

Consortium-Based B2B e-Marketplaces – A Case Study in the Automotive Industry

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Abstract

‘Old economy’ companies are increasingly setting up marketplaces for procurement of supplies, either alone or as part of a consortium of competitors within an industry. In this paper we develop a framework for governance structures of electronic markets and contrast different structures by using a case study in the automotive industry. Focus is General Motors’ decision to join the industry market place Covisint and Volkswagen’s decision to build an individual solution. Building on multiple theories from inter-organizational relationship formation we analyze the advantages and disadvantages of the private exchange vs. the consortium-based exchange and illustrate these within our case, working towards a comprehensive contingency framework.

1. Introduction

The emergence of ‘old economy’ consortium-based electronic markets has recently gained considerable attention. In 2000 a total of 66 newly founded consortia in 18 different industries have been counted [WALRAVENS and CHUNG 2000]. Two of the most prominent examples are Covisint – founded by General Motors, Ford, and DaimlerChrysler – in the automotive industry and Transora in the consumer goods industry, backed by more than 50 leading companies including Nestlé, Kellogg, and Coca-Cola. After the traditional one-to-one EDI-based systems started giving way to third party internet startup marketplaces ([KALAKOTA and ROBINSON 2001, 316] refer to these as ‘first generation marketplaces’), we currently see large old economy companies establishing their own marketplaces to deal with multiple suppliers.

While research has paid considerable attention to electronic markets in general (e.g. [BAKOS 1998, GROVER and RAMANLAL 1999]) it does not explicitly address the corporate structure and ownership of electronic markets. In this paper we contrast the consortium-based approach to private (single buyer) exchanges.

The research is motivated by the current conflicting ideas and uncertainty about the best governance structure. For instance, while General Motors, Ford, and DaimlerChrysler take a joint consortium approach, Volkswagen as well as BMW have started to build private exchange platforms. Taking the automotive industry as an example, our aim is to explore the underlying forces driving these different governance structures.

Our paper starts with a brief introduction to vertical buy-side electronic markets and develops a framework for the governance structure of electronic markets. In the next part we concentrate on exchange platforms in the automotive industry and describe General Motors's approach with Covisint and Volkswagen's private solution. Building on multiple theories from inter-organizational relationship formation we analyze the advantages and disadvantages of the private exchange vs. the consortium-based exchange and illustrate them with our case. In particular we examine transaction costs economics, the resource dependence view, stakeholder theory, an organizational learning perspective, institutional theory, and a strategic choice position. In our conclusion we summarize the insights gained from the frameworks and discuss their limitations.

2. Electronic Markets

Vertical Buy-Side Electronic Markets

We define an electronic market (e-market) as an inter-organizational information system that fosters market based exchanges between agents in all transaction phases [BAKOS 1997]. A horizontal market addresses a specific function (e.g. human resources, office supplies) and serves a wide range of industries while a vertical market focuses on a wide range of functionalities in a specific industry such as chemicals, steel or automotive. A buy-side electronic market is focused on procurement, supply chain management, and development, while a sell-side market is focused on the demand chain, i.e. the processes by which the goods reach the customer [ARCHER and GEBAUER 2000]. This paper concentrates on vertical buy-side electronic markets.

While early e-markets focused on the transaction itself, more and more additional services are added to these basic functions. Based on the crucial value chain processes on the buy-side we separate the functionality of e-markets into three areas:

- *E-Procurement* refers to all processes concerned with the purchasing of goods and services over the Internet [KALAKOTA and ROBINSON 2001, 314]. E-Procurement takes a commerce or transaction perspective. Economies of scale

providing liquidity in an electronic market are one of the major success factors.

- *Supply Chain Management* integrates all activities associated with the flow and transformation of goods from the raw materials stage to the end user [HANDFIELD and NICHOLS 1998, 2]. It highlights the coordination perspective between all members of the value chain.
- *E-Development* provides software tools to facilitate collaborative product design of complex components and modules [HELPER and MACDUFIE 2000]. It highlights the collaboration between a company and its suppliers in innovation processes. Speed and protection of knowledge assets are key issues.

The complexity to support these processes by sophisticated tools increases from e-procurement to e-development. Furthermore the processes are not completely independent as for example engineering and procurement will need to work together towards the best overall combination of low prices and customer demand.

