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Analyzing the Added Value of Electronic Intermediaries in the Dutch Health Care Sector

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Abstract

The CareAuction intermediary offers a reverse auctioning platform to support the allocation of individual maternity care patient requests between purchasers of health insurance companies (acting on behalf of their policy holders) and care providers. Since its introduction in 2005, CareAuction has contributed to a small price drop of maternity care and induced competition on the supply-side of the market. This is a result of increased transparency for both (demand and supply) sides. The quality of the maternity care that is provided is monitored by a newly introduced quality evaluation system, which includes the patient and introduces quality as another competitive factor next to price. Next to CareAuction, other intermediaries are still active in the health care sector, supporting the allocation of care between insurance companies and care providers. Findings indicate that the influence of CareAuction leads to the disintermediation of at least one other intermediary. Theory on electronic intermediaries and market dynamics is used to identify the added values that these two intermediaries (CareAuction and LTZ) create for the purchasers and providers of maternity care in the context of the maternity care market.

Keywords: Electronic Intermediaries, Intermediation, Disintermediation, e-Health, Value Analysis, Market Dynamics

Introduction

In the last decade, the health care sector in the Netherlands underwent fundamental changes towards more demand-driven approaches of care allocation, like elsewhere in the world (van der Kraan and van der Grinten, 2004). One example of a more demand based allocation of care is CareAuction, an electronic intermediary that provides an auctioning platform to buyers and providers of health care services, primarily maternity care. Maternity care (“kraamzorg”) is professional help that women in the Netherlands can claim after having given birth. It typically consists of 42 hours of home care for mother and child during the first week after birth. Most health insurance policies cover about 90 % of the costs (about 1600 Euro in total) for this care service.

CareAuction operates in the gap between the (bulk) purchasers of maternity care services (i.e., the health insurance companies) and the providers of maternity care. Its services aim at improving the efficiency of the contracting process of care services for both sides. The contracting process does not directly include the patient as the end customer of the health care services, but takes the preferences of the patient as well as aggregated patient quality evaluations into account to find the

best match for a requested maternity care service. The contracting of maternity care is thus done by the insurance companies on behalf of the patient.

Recent research results have shown that the CareAuction intermediary has a substantial influence on the performance of the maternity care market, its structure and the behaviour of the market participants, i.e. insurance companies and care providers (Smits and Janssen, 2008). Next to CareAuction, few other intermediaries exist that support the allocation of maternity care, of which some ceased operations shortly after the introduction of CareAuction.

This paper focuses on (dis-)intermediation and value creation by (electronic) intermediaries in health care markets and uses insights from the CareAuction case. We want to contribute to the intermediation discussion by adding new observations on how electronic intermediaries influence market development and add value for markets and market participants. We analyze the conditions under which two intermediaries, CareAuction and LTZ, create certain values for market participants and how they affect the market. These observations are needed for further theory development in order to identify opportunities for electronic intermediaries and support usage decisions.

Section 2 describes the theoretical framework and research method we are using for our analysis. In section 3 the case is explained in more detail. Section 4 applies the theory and produces first findings. Section 5 gives a summary and points out future research directions.

Theoretical Background and Research Approach

First we review theories that address the evolution of intermediation in electronic markets and the roles that *electronic* intermediaries – cybermediaries – are filling out in order to create added value. The next subsection describes theories we are using to analyze the intermediation structure in the health care market. A framework by Klein and Teubner (2000) incorporates other factors next to roles that are important when analyzing electronic intermediaries. The model of industrial organization by Shepherd (1985) serves us as a broader structure to organize our findings. Finally our research method is explained.

Roles of Electronic Intermediaries

Markets (electronic and traditional) have three main functions: (i) The matching of buyers and sellers, (ii) the facilitation of transactions and (iii) the provision of an institutional infrastructure (Bakos, 1998). Each of these functions is realized by a couple of subfunctions: To match buyers and sellers, markets help to determine product offerings, enable search and maintain mechanisms to establish prices. Markets facilitate transactions by supporting logistics, settlement and creating a trusted environment. Furthermore markets provide an institutional infrastructure, making sure that every transaction on the market follows the given laws and regulations.

