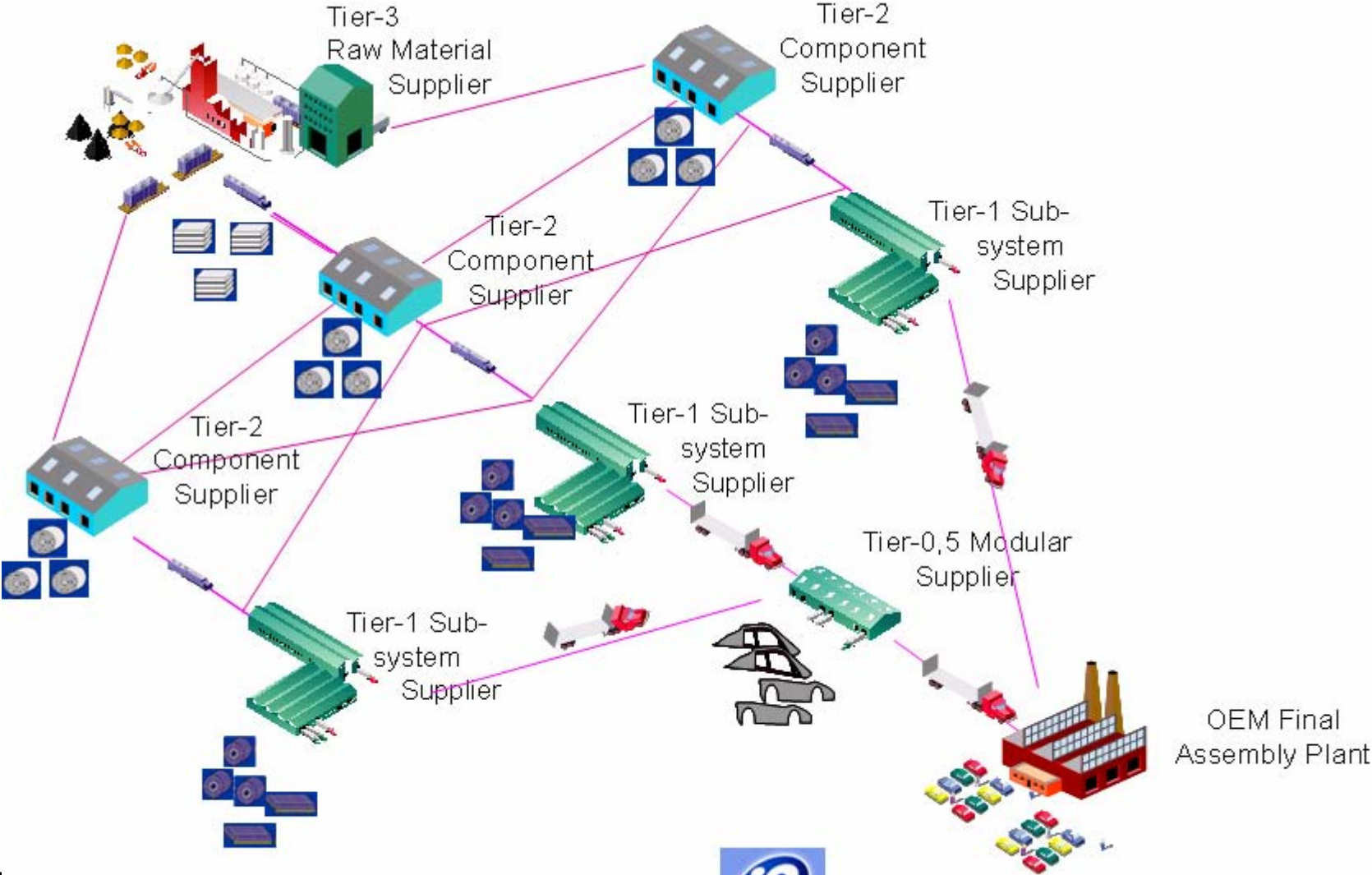
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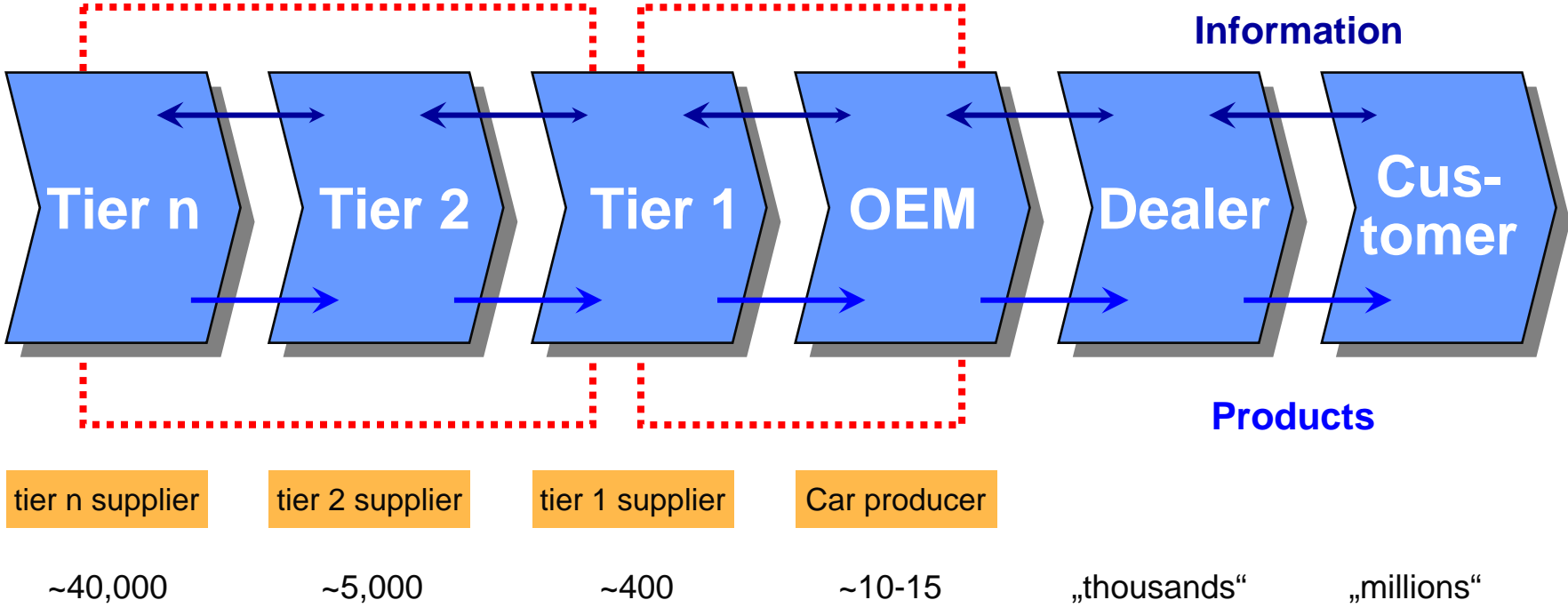
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C. Marketplace example: SupplyOn