Governance Structures of e-Markets

For a classification of the ownership structure of an electronic market we consider two dimensions to be of particular importance:

- *The role of the owners*: The owner of the market can be an active market participant (i.e. buyer or seller) or an independent third party acting as an intermediary. This dimension is an external perspective and has significant impact on the goals and therefore the strategy of the owners towards the other parties in the market.
- *The competitive relation of the owners*: The companies owning and operating the market can be direct competitors outside of this venture or work in different fields and are therefore not competing. This dimension takes an internal perspective and influences the behavior of the market owners towards each other.

This taxonomy results in four different ownership structures for electronic markets:

- *Private exchanges* are owned and operated by a single company or a group of non-competing companies. These companies are also active buyers or sellers in the market.
- A *third-party exchange* is owned by a group of non-competing companies or a single company that is not considered to be a trading partner, often a start-up company.
- In *consortia-led exchanges* the ownership is shared between companies that compete outside of this electronic market.
- A *meta market* is formed by a group of independent market providers who collaborate and exchange requests and offers by interconnecting their market places to increase liquidity.

Figure 1 shows the different approaches and gives examples following the respective governance structure in italics.

Not Competing	Private <i>General Electric Trading Process Network</i>	Third Party <i>FreeMarkets</i>
Competitors	Consortium <i>Transora</i>	Meta Markets <i>TradeDynamics</i>
	Market Participant	Independent

Figure 1: Taxonomy of electronic market ownership structures

Our study focuses on the left-hand side of this matrix, exploring why companies deciding to join or start a marketplace choose either a private or consortium-based approach.

Electronic Markets in the Automotive Industry

The automotive industry is one of the largest and most complex in the world and many activities concerning electronic markets can be observed. Figure 2 provides an overview of some electronic markets in the automotive industry highlighting their respective service focus (i.e. e-procurement, supply chain management or e-development) as well as their governance model.

Name	Main Companies	Announcement	Market Focus	Services Focus ¹
Private				
Auto-Xchange ²	Ford	November 1999	New Car Components	P
TradeXchange ²	GM	November 1999	New Car Components	P
iStarXchange	Toyota	February 2000	New Parts Aftermarket	P, SCM
RubberNetwork	Continental, Goodyear, Michelin et al.	April 2000	Tires	P
Volkswagen Exchange	Volkswagen	April 2000	New Components	P, SCM, D
Consortia				
Covisint	GM, Ford, DaimlerChrysler	February 2000	New Car Components	P, SCM, D
SupplyOn	Bosch, Continental, ZF Friedrichshafen et al.	June 2000	New Car Components	P, SCM
Third Parties				
ChoiceParts	ADP, CCC, Reynolds & Reynolds	February 2000	New Parts Aftermarket	P

¹ P = E-Procurement, SCM = Supply Chain Management, D = E-Development

² Now part of Covisint.

Figure 2: Electronic market initiatives in the automotive industry

General Motors' vs. Volkswagen's Approach to e-Markets

General Motors

Founded in 1908, General Motors (GM) has grown into the world's largest automotive corporation. The company employs more than 388,000 people and partners with over 30,000 supplier companies worldwide.

GM started to use the Internet for procurement activities in 1998 by running some purchases through the independent horizontal exchange FreeMarkets. For FreeMarkets the GM purchasing volume represented a substantial part of its revenues in 1998 and 1999 (19% and 15% respectively) and helped to drive the independent exchange's market capitalization to a high of US\$ 10 billion in January 2000. In November 1999 GM announced the creation of its own private procurement platform called GM TradeXchange.

GM's competitor Ford announced the formation of Auto-Xchange as a central electronic market for its procurement activities in November 1999 as well. Both companies started negotiations to consolidate their individual exchange initiatives into one industry-wide trading exchange. In February 2000 they announced that rather than pursue separate, private exchange initiatives they would join forces to create the consortium-based market Covisint and include DaimlerChrysler as a third manufacturer. In April 2000 Nissan and Renault stated their intention to join the partnership.

Covisint

The aggregated purchasing volume of the three founders of Covisint is about US\$ 240 billion. The Covisint concept is planned to be the central exchange not only for the participating manufacturers but also for all other members of the supply chain. If all suppliers use the exchange for their own purchasing a volume of US\$ 500 to US\$ 800 billion is calculated. The venture is expected to have annual revenue, from transaction fees, advertising and services, of at least US\$3 billion [MENZEL 2000].