Intermediaries in markets “bring together customers and suppliers and facilitate demand and supply activities for the exchange of goods, services and information” (Fielt, 2006). From an economic point of view, they set prices, provide immediacy, search, match and serve as agents of trust by guaranteeing and monitoring transactions (Spulber, 1996). Holding these roles, intermediaries support the several sub functions of markets as described above. Table 1 summarizes the potential roles and values that intermediaries add within each of the market functions.

Table 1: Roles and added values of intermediaries in markets (Giaglis et al., 2002).

Market function	Subfunctions	Potential added value of intermediation
Matching buyers and sellers	Determination of product offerings	Intermediaries receive market signals and pass them on to sellers, allowing them to configure an improved product mix.
	Searching	Intermediaries can reduce search costs for both sellers and buyers by providing a 'one-stop shop' for information gathering, advertising and transaction management
	Price discovery	Intermediaries can generate the necessary liquidity for smooth market operation and in certain cases (e.g. auctions) may even provide the infrastructural mechanism for price discovery.
Facilitation of transactions	Logistics	Intermediaries can achieve economies of scale and scope for logistical transactions operations more easily than individual sellers can
	Settlement	Intermediaries facilitate, monitor and guarantee the settlement transactions
	Trust	Intermediaries guarantee to sellers and buyers the non-opportunistic behaviour of other market participants
Institutional infrastructure	Legal	Intermediaries (usually governments and international bodies) provide infrastructure the legal basis for market operation
	Regulatory	Intermediaries provide mechanisms for the enforcement of legal, ethical, and behavioural rules in markets

A big part of the literature on electronic markets and intermediation is dominated by the question whether electronic intermediaries are a threatened species, due to the lower costs of direct transactions. Malone, Yates and Benjamin (1987) call this the electronic brokerage effect, which comes along with a shift from electronic hierarchies to electronic markets (Malone et al., 1987). This effect, provoked by electronic networks like the Internet, would cause many firms to cut out the middlemen in their value chains, which would also lead to lower prices (Benjamin and Wigand, 1995). This "disintermediation hypothesis" has been questioned by several researchers. Sarkar, Butler and Steinfield (1995) showed that the direct link between sellers and buyers is not necessarily cheaper in terms of transaction costs than the intermediated link (Sarkar et al., 1995). The rationale behind this argument is that intermediaries can also create an added value for their customers, i.e. for the buyers and sellers.

Especially in a world in which information plays a more and more vital role for doing business and the amount of information available on electronic markets is enormous, intermediaries can play a crucial role. Terms like infomediary or cybermediary became popular to describe *electronic* intermediaries that deal purely with information (Grover and Teng 2001; Sarkar et al., 1995). Electronic intermediaries leverage information technologies to aggregate supply and demand and enable advanced searches for both sides based on different criteria. New pricing mechanisms like electronic auctions lead to better matches between buyers and sellers (Smits and Janssen, 2008). Information about products can be presented on websites and product comparison and bundling becomes easier. Customer profiles can be created based on shopping behaviour and used for recommendations. Another important task for infomediaries is privacy protection: Infomediaries can control the kind and amount of information that gets from one side of the market to the other. As agents of trust, infomediaries can assure the correct execution of transactions via their systems, enable customer evaluations about suppliers and products and offer community services like customer forums (Grover and Teng, 2001; Resnick et al., 1995).

Context-dependent Success Factors for Intermediaries

Due to the dynamics of markets and the dependence of intermediary-success on a specific industry context, other factors besides roles have to be taken into account too, when analyzing the success or failure of intermediaries. Klein and Teubner (2000) suggest a framework that provides factors that help in analyzing different market situations in terms of opportunities for electronic

intermediaries (Klein and Teubner, 2000). Next to intermediary characteristics, the framework takes into account characteristics describing the industry context. Intermediaries play roles in supporting certain market functions as described in the previous section. They support search, pool demand and supply, support price determination, provide trust and so on. The type of linkage between an intermediary and the two sides of a market describes its position in a market. Intermediaries can either be supplier-oriented, with strong connections to the supply-side of the market, buyer-oriented with good connections to the buy-side, or the intermediary can be neutral, with equally strong links to both sides.

