Abstract preview

Analysis of Business Interactions and Values from the Buyer’s Side in the Hungarian Hospital Market

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Abstract

In this research the value of business relationship is considered as a concept that expresses usefulness and motivation recognised in, or assigned to a business relationship. Usefulness means the economic side and motivation indicates the social side of value (Mandják, 2003; Mandják and Simon, 2007). Usefulness and motivation are value types that determine the value of business relationships. Value types have three levels, exchange, relational and network levels. Each value type in each level is composed by different value constituents.

The main goal of our research is to better understand the Hungarian hospitals’ behaviour in their relationship with drug suppliers. In this paper we investigate business relationship value applying a particular part of the Integrated Business Relationship Value Model.

The analysis of the relation of the value constituents to each other, may lead us to reveal the examined Hungarian hospitals’ behaviour types toward their drug suppliers. According to the results of our research, five different behaviour types could be identified.

Keywords: business relationship, interaction, value, hospital

Introduction

In our research we examine business relationships between a public and a private actor in the health care network. Definitely, differences between the values and interests of these actors can be identified (Jarvensivu et al, 2007). In our case, hospitals’ - as public service producers - values and interests are serving the public good and ensuring public health based on individual needs. While drug suppliers’ - as private companies - values and interests are mainly increasing shareholder profit and taking care of stakeholders. We conducted a survey among the Hungarian public hospitals in order to reveal their behaviour in their relationship with drug suppliers.

In a former research (Mandják, Simon and Szalkai, 2006) we analysed the Hungarian hospital market as an institutional market from a network perspective and we composed some findings - among others - about the relationship between the hospitals and their drug suppliers. In that research we examined the evaluation of the following criterias on the buyer’s side: total satisfaction with the drug supplier, the role of personal bonds, continuity of the relationship, former experiences with the drug supplier, trust, stability, routine side of the relationship and how relationship covers the drug demand of the hospital. We found that different perceptions of the examined 65 hospitals exist about their relationship with drug suppliers. Three clusters of hospitals were identified based on the different perceptions: relationship focused, insensible and transaction focused. Most probably these differences are caused by the social components of the relationship.

In our present study we take a closer look into these relationships using different, more detailed factors. The main goal of our research is to better understand the Hungarian hospitals behaviour in their relationship with
drug suppliers. For the analysis reported in this study we applied a particular part of the Integrated Business Relationship Value Model.

**Theoretical background**

**Business relationship value**

We understand business relationships as an interactive exchange activity between two organisations. The business relationship is in the meantime the organisational and management forms of the connections between the two organisations or among the involved people (Mandják, 2004). Our definition is strongly based on the seminal interactive model (Hakansson, 1982) as we consider the product, information, financial and social exchange episodes as the building blocks of each business relationships. The activities’, resources’ and actors’ connectedness (Hakansson and Snehota, 1995) are the main content of the business relationships. At the same time it means the mutual application of both the resource based and the activity based view (Haanes and Fjeldstad, 2000) of management.

As in business-to-business world the supplier-customer relationship is the framework of the value creation process, the question of the value of these relationships is becoming increasingly the focus of B2B studies (Anderson and Narus, 1999; Anderson et al. 2007; Hakansson, 1982; Wilson and Möller, 1995; Wilson and Jantrania, 1996). However, value is a complex phenomenon. Value in the context of business relationships has many faces which need to be analysed in order to understand the motives of actors in these relationships. In a dyadic approach Henneberg et al (2005) distinguish three level of business relationship value as exchange value, relational value, and proprietary value.

In this research the value of business relationship is considered as a concept that expresses usefulness and motivation recognised in, or assigned to a business relationship. Usefulness means the economic side and motivation indicates the social side of value (Mandják, 2003; Mandják and Simon, 2007). Usefulness and motivation are value types that determine the value of business relationships. Value types have three levels, exchange, relational and network levels. Each value type in each level is composed by different value constituents.