Covisint intends to cover the three functional areas of vertical buy-side e-markets identified above:

- *E-Procurement:* Covisint plans to create a global marketplace in which industry participants can buy and sell a wide range of both production and non-production material and services. Auctions, catalogues, requests for quotes as well as a management tool for idle assets will be included.
- *Supply Chain Management:* Covisint will allow individual organizations to observe the current and future status of their respective supply chains' material flows, inventory levels, and capacity constraints. Trading partners will communicate and develop production and shipment schedules using standardized information and common systems.

- *E-Development*: A virtual product workspace will allow real time collaboration and integration among various partners via the Internet in a secure environment. These solutions will help to synchronize a company's product development community around a common set of objectives, aiming at a faster time-to-market and better product-innovation capabilities.

Most applications are presently in the design phase. Covisint stresses that its applications will not replace existing solutions – such as ERP systems – in the participating companies but merely provide a common interface.

Volkswagen

The Volkswagen Group is the fourth largest car manufacturer in the world. It employs about 300,000 people and partners with over 10,000 supplier companies worldwide.

The purchasing volume of the Volkswagen Group is about US\$ 42 billion. In recent years Volkswagen built private internet-based solutions for the better integration of their supplies. The Volkswagen SupplyNet (www.vw-zulieferer.de) and the Electronic Supplier Link (esl.Volkswagen.de) are two examples. The Electronic Supplier Link currently connects about 3,000 suppliers and offers a simple internet-based data exchange.

Volkswagen did not join Covisint but announced a strategic partnership with IBM, i2, and Ariba to build a private online marketplace in April 2000. The main reasons cited were that Volkswagen focuses on the efficiency of its supply chain instead of price reduction [MENZEL 2000]. Furthermore it raised some doubts on information security as well as regulatory issues [REINKING 2000].

Alone or Together? A Multi-Perspective Analysis

Several theoretical frameworks have been used to explain the formation of inter-organizational relationships (see e.g. [GRANDONI and SODA 1995, BARRINGER and HARRISON 2000]). [KUMAR et al. 1998] show in their analysis of the adoption of inter-organizational information systems, that the use of a single theoretical perspective to explain observed phenomena falls short to capture the complexity involved in the formation of relationships. There is often a portfolio of reasons for alliance formation or for staying away from an alliance. In particular, following KUMAR et al., we argue that only a combination of technical-economic as well as socio-political perspectives can help to understand complex inter-organizational systems.

Electronic market research has concentrated on the cost aspect so far (e.g. [BAKOS 1998]). As we will show, this perspective falls short to explain the private vs. the consortium-based approach to electronic markets. In the following sections we investigate and combine six theoretical paradigms as identified by [BARRINGER and HARRISON 2000] that span from economic to behavioral: Transaction costs economics, the resource dependence view, stakeholder theory, an organizational

learning perspective, institutional theory, and a strategic choice position are used. We apply these theories to the ownership structure of electronic markets in general and illustrate the viewpoints with details from the automotive industry using the cases of General Motors and Volkswagen.

Transaction Cost Economics

Transaction cost economics [WILLIAMSON 1975] offers an economic perspective on organizational relations. It contrasts organizational alternatives by comparing their respective sum of transaction costs and production costs [JARILLO 1988]. The existence of inter-organizational relationships such as consortia expands the “classical” make or buy decision to make, buy or partner.

As a consortium-based e-market sets a standard for communication and coordination between participants that gets wider acceptance in the industry due to the support of leading companies it can be expected that the transaction costs will be lower than in a private e-market. Third-party start-ups and private markets may have to convince initial members to join when benefits are lower. The benefits of one centralized exchange will accrue more quickly than building several similar exchanges in the participating companies because development and operating costs (e.g. for catalog management) can be shared between participants. Also market participants have reduced infrastructure costs since they only build one connection to the exchange instead of several interfaces to all the exchanges.

A consideration of production costs shows that the process costs in a private solution will probably be lower due to an easier and better technical integration into the internal IT systems of the buyer. Another production cost related question is the price of the acquired products and services. A consortium-based e-marketplace can start with liquidity introduced by its owners. The buying power of the consortium-partners can help to receive volume rebates in procurement.

Applying these arguments to the automotive industry we have to consider the industry structure. There is only a small number of large automotive manufacturers each having an massive buying power. First tier suppliers are more or less forced to work with all of them and traditionally have adapted to the technological requirements of the manufacturers. Thus each of the big manufacturers will be able to impose its standards on the suppliers and transaction costs will not make a big difference. Nevertheless the competition between suppliers may lead to smaller margins and thereby to casualties among the suppliers. Both Volkswagen and GM have indicated that they have an interest in long-term relationships to healthy suppliers and that price is therefore not the primary criterion.