The framework includes channel characteristics, product / service characteristics and transaction characteristics to describe the industry context that the intermediary is operating in. Channel characteristics are important because the channel determines whether there is enough “space” and need for an intermediary. Factors like supply-demand-ratio, power of the stakeholders and transparency are included. Product and service characteristics like the customer’s price and quality sensitivity, peculiarity (unique service offerings vs. commodities) and bundling possibilities and costs, influence the services that the intermediary can possibly offer to the market. The transaction characteristics mainly comprise drivers of transaction costs, like information asymmetries, uncertainty, opportunism and asset specificity. **Table 2** summarizes some important properties.

Table 2: Factors determining the success of intermediaries in certain industries.
From (Klein and Teubner, 2000)

	Factors	Properties
Intermediary Characteristics	Roles	Matching, searching, pooling and buffering demand and supply, price determination, trust, privacy protection, expertise, logistical support, settlement, etc.
	Type of Linkage	Supply-side oriented, buy-side oriented, neutral
Industry-context Characteristics	Channel	Supply-demand ratio, fragmentation of supply, degree of market transparency, allocation inefficiencies, degree of regulation and regulation issues, degree of concentration, intensity of competition, value chain structure (established roles of players), degree of price volatility and price discrimination
	Product / Service	Customer price sensitivity, product complexity, degree of standardization, exchangeability of products and services, peculiarity, possibilities and costs of bundling and configuration, (marginal) production cost, perishability
	Transaction	Information asymmetries, uncertainty, frequency, asset specificity, risk of opportunism, confidence, execution cost

Market Dynamics

In order to put the development of the intermediaries at focus into the context of the development of the health- and especially the maternity care market, we will use Shepherd’s model of industrial organization (Shepherd, 1985; Smits and Janssen, 2008). The model conceptualizes the causal chain of influence of external determinants on the dynamics of market structure, market behaviour and market performance (see Figure 1). For our purposes, market structure can be described by channel characteristics like market shares, fragmentation of supply and entry barriers. Furthermore it comprises the intermediaries that exist in the market. The structure of a market influences market behaviour, i.e. the intermediary services that are offered and the strategies of the market participants. Market structure and behaviour determine the performance of the market. Market performance can be expressed by the added values of the intermediary services, which affect e.g. the allocation efficiency, levels of prices and quality and technological innovation. Reverse effects are possible when e.g. the behaviour of market participants influences the intermediation structure or market performance influences entry barriers.

External determinants are e.g. the product and service characteristics, transaction characteristics, information technologies and public policies. Especially information technologies change markets

fundamentally in the way they support certain market functions and enable electronic links between participants, leading to lower coordination costs as explained in section 2.1.

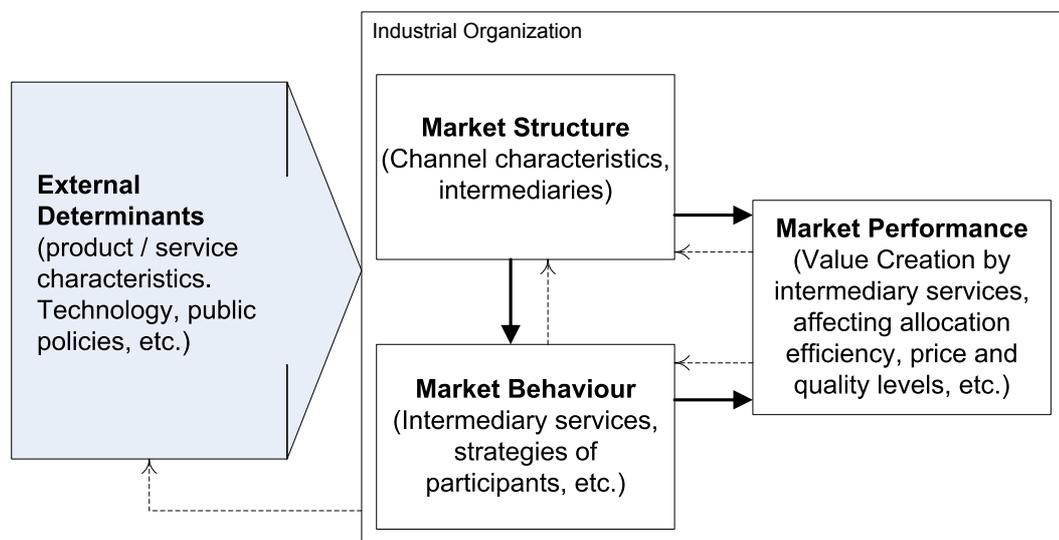


Figure 1: Adapted model of industrial organization, illustrating the dynamic interaction between market structure, behaviour and performance (Shepherd, 1985; Smits and Janssen, 2008).