Based on this business relationship value concept an Integrated Business Relationship Value Model has been developed (Mandják, 2003; Mandják and Simon, 2004) and empirically tested (Mandják and Simon, 2007; Mandják, 2007; Simon, 2007). The integrated model of business relationship value describes the usefulness and motivation value types and the value components that constitute these ones from both the buyer's and supplier's point of view. It contains indicators at the exchange, relational and network level (Mandják and Durrieu, 2000).

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Figure 1. The schema of the Integrated Business Relationship Value Model

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<table>
<thead>
<tr>
<th>The prevalent field of value</th>
<th>The BUYER’s perception</th>
<th>The SUPPLIER’s perception</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value types</td>
<td>Value types</td>
</tr>
<tr>
<td></td>
<td>Economic value (Utility)</td>
<td>Social value (Motivation)</td>
</tr>
<tr>
<td>Exchange episode level</td>
<td>* value constituents</td>
<td>* value constituents</td>
</tr>
<tr>
<td>Relationship level</td>
<td>* value constituents</td>
<td>* value constituents</td>
</tr>
<tr>
<td>Network level</td>
<td>* value constituents</td>
<td>* value constituents</td>
</tr>
</tbody>
</table>
```

(Mandják and Simon 2004)
The main goal of our research is to better understand the Hungarian hospitals' behaviour in their relationship with drug suppliers. For this investigation the Integrated Business Relationship Value Model is applied as a framework.

Hungarian hospitals are mostly state-run institutions and the suppliers are profit-oriented companies. It means a particular supplier-customer business relationship, where the customer is an institution. “The characteristics, orientations and purchasing process of institutional buyers are somewhere between commercial enterprises and government buyers” (Hutt and Speh, 2007:56). One important characteristic is the determining role of the budget and the buying process could vary in a broad way, but there are always different professionals and/or non-professionals involved in them. It means a great possibility of intra-organisational conflicts about and during the buying process (Cochran and White, 1981).

Haanes and Fjeldstad (2000) present their competition level approach on the pharmaceutical industry. According to their approach, large, multinational pharmaceutical companies are generally acting on contractual and operational level competition and generic drug manufacturers are competing at operational level. It seems to be a relevant description for the Hungarian hospital market as well. Drug manufacturers are

**Applying the Integrated Business Relationship Value Model in the healthcare business**

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competing these two levels when they create, maintain and develop a business relationship with Hungarian hospitals. Although drug manufacturers apparently have strategic relationship with hospitals, the major part (80%) of hospitals’ drug demand is satisfied through business relationships with drug wholesalers.

In a business relationship with drug suppliers the object of exchange episodes are the different pharmaceuticals. We approach the business relationship value from the buyer’s side, namely we examine how the hospitals evaluate their drug suppliers. Supplier evaluation is a behavioural question, thus it has economic and social elements as well. Supplier evaluation is depending on the buyer’s purchasing policy and the object of exchange. As drugs are always important but really standardised products the buyer economic behaviour seems to be very similar, what Porter (1985) describes as the Buyer Purchasing Criteria. The value of products is a function of Buyer Purchasing Criteria (Porter, 1985:141-143). Variation in Buyer Purchasing Criteria gives rise to selective adaptation of products or differentiation. Differentiated products can command a higher price if they provide a better match with Buyer Purchasing Criteria. Customer value is defined either by the cost reductions that the product can provide in the customer’s activities or by the performance improvements that the customer can gain by using the product (Stabell and Fjeldstadt, 1988). Hospitals’ behaviour must be relatively similar if the purchasing criteria are decisive. Anyway the results of a previous empirical research on that field (Mandják, Simon and Szalkai, 2006) show significant differences of the hospitals behaviour in their drug supplier relationships. The research results showed that those differences are caused by the social component of the behaviour. Thus in this research we have focused our intention to the social part of business relationship value.

The Integrated Business Relationship Value Model deals with both the economic and the social value types (Mandják and Simon, 2004). Based on the model’s empirically tests and the results of the previous research (Mandják, Simon and Szalkai, 2006) the partly application of the model has been decided. To apply the Integrated Business Relationship Value Model we examined the following value constituents (Mandják, 2003; Mandják and Simon, 2004):