Due to regulatory issues consortia of automotive manufacturers will not be allowed to pool their demand for production parts. This will only be possible for indirect maintenance, repair, and operations (MRO) materials. It can however be expected that Volkswagen will be able to achieve similar savings either through other horizontal markets or by inviting participants from outside the industry to join. It is reported that Volkswagen is in talks with Lufthansa to pool demands [DPA 2000].

While we do not have detailed cost related numbers for GM and Volkswagen a general assessment of the potential savings in the automotive value chain in the US and Europe can help to gain some insights. While the absolute saving potential is higher in the US the potential in relation to average new car prices is comparable [ROLAND BERGER STRATEGY CONSULTANTS and DEUTSCHE BANK 2000]. In general American manufacturers can expect higher savings in e-procurement than European manufacturers while savings in other categories are similar. Procurement of MRO products alone represents 17% of the entire saving potential in the US while it is only 14% in Europe. In our opinion this small difference in expected e-procurement advantages is not suitable to explain the different approaches of Volkswagen and GM. The inventory savings are less in Europe, mainly because Europe has a higher degree of built-to-order in the auto industry.

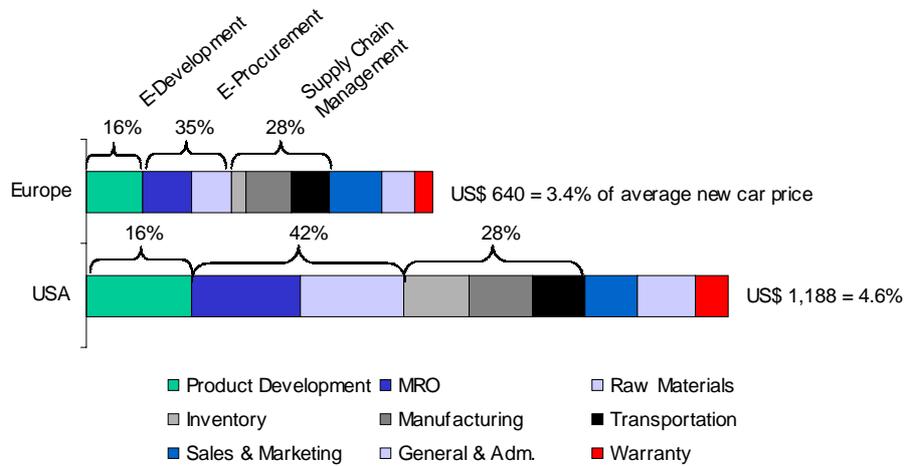


Figure 3: Distribution of expected cost savings per car on functional areas (figures adapted from [ROLAND BERGER STRATEGY CONSULTANTS and DEUTSCHE BANK 2000])

A common standard for B2B e-commerce in the automotive industry would maximize the benefits of all parties involved. Currently, Covisint is the primary candidate for an industry-wide solution. That is why from a purely economic perspective the Volkswagen-led exchange is not beneficial, as the potential cost savings in a network are proportional to the squared number of participants (“Metcalfe’s Law”). But from Volkswagen’s point of view contributing to overall market efficiency does not necessarily have to be beneficial from the perspective of competitive leadership.

Summarizing, the transaction cost perspective does not clearly favour either the private or the consortium-based solution. In general the aggregated buying power of a consortium and the instant market liquidity suggest lower production costs due to

lower costs for supplies. This would suggest utilizing a consortium-based approach if the price aspect of e-procurement is the motivation for founding an electronic market. Antitrust considerations prevent to exercise this advantage in certain industry constellations. On the other hand if more parties are involved in a consortium the transaction costs will be higher for the set-up of the market as well as for coordinating the ongoing business. This suggests a private approach if supply chain management or e-development is of higher importance. Although our case analysis does not show any significant differences in the environment as well as in the motivations of GM and VW they nevertheless chose different alternatives.

Resource Dependence View

The resource dependence view [PFEFFER and SALANCIK 1978] argues that firms partner go get access to critical resources and thereby decrease dependence on other organizations. From another perspective companies could also engage in partnerships to increase the dependence of other organizations on them.