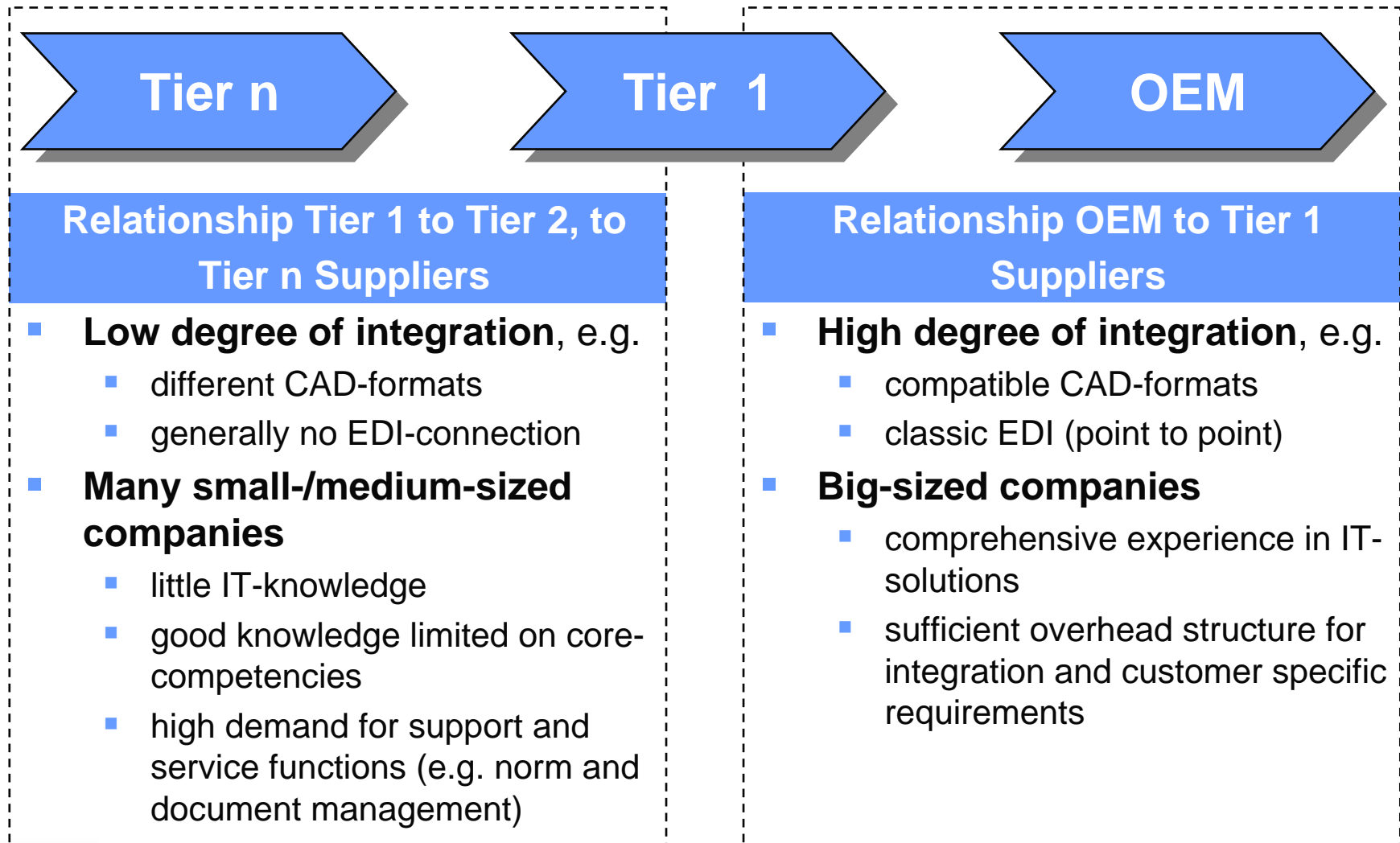
Automotive Supply Chain Network



Industry Structure



OEM versus Supplier Marketplace



Changes in the Automotive Business and Customer Orientation

B. Auto industry
1. Current situation
2. e-Business

Product

- Short innovation cycles
- Increasing cost pressure
- Combined intelligent products

Sales

- Individual product configuration by consumer
- Production on demand (BTO)

Globalization

- Global manufacturing/development networks
- Increasing competition
- Worldwide standardization of invisible components

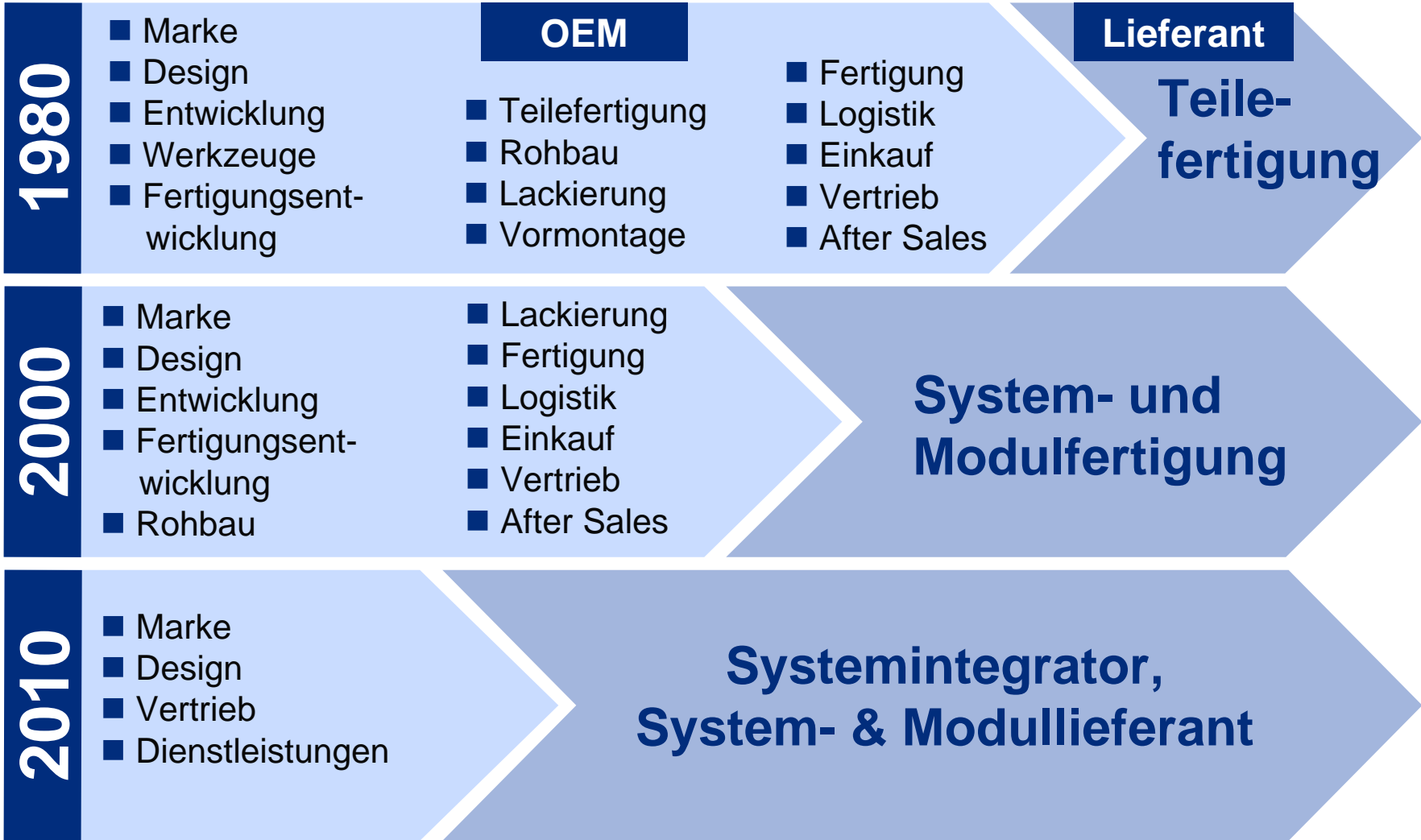
Platform Strategy

- Coverage of niche markets
- Short time-to-market

Outsourcing

- Logistic and engineering services
- Module supply
- Just-in-Time, Just-in-Sequence supply

Trends in the Automotive Industry: 1980 - 2010



Systematic shifting of production to suppliers

Industry Structure: Dominance of Demand-side

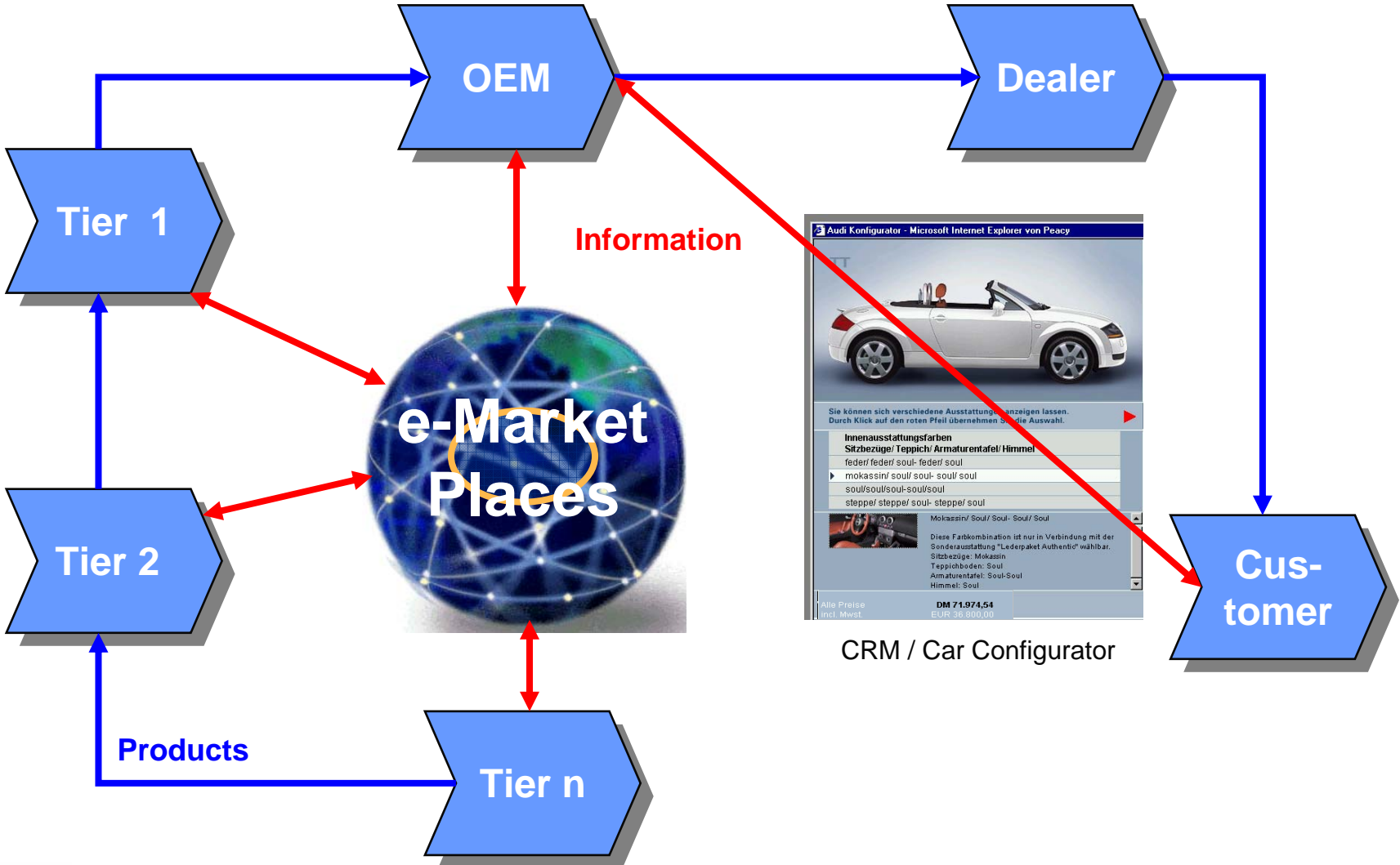
OEMs and T-1 suppliers have strong bargaining power over their suppliers:

- high degree of market concentration (limited number of OEMs),
- high proportion of procurement costs to total costs (→ price sensitivity),
- high degree of (intermediate) product standardization (→ substitution of products and suppliers),
- high degree of market/price transparency (e.g., cost situation of suppliers),
- authentic threat of backward integration, and
- low switching costs for substituting a supplier.

E-Activities of OEMs

- Every car manufacturer had started or announced activities in e-Business by 1999 / 2000.
- Automotive Supply Chain: Flexible, fast, worldwide operating full service suppliers with deep integration into customers' processes.
- Web based applications as a very competitive means to speed up, integrate and link the business partners in the Automotive Supply Chain.

OEM's Vision: e-Supply Chain



B2B Hype in the Automotive Industry vs. „Realistic View“

B. Auto industry

1. Current situation

2. e-Business

However, from our viewpoint, a lot of this hype about B2B is simply too optimistic...

B2B is a revolution to the automotive industry?

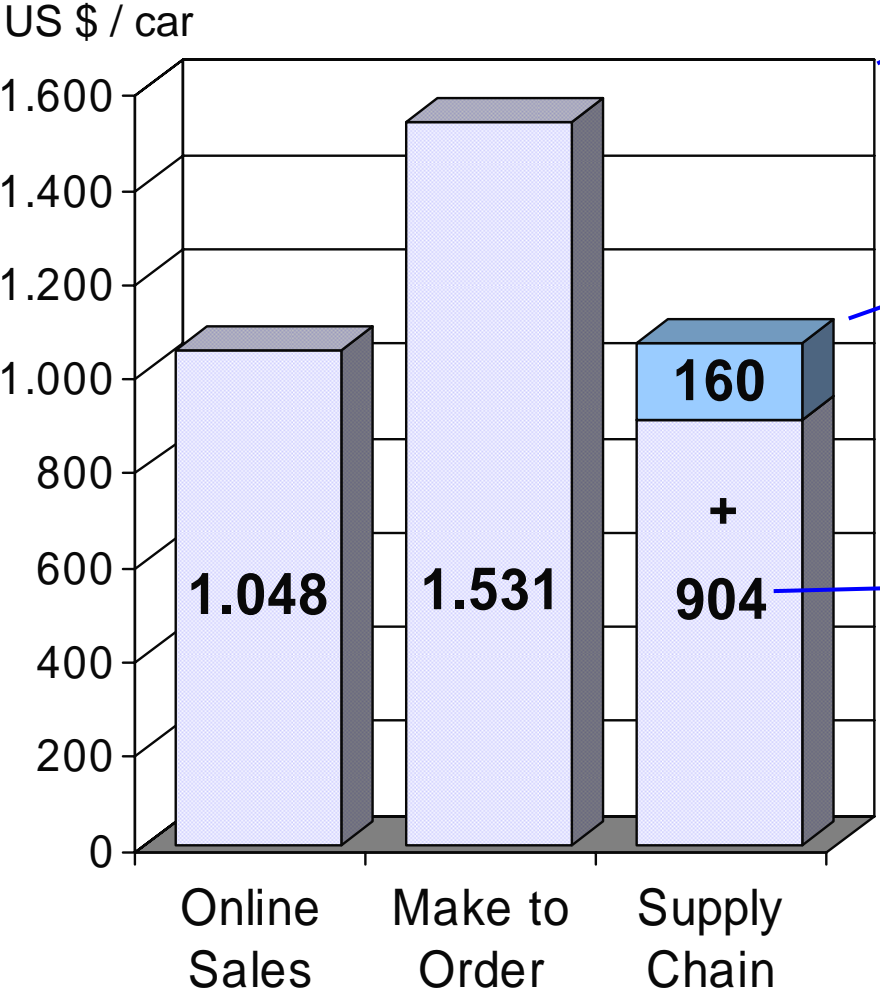
B2B will save US\$ 3,700 per vehicle in North America?

OTD will dominate the North American automotive industry and rebates will become obsolete?

Suppliers will be losers in the B2B space?

Source: Roland Berger & Partners; Deutsche Banc Alex.Brown

Estimated Cost Savings (Goldman Sachs)



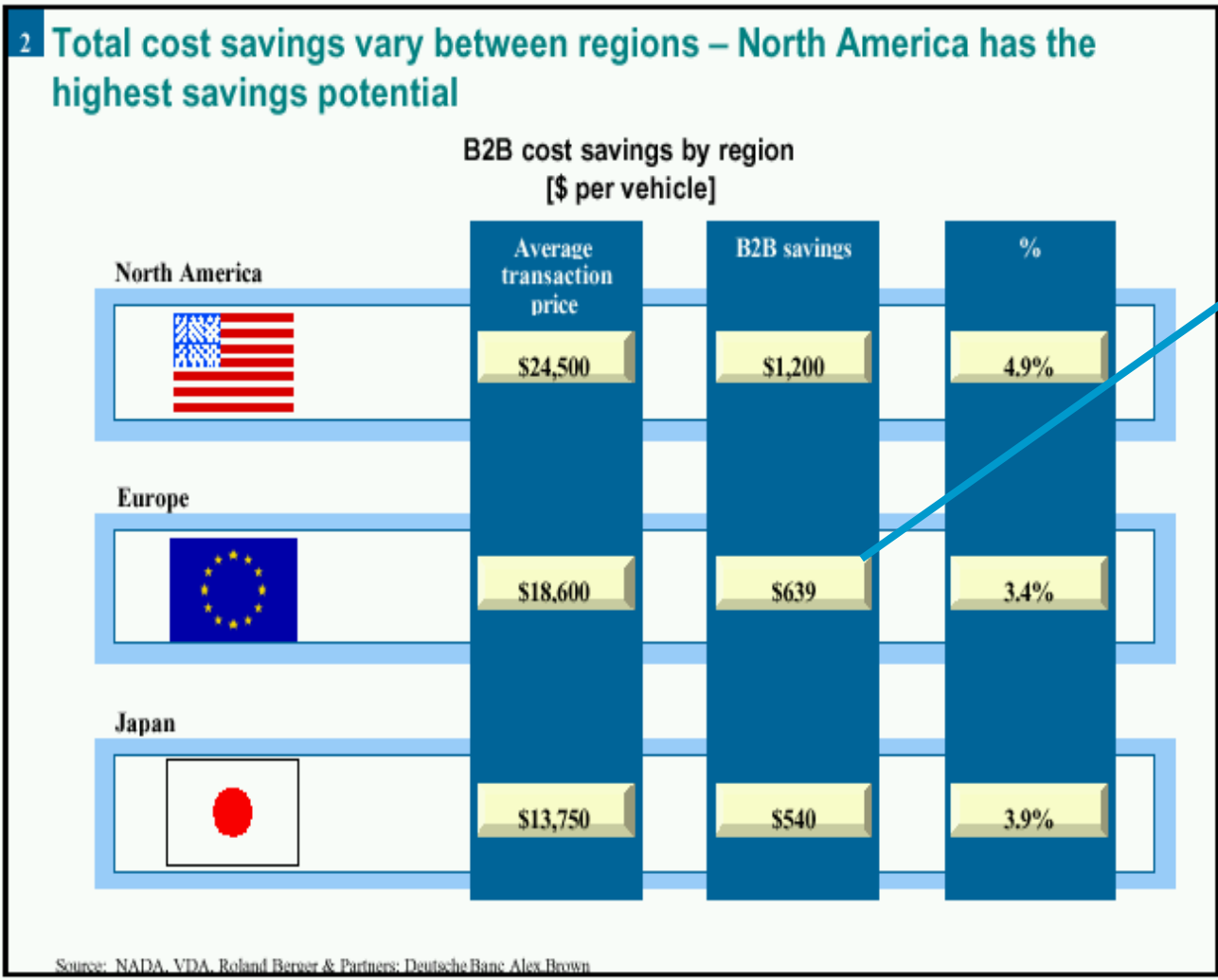
■ Total Savings Potential: **US \$ 3.643** for a 26.000 US \$ vehicle (14%).