Research Method

The presented case is investigated using a qualitative and exploratory case study approach. A first phase of the case study started in 2005 with looking at the maternity care contracting market and the influence of the introduction of CareAuction in this market. In a second phase the analysis is extended to a broader perspective, focussing at the development of intermediation in the health care market.

Qualitative case study research is a widespread and useful research method in the IS research domain (Benbasat et al., 1987; Galliers et al., 2007). Several sources of evidence are used to triangulate the data basis (Yin, 2003): Semi-structured interviews, documents and relevant websites of organizations. At the time of writing, several semi-structured interviews have been conducted with the CEO of CareAuction, a (former) member of the board of directors of LTZ, who is also CEO of a bigger maternity care provider and several decision makers at insurance companies and care providers. In addition to the analysis of these interviews by means of qualitative data analysis, several websites have been investigated and some documents given to us by the companies were analyzed. Furthermore, material from the first phase of the case study (2005 – 2007) is used.

The Case

Maternity care is contracted by the health insurance companies via two different ways: Frame contracting and individual contracting. Contracting on an individual basis is done by the insurance companies in their (geographically) peripheral areas of operation. CareAuction and LTZ are both active in these peripheral areas and support the individual contracting of care. Our analysis hence focuses on individual maternity care contracting.

Maternity Care Allocation

The individual contracting of maternity care is carried out between the insurance company and the care provider upon a patient's request. A patient can request maternity care by contacting the callcenter of her insurance company, indicating when she needs the care. The client can name a care provider of her choice. In that case the insurance company tries to allocate the care request to the preferred care provider. Otherwise a care provider of the insurance company's choice gets the contract. The actual allocation of the care request to an appropriate care provider can be accomplished via two different channels:

1. Direct allocation to the care provider
2. Allocation via an intermediary (e.g. CareAuction, LTZ)

For the first option, the insurance company tries to allocate the request directly to one of the bigger care provider companies on the basis of frame contracts, as mentioned above. For their peripheral areas most insurance companies use an intermediary for allocating patient's requests to an appropriate care provider.

Intermediary Services in 2008

CareAuction is an electronic intermediary that started operations in March 2005 and supports maternity care allocation between the health insurance companies and the providers of maternity care. CareAuction maintains a web-based, reverse English auctioning platform on which individual care requests are auctioned. At present, only two big insurance companies are using it for maternity care contracting for their customers. These two insurers have a market share of together more than 50 %.

In order to be allowed to participate on CareAuction, care providers need to have a frame contract with the insurance companies using the platform. This contract regulates e.g. that care providers have to accept a patient if they win the auction and that they are obliged to bid on a request which is located in the geographical region they operate in.

Individual requests for each patient are entered into the auctioning platform. The starting price of the auction is the maximum tariff (per hour) that has been fixed by legal authorities. Care providers can bid reductions, thus lowering the price per hour they can offer maternity care for. However, the lowest bid does not necessarily win the auction, as the client can give a preference for a certain care provider. This preference is accounted for by the allocation robot of the auctioning system. After the successful allocation of a care request to a care provider a fixed fee of currently 19,50 Euro is charged by CareAuction to the provider that wins the auction and gets the contract.

CareAuction provides typical facilities in the context of electronic auctioning, like filtering and sorting of the requests and bids, bidding agents and news services. Furthermore CareAuction recently launched a quality evaluation system, which enables the inclusion of patient's evaluations about care providers as a bidding criterion on the platform.

LTZ (Landelijk Transferpunt Zorg, "National Intermediary for Transfer of Care"), is an intermediary that positions itself as a broker between insurance companies and health care providers (maternity and other care). LTZ was set up by some of the bigger care provider organizations in the peripheral areas, who act as stakeholders that also assign the board of directors. LTZ helps insurance companies to find free capacities on the care provider side. It has individual fixed hour tariffs of maternity care for each insurance company and keeps a margin on each hour of care that is contracted. Upon request at a callcenter, the insurer contacts LTZ in order to find the right care provider (taking the preference of the client into account). There are no specific contractual relationships between LTZ and the care providers that regulate the allocation of maternity care. This is done on the basis of rather "informal relations" (according to our interviewees).