The pooling of resources can be a reason to form an alliance for an electronic market. Primarily partnerships with technology providers can be explained by this argument. They assure access to up-to-date technology and have a positive influence on future product developments. The pooling of complementary skills can help to build the market faster and to capture first-mover advantages.

The resource dependence framework can also explain the partnering with otherwise competing market participants if the combined efforts can produce a product or service that is unique and only imperfectly imitable [BARNEY 1991]. The partners could set up a market with huge buying power and exclusive services to its members and exclude others from the cooperation.

In the automotive industry the knowledge of building and running an electronic market platform is relatively limited for all the manufacturers. They can try to pool their domain expertise but even here the knowledge within the different companies is very similar. The dependency between the different levels of the supply chain is traditionally very high in the automotive industry. Following a consortium-based approach introduces a new dependency between the participating manufacturers.

Covisint explicitly invites all industry participants to join the initiative. Its goal therefore is not to produce a non-imitable and rare service but to foster an industry-wide standard for cooperation. But instead of concentrating on defining standard interfaces – a frequent goal of industry consortia [GRANDONI and SODA 1995] – it also develops applications and offers high level services. While the addition of Renault and Nissan to Covisint can be explained to gain better access to the local European and Asian markets, the cooperation between GM, Ford and DaimlerChrysler can not be explained using this framework.

For Volkswagen the risk of becoming dependent on Covisint partners paired with the partial loss of decision autonomy outweighs possible advantages. This perspective is closely linked to the question of a trustworthy relationship required for a close cooperation. Typically, mutual trust is established slowly, originating in

minor interactions requiring little risk then progressing to major commitments [JIN and ROBEY 1999]. Nevertheless VW signaled the willingness to cooperate on standardization issues.

Covisint can also be seen as a vehicle for collective lobbying [OLIVER 1990] to increase power and pressure on suppliers to adopt policies favorable to the founders. By aggregating more than 50% of the buying power in the industry the Covisint exchange is just too big to be ignored by suppliers. Also suppliers sign up more quickly because there is not too much confusion as to which exchange might win. While Volkswagen supports the idea of an industry-wide standard [REUTERS 2000] it faces the danger of being left behind in the development of an industry-wide platform.

Finally Covisint's founders may have formed the alliance simply because each of them perceived it did not have the necessary resources to gain control of new Internet B2B channels before anyone else does. In the case of GM the formation of Covisint can be seen as a pre-emptive strike against start-up companies, especially its former partner FreeMarkets.

As a result the resource dependence view suggests that companies have to weight the benefits of pooling complementary expertise against the possible dangers of becoming dependent on competitors who are partners in a consortium.

Stakeholder Theory

The stakeholder theory [FREEMAN 1994] states that organizations form to align their own interests with the interests of their stakeholders such as suppliers, shareholders, employees, and customers.

The main stakeholders of an electronic market – besides shareholders and employees – are the buyers, sellers, and the technology providers. As a market can only work with buyers and sellers present, the fair consideration of both interest groups is essential. From a third-party exchange perspective this is an argument to invite sellers and buyers to take a stake in the company. If the owner of the marketplace is also a market participant (buyer or seller) the complementing stakeholders could be invited to join to align interests. In many market places technology providers are bound financially to the success of the exchange in order to increase their commitment.

In the case of the automotive exchanges this would mean to invite sellers, i.e. suppliers to join the alliance. The founding manufacturers own Covisint and only a small minority stake was given to the two major technology providers. It is not planned to extend this to suppliers. Nonetheless it is officially stated that one of the reasons to form Covisint was the request of suppliers to reduce the number of interfaces in the industry. Nevertheless many suppliers are skeptical of win-win promises by the alliance of carmakers. They fear that the exchanges will cut into profit margins or turn their products in commodities. As a reaction several European suppliers have founded their own marketplace (SupplyOn,

www.supplyon.com) and a group of leading American suppliers is also considering starting an own venture [LITTLE 2000].

The addition of other manufacturers to the consortium can only be explained by taking a holistic view at the industry and focusing on Covisint's stated goal to transform the whole automotive industry. The Volkswagen initiative is completely integrated into its other operations. The technology partners receive no equity stake and no other revenue sharing mechanisms are implemented. Not joining Covisint and highlighting the supply chain integration issues may also be explained by Volkswagen's still damaged image with the suppliers that originates from the "Lopez-era" that was characterized by high price pressure and is seen as a mistake within VW today [HENKE 2000]. Volkswagen still has to rebuild trust with its suppliers and a participation in Covisint can be seen as contra productive.