■ Effect of OEM Purchasing Price-Level: **US \$ 160** (4,4% of Total Savings Potential)
 → **Small contribution!**

→ **Big value** comes from **reduction of transaction costs!**

Estimated Cost Savings (Roland Berger/Deutsche Bank)

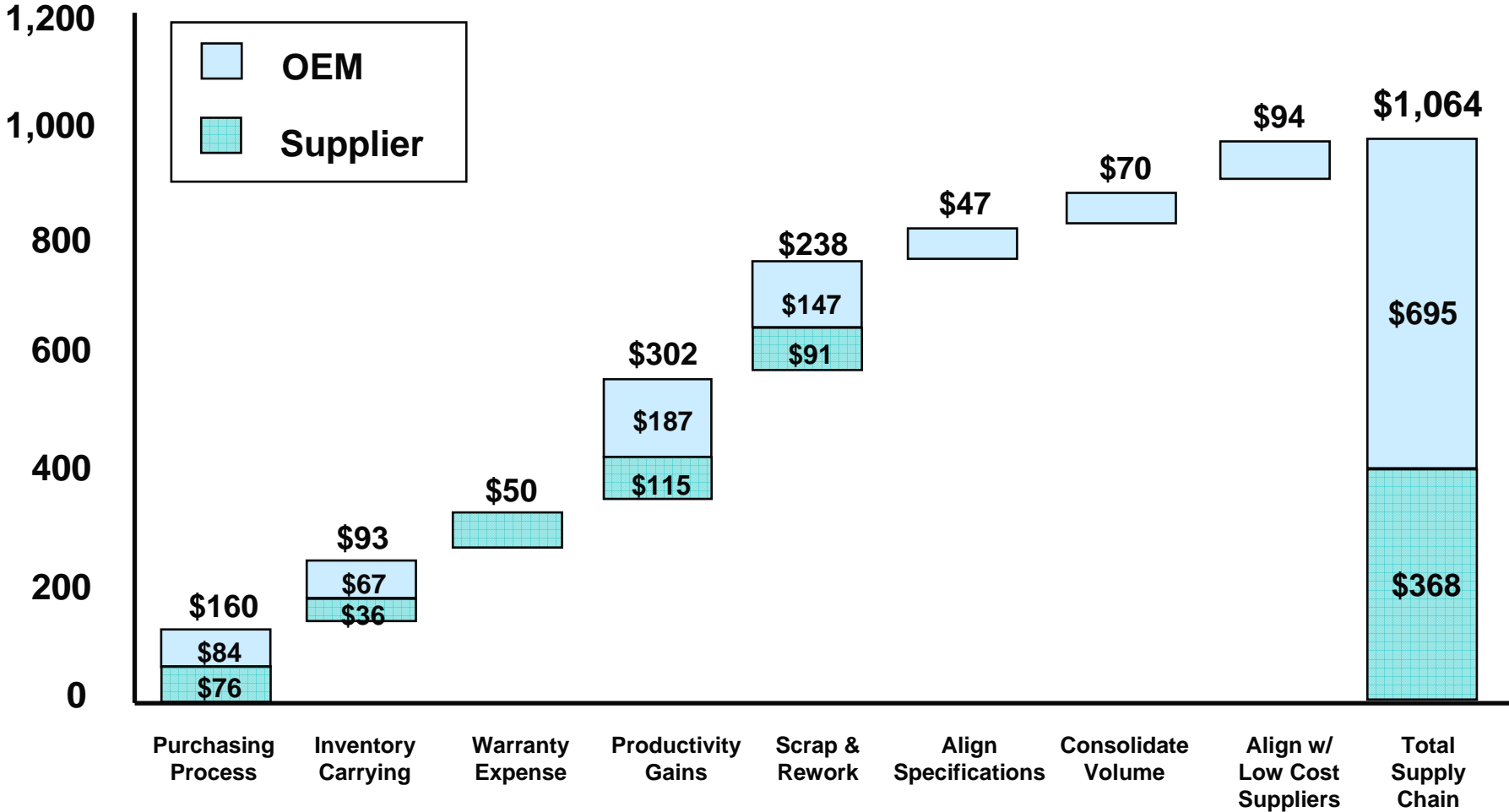
- B. Auto industry
- 1. Current situation
- 2. e-Business



purchasing cost savings: 25 %

Supply Chain Cost Savings (Goldman Sachs)

(Dollars per Vehicle)