- **profitability of the relationship**
  From the point of view of the buyer, this is the difference between the expenses due to the relationship and the savings coming from the relationship. The less expense is needed to achieve the more savings possible, the more valuable the relationship for the buyer is.

- **own portfolio management**
  From the point of view of the buyer’s own business relationship network, the more important a relationship is, the more valuable this relationship is. Importance can depend on quantity criteria, such as turnover or on quality criteria such as concentration or evenness of the portfolio.

- **personal relationships**
  This value constituent is formed by the personal communication and the frequency of meetings between the people concerned in the relationship, by the tightness and history of the relations and by personal sympathy. The closest these relations are and the more they are based on personal sympathy, the more valuable they are.

- **satisfaction with the product**
  This is the satisfaction of the buyer with the products bought in the relationship. The more satisfied the buyer is, the more valuable the relationship is to the buyer.

- **smoothness of the relationship (routines)**
  The routines developed in the relationship make it more simple, more transparent and more predictable. Routines decrease the probability of conflicts or rather if such conflicts appear routines make it easier to resolve them. The smoother the relationship is, the more valuable it is for both partners.

- **security of the relationship**
  The security of the relationship can be described through mutual confidence, persistence, trustworthiness, probability of keeping a promise and honesty of partners. The higher the security of a relationship is, the more valuable it is.

- **emanation of the relationship**
  The emanation of the relationship inside its own network, the reference value of the relationship towards other members of the network, network synergy and the emanation of the relationship towards other networks play a role in the evolution of this value item. The relationship emanation can be positive and thus increase the motivation value, but it can also be negative and thus decrease the motivation value.
The first two value constituents described above belong to the usefulness value type, while the others belong to the motivation value type.

**Research method**

In the framework of the survey data have been collected from the chief pharmacists in charge of purchasing in 97 public hospitals in Hungary. The survey was conducted in November and December 2007. We sent and collected the questionnaires via e-mail. Finally our sample contained 44 filled-out questionnaires.

We used a very similar questionnaire like in 2002, but we added more value constituents measuring the value of the relationship with drug suppliers. In our paper we present only the results of this analysis concerning the values of these relationships from the buyers’ point of view.

Applying the original Integrated Value Model we examined only those variables, which are relevant from the point of view of the hospital-drug supplier business relationship. We put more emphasis on the social value of the business relationship, but in order to take the usefulness of the relationship into consideration we also put 2 economic value constituents into our analysis, such as:

- profitability of the relationship (relationship level) which is about the difference between the expenses due to the relationship and the savings coming from the relationship for the hospital; and the
- own portfolio management (network level) which is about the importance of the relationship from the hospital’s point of view in the hospital’s business relationship network.

Among the social value constituents we examined 5 different factors, namely:

- personal relationships (exchange episode level) which describe the personal sympathy with the drug supplier;
- satisfaction with the product (exchange episode level) which means the satisfaction of the hospital with the drugs bought in the relationship;
- smoothness of the relationship (relationship level) is about the routines developed in the relationship with the drug supplier which make it more simple, more transparent and more predictable;
- security of the relationship (relationship level) can be described through mutual confidence, persistence, trustworthiness, probability of keeping a promise and honesty of partners; and
- emanation of the relationship (network level) reflects the reference value of the relationship towards other members of the hospital’s network and towards other health care networks.

Each constituent contains several indicators, they have been evaluated by the respondents on a 5-point scale, where 5 means the fully agreement and 1 means the fully disagreement (see Appendix). We tested the reliability of the data with Cronbach-alpha: its value is over 0.8.