Future (Planned) Services

There are two recent developments that CareAuction tries to push further: First, CareAuction wants to increase the amount of general homecare that is allocated via its platform. General homecare belongs to the so called “first-line” health care and comprises services such as meals on wheels and housekeeping for elderly people. It is a promising market with a budget of about 2.8 billion Euros¹. Homecare-related services are usually purchased by the local municipalities upon request of their citizens. Up to now, two municipalities are using CareAuction for this purpose. CareAuction plans to heavily increase the number of municipalities using the platform for general homecare purchasing.

The second recent development of CareAuction is an electronic contracting module. The module enables efficient contracting of many different kinds of health care providers on a big scale for the health insurance companies. Health care providers like psychologists, physiotherapists and speech therapists have to fill in a form on a website, requesting a variety of information about the services they offer, their specialisations, their surgery and opening hours. Based on weights for these different criteria, the health insurance companies calculate the tariff the care provider gets for allocated care.

Analyzing the Value and Success of Intermediaries in the Maternity Care Market

In this section we analyze the added values that CareAuction and LTZ create for the market participants and their influence on the dynamics of the health care market. First we will describe the external factors that determine any intermediation activity and properties of the market structure. The services that the intermediaries offer are part of market behaviour and are described next. We will describe market performance by looking at the added value that the intermediaries provide to the different parties and how these values influence performance characteristics. Finally, reverse effects on market structure and behaviour are explained.

External Determinants

For our analysis we regard two factors as external determinants that influence intermediary activity: (i) The characteristics of maternity (or health-) care as a product and (ii) the characteristics of the transactions being made to allocate the care requests. While the price is the most important aspect of maternity care for the insurance companies that purchase the care, patients care about a good quality of the service. Until now, the care service that is provided has not much variety. However, there are opportunities to change this, for example by offering “bundles” of maternity care together with other services.

Typical characteristics that influence transaction costs are high information asymmetries due to a lack of transparency, low uncertainty due to stable demand and high asset specificity (the usage of maternity care personal for other health care services is limited).

Market Structure

The channel characteristics as explained in section 0 have to be taken into account when describing market structure and the positioning of the intermediaries between insurance companies and care providers. In the maternity care market, demand for maternity care is strongly related to the birth rate and thus relatively stable, but demand (i.e. births) and supply (the care providers in the different regions) are quite scattered. This creates a lack of transparency for both sides of the market and makes efficient allocation of care more difficult. Furthermore buyer concentration is quite high compared to supplier concentration, as there are only a few (big) insurance companies

¹ <http://www.actiz.nl/file?id=100364>.

and many small and medium-sized care provider companies. There are some bigger maternity care providers that can be considered as established players. Regulations imposed by the Dutch law regulate a maximum hourly tariff that can be charged by the care providers.

CareAuction is, up to now, the only electronic intermediary in the market. Next to CareAuction, there are a limited number of traditional intermediaries that support the allocation of maternity care, with LTZ being one of them. Another example is ATCzorg. Table 3 summarizes external determinants and factors that describe market structure.

Table 3: Summary of industry context factors, describing external determinants and market structure.

External Determinants	Service Characteristics	<ul style="list-style-type: none"> • Limited product variety until now, but opportunities for bundling exist • High quality-sensitivity of patients • Price of maternity care is cost factor for insurance companies • Maximum amount of care (in hrs.) per patient/child and maximum tariff per hour
	Transaction Characteristics	<ul style="list-style-type: none"> • High information asymmetries (lack of transparency) • Low uncertainty (stable demand) • High asset specificity (maternity care personal)
Market Structure	Channel Characteristics	<ul style="list-style-type: none"> • Supply and demand stable, but scattered • High buy-side concentration • Many SME's on supply-side • Lack of transparency • Strongly regulated market (health care laws) • Some established players on both sides

Market Behaviour

The market behaviour of CareAuction and LTZ is described by the functions they fulfil with offering their services. CareAuction aggregates demand for the insurance companies by listing each request for care individually and enabling searching and filtering for the care providers on this data. Furthermore CareAuction provides a (recently launched) quality evaluation system. The quality evaluation system allows customer evaluations about care providers to be entered into the system and being included in the auction. The auction mechanism of CareAuction supports the exchange, i.e. the contracting of maternity care by determining best matches on the basis of preference, quality and price. On the basis of this match, both parties are notified by the system.