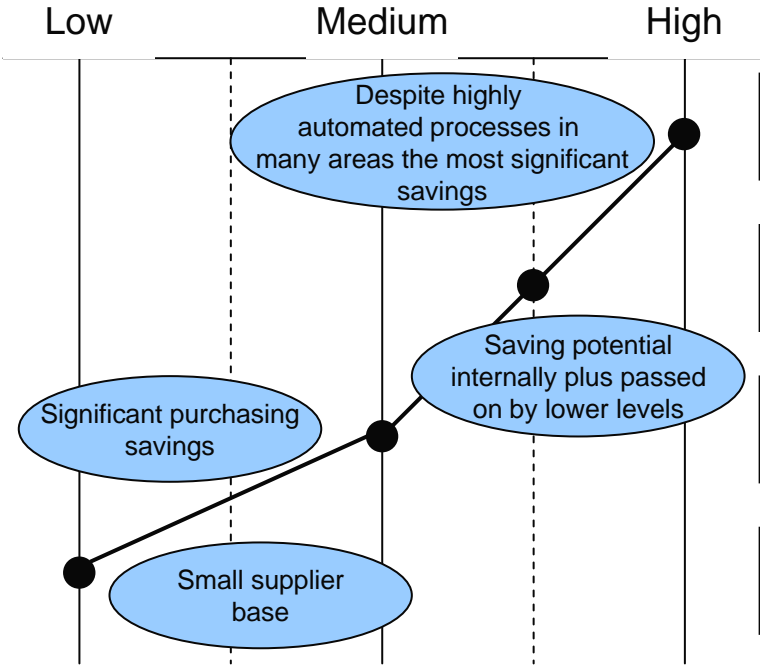


Source: GS Equity Research

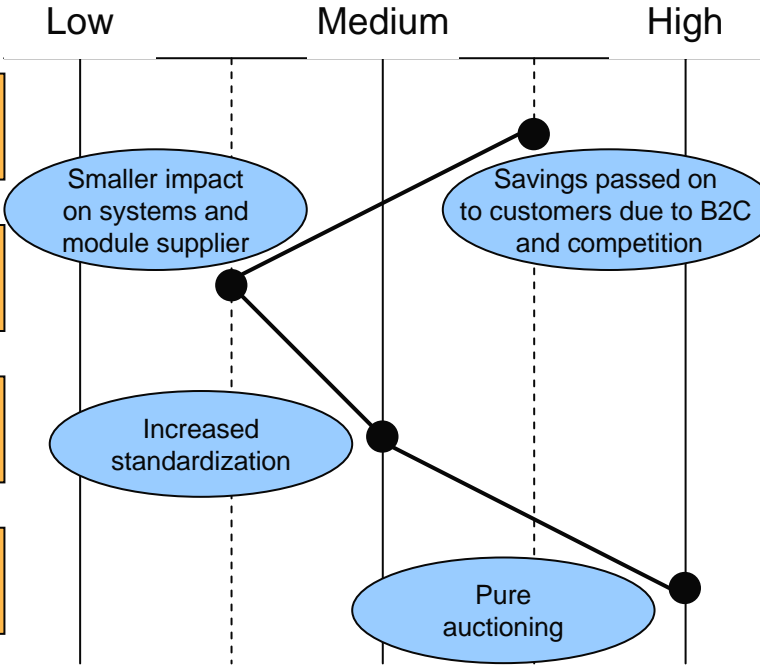
Companies Opportunities/ Threats	OEM	Tier-1 supplier	Tier-2 to 4 supplier	Dealer
Opportunities	<ul style="list-style-type: none"> ▪ Improved efficiency ▪ Considering the huge buying power of OEMs, most of the savings along the chain will probably flow to OEMs ▪ Additional profits generated by OEM-owned exchanges via transaction fees <p>→ Improved profitability</p>	<ul style="list-style-type: none"> ▪ Improved efficiency ▪ Stronger position towards other suppliers due to increased supply chain management responsibilities ▪ Increasing involvement into engineering activities <p>→ New growth opportunities</p>	<ul style="list-style-type: none"> ▪ Improved efficiency ▪ Access to a broader customer base 	<ul style="list-style-type: none"> ▪ Improved efficiency through reduced dealer stock ▪ Better fit of stocked vehicles to market demand
Threats	<ul style="list-style-type: none"> ▪ Increasing price pressure in the different vehicle markets 	<ul style="list-style-type: none"> ▪ Increasing price pressure 	<ul style="list-style-type: none"> ▪ Decreasing margins for commodities ▪ New competencies required (advanced collaborative planning and scheduling...) ▪ Increased flexibility of the manufacturing system required ▪ Further reduction of the supply base <p>→ Increasing consolidation pressure</p>	<ul style="list-style-type: none"> ▪ Increasing control of end user by OEM ▪ More direct sales by OEMs via B2C ▪ Increasing importance of internet portals <p>→ Decreasing sales volume and control of own local market</p>

E-Business: Winners and Losers

Process improvements through B2B



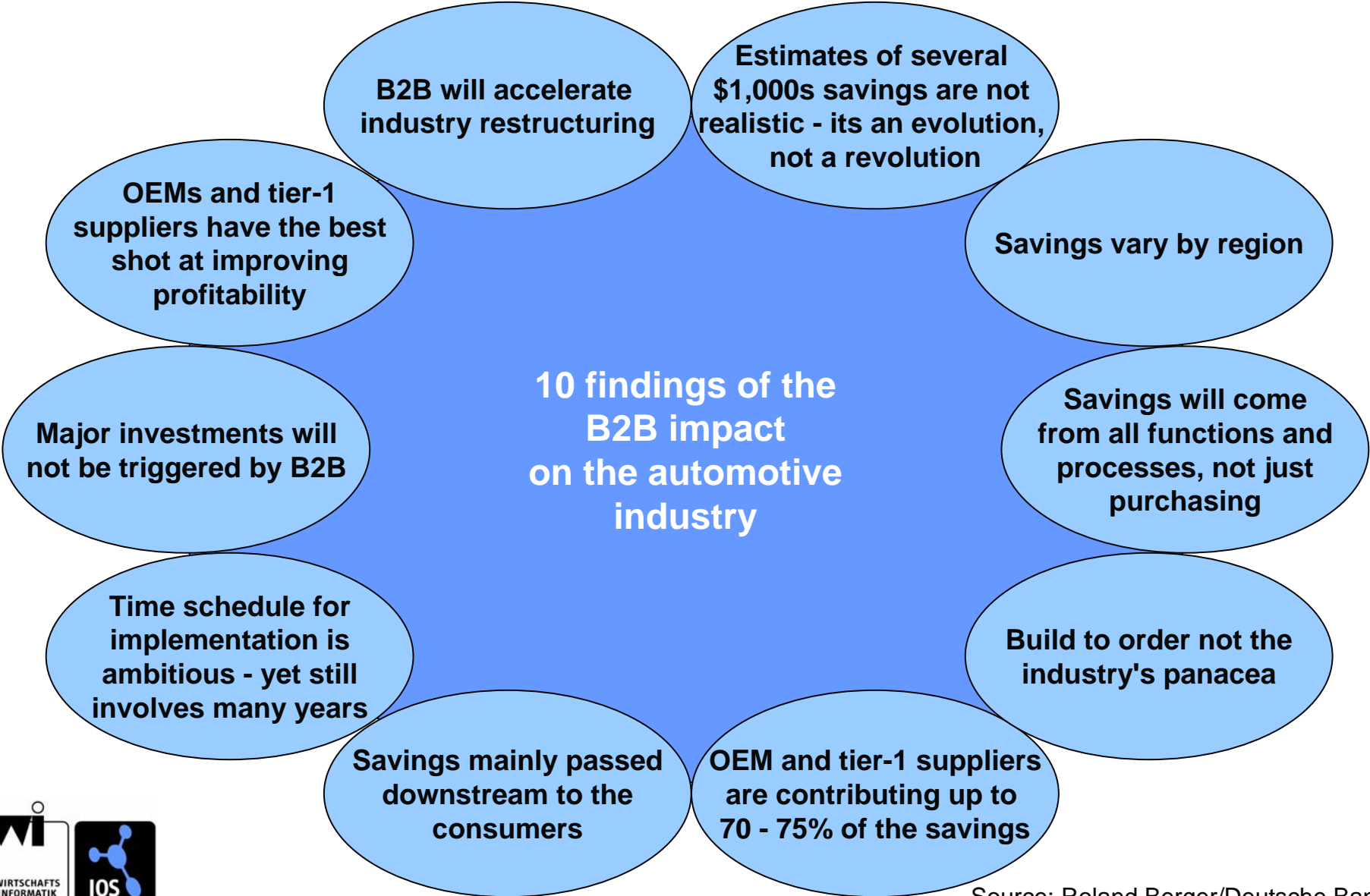
Price pressure through B2B



- OEM**
- Tier 1**
- Tier 2**
(engineered components)
- Tier 2 to 4**
(commodities)