**Research findings**

In Hungary the procurement of drugs in hospitals is submitted to the public procurement law. We assumed that the usage of public procurement has an influence on the evaluation of business relationship with the drug suppliers.

According to the respondents, public procurement and central public procurement were used for purchasing drugs in 32 hospitals. More than the halves of these hospitals enlist the services of outer companies to carry out the procurement procedure. Naturally this outer help makes the purchase more expensive.

In order to confirm the hypothesis on the relevance of social values and to characterise the relationships on the basis of the social value constituents, we used the method of factor and cluster analysis. For the factor analysis we applied the principal component analysis, all the factors have been selected based on eigenvalue criteria. The KMO value of initial variables was 0.71, the Bartlett’s test of sphericity was 359.3 (level of significance 0.000), the total variance explained by the extracted factors was 74%. The results of the factor analysis indicated the correspondence between indicators and the main dimensions (factors) describing the relationship of the hospital and the drug supplier. For the detailed description of the value indicators see the Appendix.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 Trust</td>
<td>X37, X40, X28, X35</td>
</tr>
<tr>
<td>F2 Personal relationships</td>
<td>X25, X26, X27</td>
</tr>
</tbody>
</table>

Table 1. Factors and variables
For the social values five different factors are identified (F1-F5). These factors combine the original indicators as variables according to Table 1. F1 combines indicators of mutual sympathy, trust, keeping promises to each other and the relationship as a supplier’s reference. We call F1 as the value of trust. F2 corresponds to the original value constituent personal relationships, while F3 corresponds to smoothness of the relationship. F4 refers to the indicators of satisfaction with all the products and services bought in the relationship, the fairness of the supplier and the relationship as a reference for other suppliers. We call this varied factor as the value of reliability. Finally, F5 combines also various indicators, such as satisfaction with most of the products and services bought in the relationship, the smooth character of the relationship, and the durability of the relationship. We may call this latter factor the value of goodness.

We made the segmentation of the hospitals according to the social factors detailed in Table 1. The process of cluster analysis consisted of 2 steps: after the elimination of outliers with the single linkage method we used the Ward method for clustering the respondents. With the help of the cluster analysis we created two major clusters with 16, 14 hospitals, and three minor clusters with 3, 4 and 4 hospitals (based on the F-value criteria we chose the 5-cluster solution for analysis). See the means of the factors in these clusters in Table 2. and Table 3.

Table 2. Means of the factors in the two major clusters

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cluster1</th>
<th>Cluster2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0,6</td>
<td>0</td>
</tr>
<tr>
<td>Personal relations</td>
<td>0,65</td>
<td>-0,81</td>
</tr>
<tr>
<td>Smoothness</td>
<td>0,44</td>
<td>0</td>
</tr>
<tr>
<td>Reliability</td>
<td>-0,2</td>
<td>0,55</td>
</tr>
<tr>
<td>Goodness</td>
<td>0,11</td>
<td>0,41</td>
</tr>
</tbody>
</table>

In the description of the clusters we put emphasis on the motivation values in the relationships; we tried to reveal the important elements of the relationships for the buyer.

Cluster1 contains 16 hospitals. Chief pharmacists in these hospitals report high importance of the personal characteristic of the relationship. Hospitals in this group are considered to be network oriented, where the social value constituents seem to be important. The relations with the suppliers are tight and go back in the past. The chief pharmacists in these hospitals respect and appreciate the drug supplier, nevertheless they are very satisfied with them (average total satisfaction on a 5-point scale is 4,25). The second biggest cluster contains 14 hospitals (Cluster2). According to the respondents in this group the relationship with the drug suppliers is important but not as a personal relationship, but as a requirement for the daily operation of the hospital. Chief pharmacists here seem to be technocrats who consider the relationship with the drug supplier an administrative task. We found the highest total satisfaction with the supplier in this group (average total satisfaction on a 5-point scale is 4,5).

The three smaller, or minor clusters may be introduced as outliers of our sample, but regarding the small number of respondents, it is worth examining why they behave so differently comparing to the hospitals in the two major clusters. These hospitals can not be merged into one cluster because of the differences in characteristics, see Table 3.