Focusing on shareholder value General Motors realized that the value it brought to the independent company FreeMarkets by increasing its stock value outweighed the value FreeMarkets brought to GM. According to analysts' opinions an initial public offering of Covisint could eventually have a market capitalization of US \$30 billion to US\$ 40 billion [MENZEL 2000].

Summarizing the stakeholder perspective, a consortium that is floated as an independent company can be in the interest of shareholder value. This potential benefit has to be weighted against the possible negative reactions of excluded stakeholders as for example suppliers. In our case study Volkswagen seems to put more weight on supplier cooperation and less on the potential financial valuation of a powerful consortium while GM puts shareholder value in the center of its decision.

Organizational Learning

Organizational learning [DODGSON 1993] is concerned with all processes that lead to new knowledge in the organization, assimilate it, and apply it to a business setting. With respect to inter-organizational relationships a company can absorb knowledge from partners and increase its organizational competencies.

This theory can be used as an explanation for the collaboration between start-up, technology, and consulting companies with established old-economy firms to establish electronic markets.

Covisint is part of GM's e-GM initiative. This initiative has a clear mission to bundle e-business activities within GM and also to apply its results to the rest of the company. But this does not explain why Covisint had to be founded as a consortium with other manufacturers. It can be safely assumed that the knowledge about e-markets within the big car manufacturers is fairly equally distributed. So a knowledge transfer cannot be expected from the collaboration. To the contrary the newly created knowledge resides primarily in the new organization and it may be difficult to get it back into the own company, as the knowledge is then either bound to teams that cooperate with a number of major OEMs (implicit knowledge) or owned by outsourcing-partners.

By developing its own exchange, Volkswagen guarantees that the acquired knowledge stays within the company. Another perspective is that VW acquires a learning option: Because the automaker's own staff accumulates knowledge in managing electronic trading platforms, Volkswagen maintains flexibility. If similar platforms are considered suitable e.g. for internal logistics at a later stage, Volkswagen will be able to initiate projects on the basis of past experiences with the technology. While learning theories concentrate on skill development the danger of losing confidential information should also not be neglected. This is especially true for information on products, prices, inventory and orders, as well as for e-development. Covisint expects that a sophisticated security system will solve this issue.

Taking the organizational learning perspective the learning opportunities in a joint venture have to be weighted against the possible lock-in of intellectual capital in the consortium and the danger of losing confidential information. While VW stresses potential dangers GM seems to concentrate on opportunities and is relying on technological solutions.

Institutional Theory

The basic assumption of institutional theory [DIMAGGIO and POWELL 1983] is that firms organize to appear legitimate and conform to prevailing social norms.

In the electronic market domain this could mean that several companies form an electronic market or a company joins an existing market because "everybody has to do this Internet thing" and the visibility of the company is increased through participation. Another aspect is that often system integrators and investment banks bring together the participants of a consortium. In a later stage they are billing for consulting and financial arrangements and have an interest that these ventures carry on until an initial public offering (IPO).

Some of the early statements about the buying power collected in Covisint and the possible valuation after an IPO point in this direction. At the time of Covisint's announcement the B2B wave was on its heights and many old economy companies tried to be perceived as part of the new Internet economy. Volkswagen takes a more conservative approach as it sees the new technology primarily as strategic enabler and not as financial investment.

Summarizing, the institutional theory suggest that the move to join a consortium may be shortsighted if not backed by more substantial arguments than current movements. The different perspectives of VW and GM mirror a more conservative approach to financial markets vs. a clear focus on capital markets.

Strategic Choice

The strategic choice argument states that firms pursue alliances to increase competitiveness and market power [BARNEY 1991]. In general this means that, in the case of a consortium, all members should profit, at least in comparison to non-

consortium members. So while Volkswagen can gain a competitive advantage over others by pursuing its own strategy, the members of Covisint will have to concentrate their efforts on non-Covisint activities.

Two additional, often cited arguments should be brought forward under the ‘strategic choice’ perspective:

- *Task Complexity*: The task of streamlining the entire industry supply chain might be too complex for just one exchange.

The more partners are involved in a project the more difficult it is to interface their back-end IT systems. Additional interfaces will have to be specified and the unification of processes can be expected to be a long and tedious procedure. The technology issue also relates to that of governance – as rivaling partial solutions from the consortium-members already exist.