Source: Roland Berger/Deutsche Bank

E-Business Findings



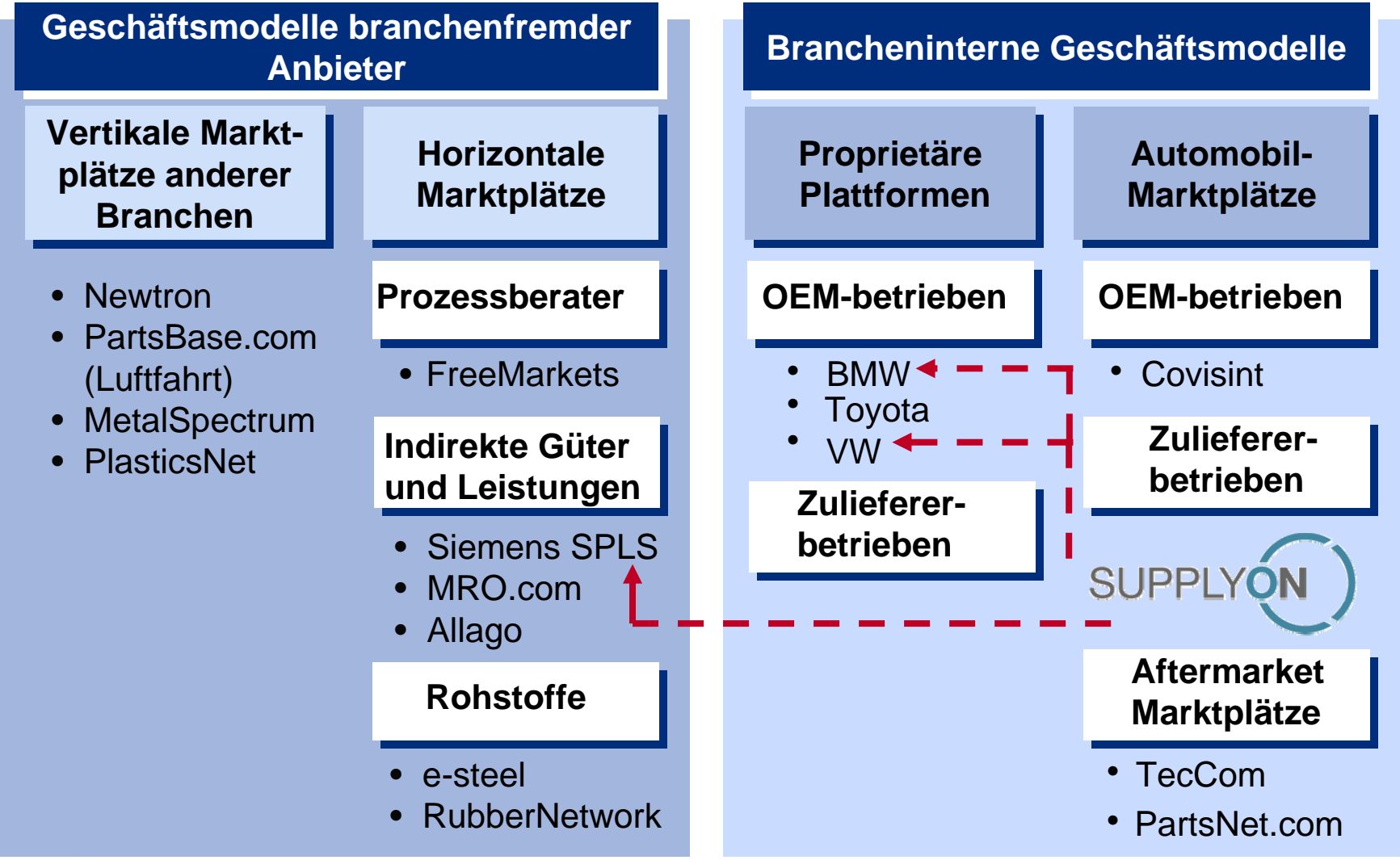
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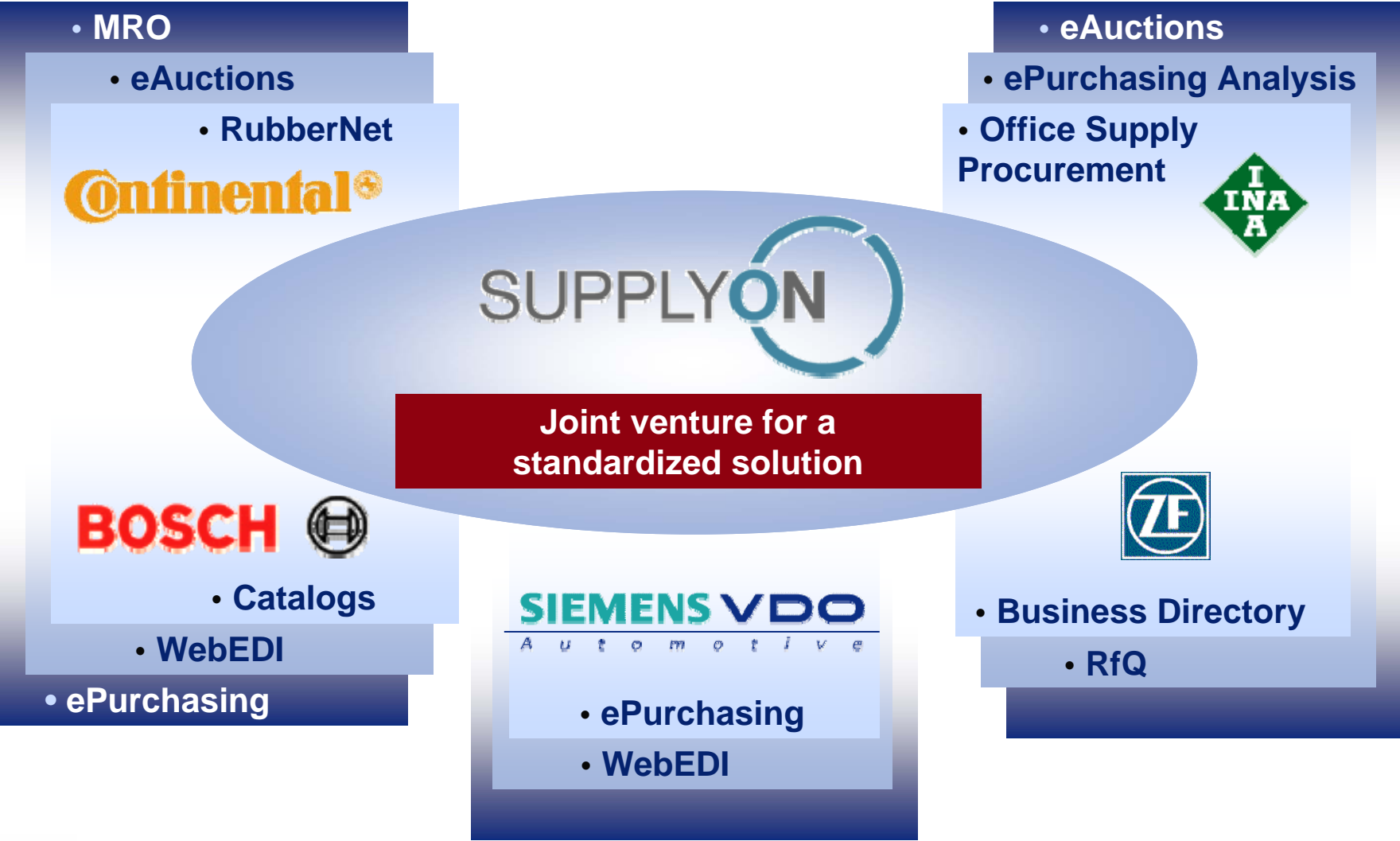
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EMs in the Automotive Industry