Table 3. Means of the factors in the three minor clusters

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cluster3</th>
<th>Cluster4</th>
<th>Cluster5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0</td>
<td>-2,29</td>
<td>0</td>
</tr>
<tr>
<td>Personal relations</td>
<td>0,84</td>
<td>0,62</td>
<td>-1,02</td>
</tr>
<tr>
<td>Smoothness</td>
<td>-1,65</td>
<td>0,74</td>
<td>-1,34</td>
</tr>
<tr>
<td>Reliability</td>
<td>1,17</td>
<td>-0,34</td>
<td>-1,63</td>
</tr>
<tr>
<td>Goodness</td>
<td>-0,94</td>
<td>-0,77</td>
<td>-0,4</td>
</tr>
</tbody>
</table>

According to the results, for chief pharmacists in Cluster3 the relationship is important, but not because of personal reasons, but because of the good price that can be available in a good relationship. It is the only segment, where the economic factor - price and profitability - is very important. The average total satisfaction
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on a 5-point scale in cluster3 is 3.67. For **Cluster4** routines rule the relationship with the supplier. Chief pharmacists in these hospitals are interested in the technical parameters of the procurement; they focus on the operative side of the purchase. Personal relationships are important, but not because of the importance of social values, but because these are tools for making the relationship more predictable, more transparent, more simple. The average total satisfaction on a 5-point scale is 3.75. Chief pharmacists in **Cluster5** show no interest toward the relationship with drug suppliers. They do not report particular importance for any examined value types. All of these 4 hospitals use public procurement for drug purchase applying the outsourcing method for the procedure. These respondents are the less satisfied with the suppliers (average total satisfaction on a 5-point scale is 3.0).

We found no significant relationship between the clusters’ characteristics and the usage of public procurement, nor between the size of the hospital, nor between the personal characteristics of the chief pharmacist (age, number of years spent in charge).

Discussion

As a result of the research we got a picture about the elements of the business relationship value in the relationship between the hospitals and the major drug suppliers on the bases of the responses of the chief pharmacists in 44 hospitals. The social components of the business relationship value play different role in each hospital. This is obvious, since the value generally, and the value of the business relations actually, is always unique, and it depends on the perception of the participants. Considering the research results, it means that the chief pharmacist always combine the factors describing the social value of the relationship in a kind of unique manner. Applying the Integrated Business Relationship Model, we may say, that among the examined hospitals the social value constituents of the business relationship with the drug suppliers are: trust, personal relationships, smoothness of the relationships, the reliability and the goodness of the relationships. According to the results, the significance of the single value components is judged by the chief pharmacists of the examined hospitals differently. The Integrated Business Relationship Model interprets the business relationship value as a combination of economic and social value types. According to the model the two value types define the perceived value of a given business relationship together (Mandják, 2003; Mandják and Simon, 2006). The perceived value of the business relationships is one of the most important motivation factors of sustaining, developing or creating a relationship. This perceived value influences fundamentally the behaviour of the participants in the relationship, and their behaviour related to the relationship. More valuable the relationship is for the buyer or for the supplier; they are more committed to the relationship. Regarding the relationship between the hospital and the drug supplier in this research, we may say, that the various social value types defined by the different inner importance of the value constituents mean different behavioural patterns. These different behavioural patterns are experienced by the suppliers as various expectations of the customers. Consequently, analysis of the relation of the value constituents to each other, may lead us to reveal the examined Hungarian hospitals’ behaviour types toward their drug suppliers.