For Covisint it will be difficult e.g. to integrate all the different CAD systems in use as well as the back-end ERP systems. Volkswagen can tailor and optimize its market to its own systems. The integration of both former technology partners of GM and Ford – who have also rivaling product lines in many e-business functions – shows that a consensus for a common technology platform still has to be found.

- *Loss of organizational flexibility*: While flexibility is often cited as one of the reasons for forming alliances [JARILLO 1988] establishing a partnership with one company may exclude partnering with other firms. Moreover the organizational routines by the alliance may make it difficult to act independently.

With its proprietary solution Volkswagen retains the option to switch or abandon. If the marketplace model fails, it might be easier for Volkswagen to abandon the project than for competitors that own stakes in a joint venture. If one of the two exchanges succeeds, Volkswagen will either expand its own platform or join Covisint. Given open standards and Covisint’s commitment to attract the largest number of participants possible, switching is not likely to put Volkswagen in a serious competitive disadvantage. Thus flexibility maintained by players that choose a follower strategy might compensate for advantages of first movers.

Conclusion

Figure 4 summarizes our findings, listing for each of the discussed theories and perspectives the arguments and conditions that would guide a company towards either a consortium-based or a proprietary marketplace.

Consortium-based Exchange	Private Exchange
Transaction Cost Economics	
<ul style="list-style-type: none"> • Economies of scale will lower set-up costs of exchange for each company • Economies of scale will lower ongoing costs of exchange for each company • Aggregating demand will lead to lower procurement prices • Wide and fast acceptance of market standards will lower transaction costs • Instant market liquidity will lower transaction costs 	<ul style="list-style-type: none"> • A private exchange is easier to build and set-up costs will be lower • Cost of integration into own back-end systems will be lower
Resource Dependence	
<ul style="list-style-type: none"> • Consortium members can pool their complementary expertise in one company and offer a unique service 	<ul style="list-style-type: none"> • No mutual but a one-sided dependence on a competitor might evolve
Stakeholder Theory	
<ul style="list-style-type: none"> • Stakeholders can be bound to the venture • Company share value might increase due to IPO perspective 	<ul style="list-style-type: none"> • Excluded stakeholders might show averse reaction
Organizational Learning	
<ul style="list-style-type: none"> • Participants can learn from each other 	<ul style="list-style-type: none"> • Newly generated knowledge resides in the consortium and not in the mother company • Confidential information may be available to competitors
Institutional Theory	
<ul style="list-style-type: none"> • Organization goes conform with current movements and can e.g. realize a higher stock price 	<ul style="list-style-type: none"> • Organization may be formed on short-sighted external views
Strategic Choice	
<ul style="list-style-type: none"> • Partnership can exclude other competitors and realize competitive advantages 	<ul style="list-style-type: none"> • Any advantage provided by the e-market is available to all rivals • Managing a consortium is more complex than a single firm • The task to integrate too many players may be too complex • The organization may lose flexibility when bound to a consortium • Antitrust regulation may prevent the consortium from leveraging all potential benefits

Figure 4: Theories and their rationales for consortium-based and private exchanges

The theories we used to investigate the question of organizational structures for electronic markets fall along a conceptual continuum from economic (transaction cost economy) to behavioral (institutional theory) and also include strategic considerations. As shown in our analysis none of the theories clearly suggests one or the other organizational structure, but each of them contributes to our overall understanding of the partnering processes for electronic markets.

It has to be stressed that participating in a consortium-based exchange or using a proprietary market is not an either-or decision. VW as well as Covisint claim to be open to possible future collaborations. In fact suppliers in the automotive industry plan to join Covisint for their sell-side and forge other activities for their own buy-side. In general the Covisint example shows that consortium-based exchanges will face problems unless both buyer and seller see value in joining the exchange. Buyer-managed exchanges will have to offer an open dialogue (and equity) to the suppliers in order to align interests.

Concluding this implies that the advantages and disadvantages to participate in a consortium must be carefully weighed, taking multiple perspectives into account. In this paper we have developed a taxonomy of governance models for electronic markets, applied it to the automotive industry and finally structured the reasons for consortium-based and proprietary exchanges. This is the first step to a more comprehensive contingency framework.

Supplementary research is needed to extend these results to include third-party exchanges and meta markets. Furthermore sell-side markets and markets in other industries might show different properties. Another question to be examined is whether electronic markets exhibit a life cycle, e.g. from third-party through consortium-based to proprietary, or whether different market governance structures will exist in parallel.

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