Motives for Marketplace Formation



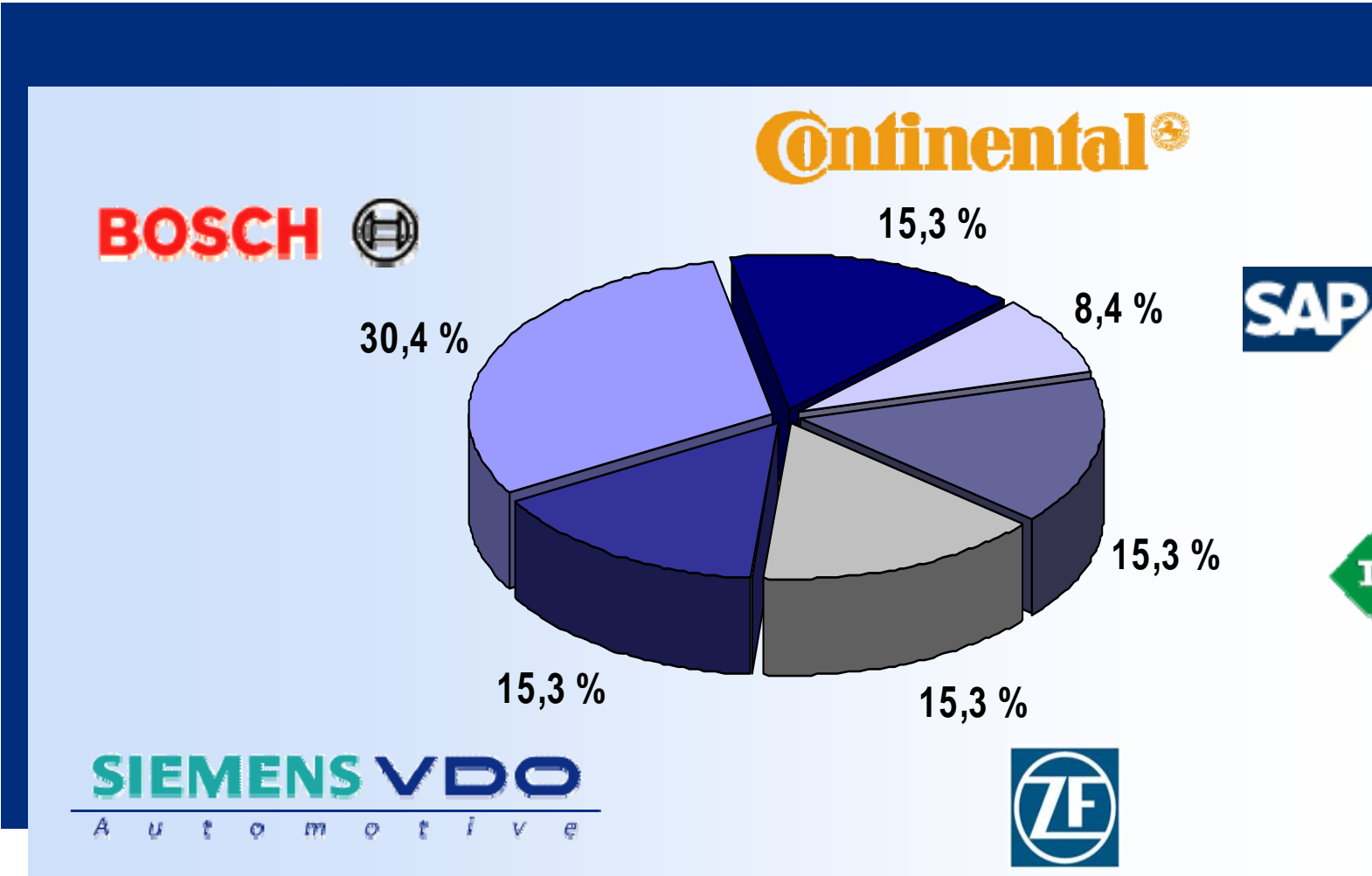
Facts and Figures



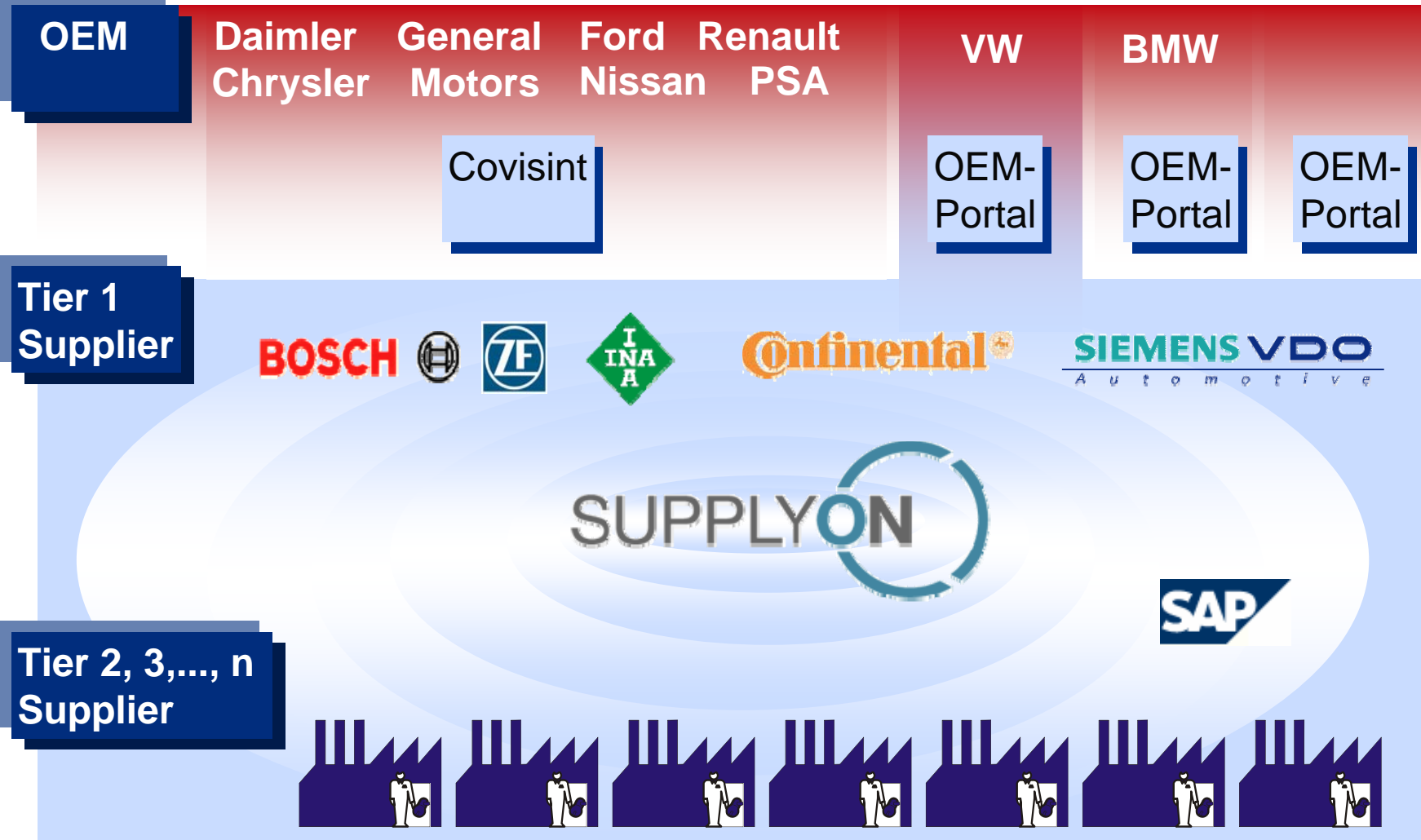
- **Founded:** Summer 2000
- **Employees:** 65
- **Participating companies:** 4.700*
- **Location:**
 - Headquarter:** SupplyOn AG, Hallbergmoos
 - Other locations:** SupplyOn North America Inc. in Detroit/USA
- **Partners:** France, Spain, Italy, Czech Republic, UK