In the second step of the research on the basis of the cluster analysis we differentiated five behaviour types of the hospitals (see Table 2. and Table 3.). The characteristic of the first behaviour type is the importance of trust based on the frequency of the personal contacts between the participants. This makes the emerging conflicts possible to handle in an efficient and friendly manner. The behavioural method developed together in the relationship makes the reactions of the supplier predictable. The buyer is practically satisfied with the products and services bought in the relationship. The relationship as a whole is more important than the satisfaction with every single product and service in each purchasing procedure. The second behaviour type is characterised by an unambiguous endeavour to a reliable and good relationship. This behaviour type values a long term, smooth relationship where the buyer is always satisfied with the delivered products. The frequency of the personal contacts has no significant importance in the relationship. We assume that the role of the infrequent but efficient personal contacts is more significant, e.g. when they sign annual contracts. The third behaviour type is characterised by a vigorous endeavour to a reliable relationship, which could be primarily achieved by the frequency of the regular personal contacts. However this relationship presumably could be frequently burdened with conflicts which can be handled or accepted by either with the strong buying power over the supplier or either with the defencelessness of the buyer against its supplier. The fourth behaviour type is characterised by a need for a mutual developed, predictable, potential conflict handling facilitating relationship. The smoothness of the relationship is required by a multilevel, intensive personal relationship. In the case of the fifth behaviour type, according to the research results, we may say that the economic value components have important role. They are interested in the most favourable offer in each transaction and they do not make any effort for building up long term relationship with the supplier.
The main contribution of our study is that we applied a particular part of the Integrated Value Model onto a very specific buyer-supplier relationship. Based on the analysis of the buyer side of the relationship, for further research implications there would be useful to investigate the supplier’s value motivation and to compare the both sides of the relationship. It has to be checked in the relationship of hospitals, whether a dyadic approach would be possible at all.

Appendix

<table>
<thead>
<tr>
<th>Value constituent</th>
<th>Indicators</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>
| Profitability of the relationship | **X19.** The products and services purchased in the relationship are available at a reasonable price.  
**X20.** Most of the products and services purchased in the relationship are available at a reasonable price.  
**X21.** Only a few products and services purchased in the relationship are available at a reasonable price. |   |   |   |   |   |
| The role of the relationship with the supplier | **X22.** The relationship with this supplier is important for us, because it provides an appropriate source of supply.  
**X23.** The relationship with this supplier is important for us, because it provides a very cost-efficient source of supply.  
**X24.** The relationship with this supplier is important for us, because the supplier provides very high quality. |   |   |   |   |   |
| Personal relationships | **X25.** It happens almost every day that we have a phone or electronic or written contact with this supplier.  
**X26.** It happens quite often that we have a personal contact with a representative of different management levels of the supplier.  
**X27.** We have this relationship for a long time.  
**X28.** The personal contacts with the representatives of the supplier have a mutual friendly character. |   |   |   |   |   |
| Satisfaction with the product | **X29.** We are satisfied with all of the products and services of the supplier.  
**X30.** We are satisfied with most of the products and services of the supplier. |   |   |   |   |   |
| Smoothness of the relationship (routines) | **X31.** The practice of the relationship with this supplier has a smooth character.  
**X32.** The type of behaviour formed together with the supplier makes us easy to calculate the response of the buyer.  
**X33.** The type of behaviour formed together with the supplier helps to reduce the number of conflicts.  
**X34.** The type of behaviour formed together with the supplier helps us to handle and solve the conflicts arisen in the relationship. |   |   |   |   |   |
<p>| Security of the | <strong>X35.</strong> The relationship can be characterized |   |   |   |   |   |</p>
<table>
<thead>
<tr>
<th>relationships</th>
<th>with the mutual confidence of the partners.</th>
<th>X36. It is a long term relationship.</th>
<th>X37. It has a high probability that the partners in this relationship will keep they promised each other.</th>
<th>X38. The behaviour of the supplier is fair.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emanation of the relationship</td>
<td>X39. The contact with this supplier means a good reference for our existing and potential suppliers.</td>
<td>X40. The supplier considers the relationship with us a reference.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References


Milan