LTZ also aggregates demand, but in a different way than CareAuction. Call centres contact LTZ upon having a request from a client. LTZ then allocates the request to one of the connected care providers. The linkage between LTZ and the care providers is not completely clear, though. There are no contractual relations, but “work relations” that developed through the years, more on an informal basis. According to our interviewee, requests were allocated on the basis of preference and price. However, LTZ has one fixed price per insurance company and keeps a margin on each hour of care that is contracted for.

Another notable issue of market behaviour is the development of CareAuction as described in section 3.3. With the introduction of the electronic contracting module CareAuction extends its influence in the health care market by addressing new business segments. With its attempts to increase the number of municipalities that are using the platform to purchase general homecare, CareAuction tries to get more market share in a promising market. Table 4 shows an overview of functions that CareAuction and LTZ fulfil.

Table 4: Overview of roles of the two intermediaries.

	CareAuction	LTZ
Roles of CareAuction and LTZ	<ul style="list-style-type: none"> • Demand aggregation (including filter and search possibilities on care requests) • Quality evaluation system • Price determination (auction) • Electronic contracting module 	<ul style="list-style-type: none"> • Demand aggregation (limited information) • Care allocation based on availability, preference and fixed price

Market Performance

The services that the two intermediaries offer create added value for the market participants and influence market performance. The added value for one party can at the same time create negative value for another party. Below we describe the added values and their influence on allocation efficiency, prices and quality.

The most considerable role of CareAuction is the aggregation of individual care requests on its auctioning platform. This creates a high demand-side transparency for the care providers that are using CareAuction. The filter and search functionalities enable them to find potential patients in their regions and support their planning. Insurance companies can publish care requests for their customers with low administrative effort. Furthermore CareAuction creates supply-side transparency because insurance companies can see who bids on the requests, including quality ratings from former quality evaluations. Next to these added-values, the aggregation of demand brings along some disadvantages for the care providers. The allocation of care via the auctioning platform creates additional administrative burdens for them, as they have to monitor the auctions and fill in details from the auction manually into their own systems. Also there is only limited information about the client available, like region and period of care. However, this can also be seen as privacy protection and thus as a value for the customers.

The reverse auctioning mechanism contributed to a price drop between 2 % and 4 % in the maternity care market (Smits and Janssen, 2008). This has a direct added-value for the insurance companies (lower costs) and a negative value for the care providers (less revenue). With the quality ratings for every care provider, purchasers of care in insurance companies can distinguish care providers with low prices but also low quality from care providers with a good price / quality relation. However, the patient can still not see these quality ratings and eventually only gets this information via the callcenter of her insurance company. The quality evaluation system means less administrative work for the insurance companies, as the quality forms that are filled in by the patients are processed by CareAuction.

The newly introduced electronic contracting module increases supply-side transparency for the insurance companies in the general health care market by collecting details about offered services, conditions and other information from a big number of care providers. This comes at a very low additional effort for the insurance companies.

The demand aggregation function of LTZ creates added value for some of the care providers. LTZ allocates care contracts to providers that have sufficient capacity and that LTZ has working relations with. This means low administrative efforts of maternity care allocation for these providers. Insurance companies suffer a lack of transparency when contracting via the LTZ, because they don't know which care providers and capacities are available on the supply-side. Furthermore they have little influence on the prices, which are negotiated beforehand and are fixed for every transaction. The fixed prices create some stability and provide sufficient price levels for the care providers that contract via the LTZ. On the contrary, smaller care providers or new entrants have little influence on the way LTZ allocates care and competition is difficult. Table 5 gives an overview of the different values (positive and negative) for each function.

Table 5: Added values of the functions of CareAuction and LTZ for buyers and suppliers.