* February 2004

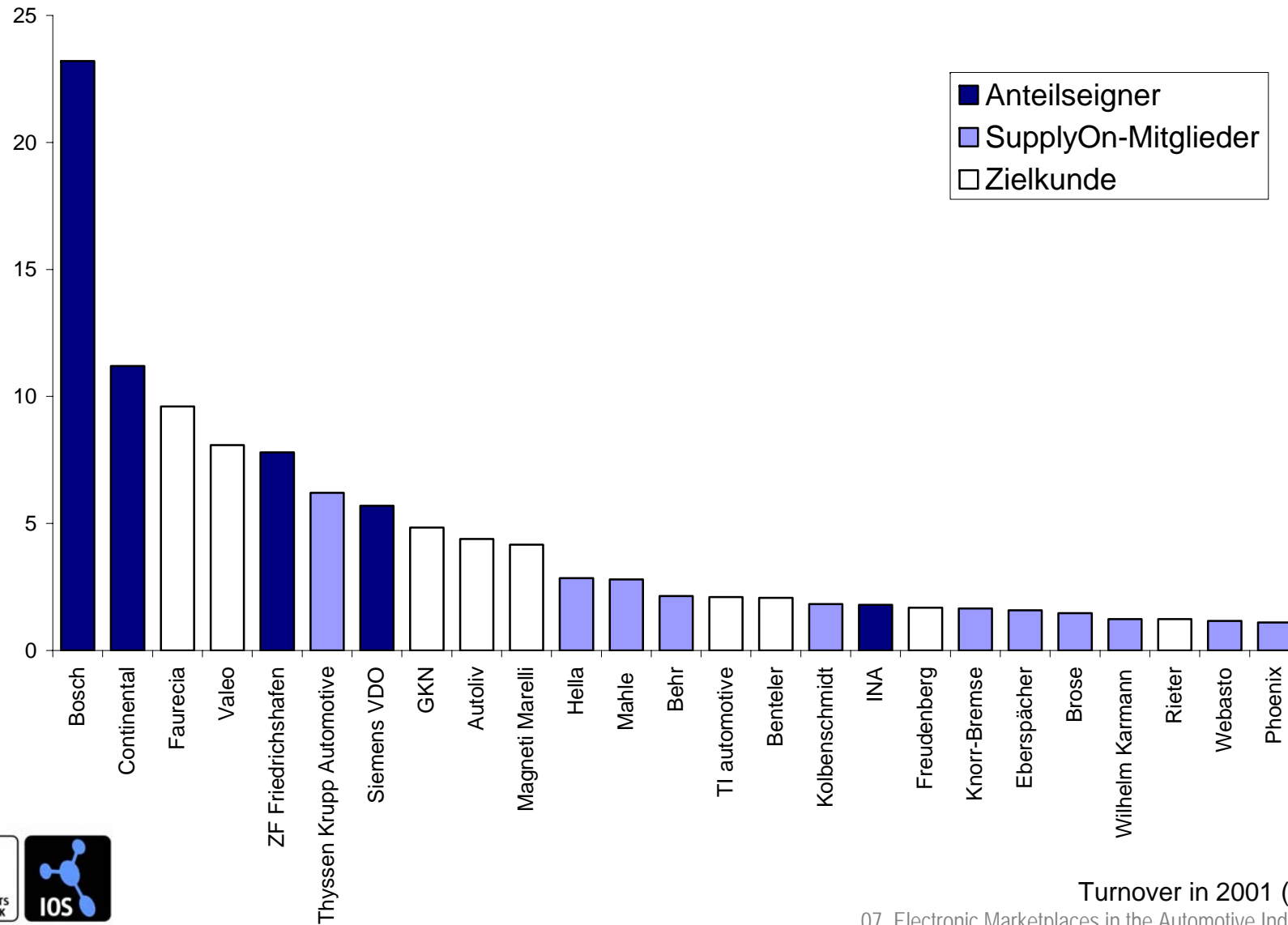
Shareholder Structure of SupplyOn AG



Supplier Platform: SupplyOn



European Automotive Supplier Industry



SupplyOn: Customer Development



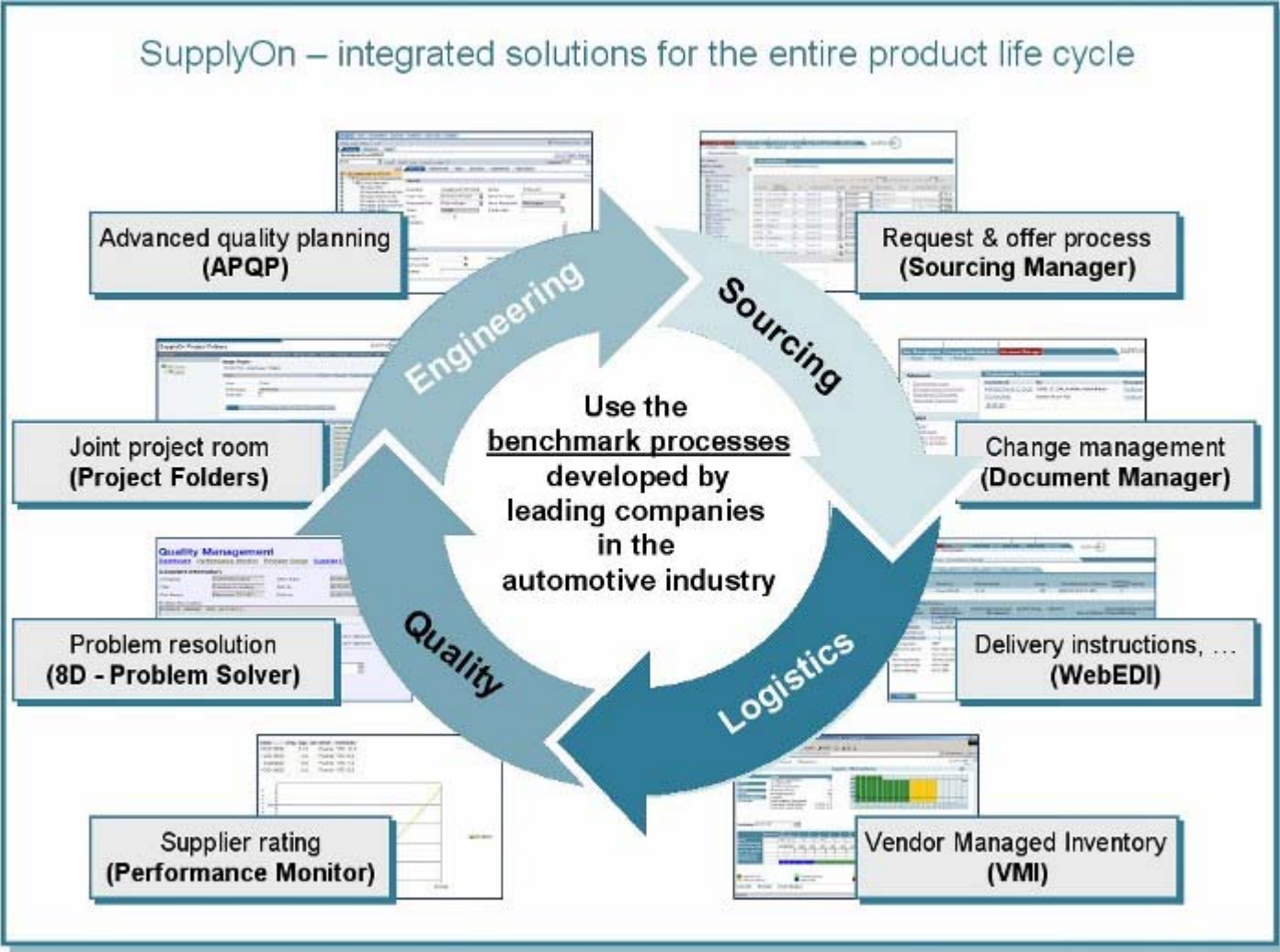
SupplyOn: Customer Development

- Sourcing
- Supply Chain Management
- Document Manager

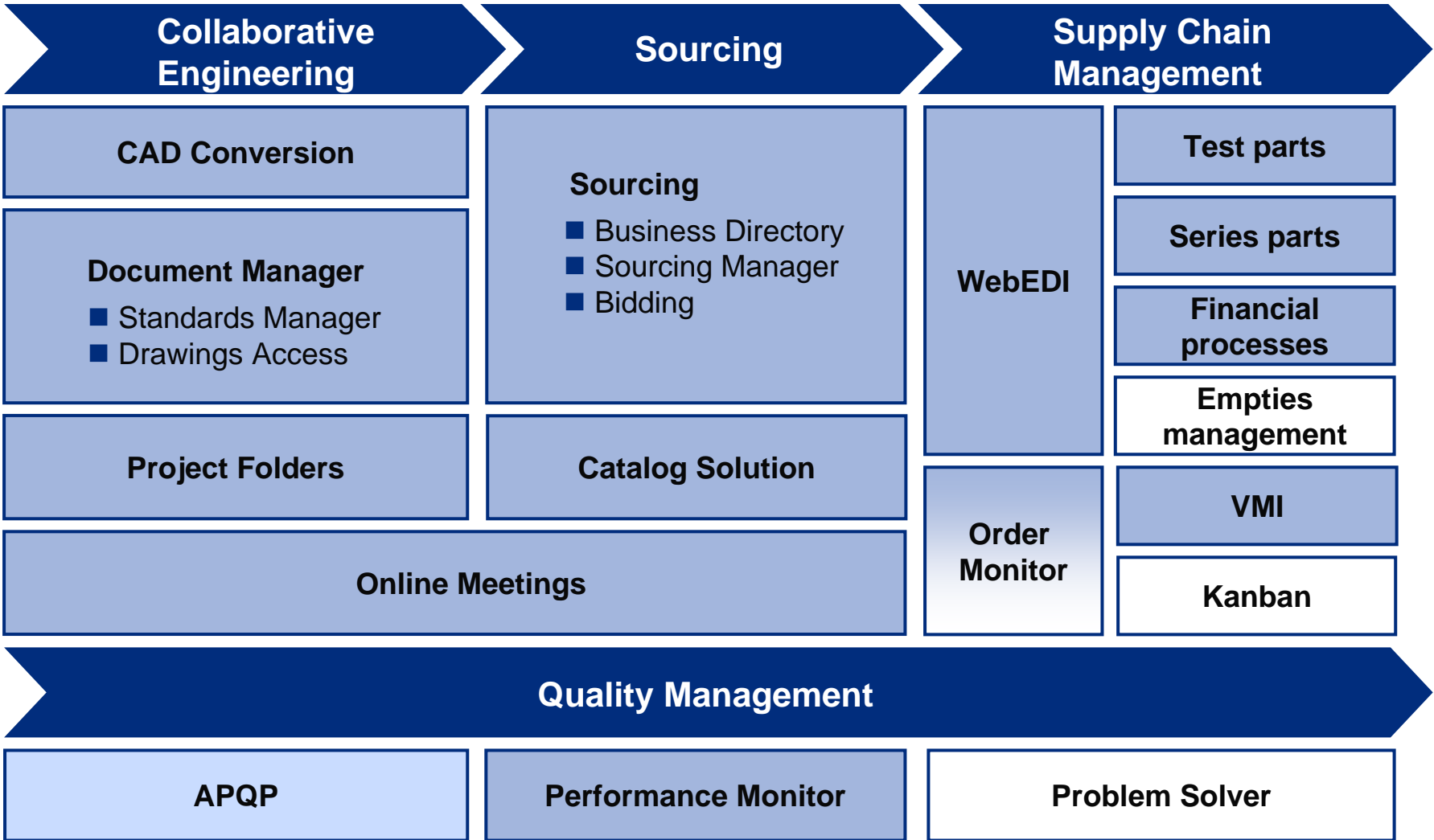
SupplyOn: Status Quo

- weak economic situation and low IT budgets
- automotive suppliers restrain strategic investments in e-Business
- unanticipated complexity of technical implementation causes several delays
- low perceivable value for users in start-up phase
- market development and customer acquisition behind expectations
- satisfactory liquidity position due to reduction of costs and selective application of funds

Vision: Integrated Supplier Solution



Reality: SupplyOn Marketplace Functions



SupplyOn – A hands-on example



Conclusion

- SupplyOn is an example of a mixed-mode marketplace
- More successful than rival Covisint
- Cooperation with other marketplaces
- From an OEM perspective: neutral marketplace
- Acceptance on supply side?
- Long-term success?

Contact details

Marcel Gogolin
marcel.gogolin@wi-ios.de
+49 251 83-38122
Room no 202

Universität Münster
Institut für Wirtschaftsinformatik

Lehrstuhl für Wirtschaftsinformatik und
Interorganisationssysteme (IOS)
Prof. Dr. Stefan Klein
Leonardo-Campus 3
D-48149 Münster

Tel.: +49 251 83-38110
Fax: +49 251 83-38119

<http://www.wi-ios.de>

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