	Role	Value for Insurance Companies	Value for Care Providers
CareAuction	<i>Demand aggregation, filter and search possibilities</i>	+ Easy publication of demand in non-core areas + Creates supply side transparency (overview of care providers operating in regions)	+ Creates demand side transparency (overview of care requests in regions) – No direct contact with customer, not enough information about patient – More administrative effort (monitoring)
	<i>Quality assessment</i>	+ More information about care providers + Less administrative work	+ Allows competition via quality
	<i>Price determination</i>	+ Lower costs (lower prices) + Less effort for care allocation	– Less revenues (lower prices), higher costs (transaction fee) – Higher administrative effort + Competition via price possible for small providers and new market entrants
	<i>Electronic Contracting</i>	+ Creates high supply-side transparency + Decreases administrative costs	± Unclear added-value
LTZ	<i>Demand aggregation</i>	– No supply side transparency	+ Little administrative efforts for participating providers – No demand-side transparency for small care providers
	<i>Allocation of care requests</i>	– Prices too high – No quality control	+ Stable price level – Competition for small providers and new entrants difficult

The distribution of added values of the two intermediaries makes the kind of linkages clear between the intermediaries and the both sides. LTZ is a supplier's agent that was set up by care provider organizations and adds mainly value for the supply-side. CareAuction creates mainly advantages for the insurance companies, which makes it a buyer's agent. Our results indicate that there is added value for very small care providers and new entrants, as they can benefit from the high demand-side transparency provided by CareAuction and compete via a lower price.

Reverse Influences on Market Structure and Behaviour

While the market behaviour of the two intermediaries influences market performance by means of their added values, performance also has a reverse influence on the behaviour of the market participants. Care providers pursue new strategies that are enabled by the increased market transparency. They can compete via the quality of services they offer in their own core areas and via the price in adjacent areas in order to increase their market reach.

The market behaviour of the different players reversely influences market structure. With the introduction of new services like the electronic contracting module and the focus on local municipalities, CareAuction further extends its position as an electronic intermediary in the health care market. Although there is evidence that other intermediaries are still active and trying to introduce electronic services that directly address the patient², CareAuction causes the disintermediation of at least one supply-side intermediary.

The increased transparency that CareAuction provides lowers market barriers and changes market structure by enabling new (small) market entrants to successfully compete against the established care organizations.

² Several websites exist that inform patients about health care services and provide possibilities for search and application for care services. Examples are www.kiesbeter.nl and www.kraamzorg.nl.

Conclusion and Further Research

While previous work focussed on the influence of a new price determination mechanism (the electronic auction) on the maternity care market (Smits and Janssen, 2008), this research focuses on the roles and added values of two intermediaries in the health care sector. Our study shows that electronic intermediation can add substantial value, leading to the use of an electronic intermediary by some players in the market. The distribution of the added values of the two intermediaries suggests that they occupy different positions in the market, one on the buy-side (CareAuction) and one on the supply-side (LTZ) of the market. This leads to the disintermediation of the supply-side intermediary on the one hand, and to new strategies of the players (care providers and insurance companies) on the other hand. These effects occur over longer periods of time (2005 – 2009) and affect market structure, behaviour and performance for all actors and other intermediaries involved. Care providers see new opportunities due to increased demand-side transparency, enabling them to extend market reach and allowing smaller care providers to enter the market more easily. Insurance companies profit from further increased supply-side transparency, enabled by the quality evaluation system and the electronic contracting module. Competition between care providers is now possible on the basis of price and quality. Patients can benefit from the services, too. However, this depends on whether or not the insurance companies pass the lower price on to their policy holders and whether the quality of the provided care services will not suffer under the increased competition.

Our findings contribute to the theory on electronic intermediation by adding new observation on the added values of electronic intermediaries and the disintermediation of traditional intermediaries. The application of a framework that includes industry context next to intermediary characteristics enables analyses of intermediation–disintermediation scenarios on a broader conceptual basis. However, theory on electronic intermediation still lacks systematic approaches that enable identification of opportunities for intermediaries and analyses of the added value they create (Rensmann et al., 2008). This theory enhancement could support decisions concerning the usage of a certain intermediary and the identification of opportunities and threats for electronic intermediaries.

The next planned step in the case study is the analysis of patient-directed e-health platforms, which create provider transparency for the patients. While CareAuction can be seen as a B2B electronic intermediary, these patient-platforms are B2C or even C2C oriented. This analysis should deliver a more complete picture of electronic intermediation initiatives in the triangle between patients, insurance companies and care providers. An additional series of planned interviews will provide a broader data base for analysis and can also be used for further theory development.

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