

# Contextual Understanding of Dyadic Relationships

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## Abstract

Dyadic relationships evolve dependent on the quality of the business interaction between two business parties. Expectations are set and realised through a series of business acts directed between the two parties. There exist several frameworks for understanding dyadic business interaction. These frameworks however promote a mere focus on two business parties and do not come with any guidelines of how to relate several dyadic relationships to each other. In this paper, based on empirical experiences from a development of a dyadic relationship in a third party logistic firm's interaction with their customer, a framework of how different dyadic interactions could be related to each other in order to arrive at quality in the focused dyadic interaction is proposed. This framework uses one dyadic framework as a basis and by understanding contextual aspects, such as provision and usage to the focused dyad other interaction areas are identified. These other interaction areas need to be understood in order to derive interaction patterns in the focused dyad with high quality.

**Keywords:** Dyadic interaction, Business interaction, Inter-organisational co-operation, Third-party logistics, Interaction area

## 1 Introduction

Organisations are there for others – other organisations or end-customers. This means that value created by one organisation is to be linked with the establishment and fulfilment of expectations between the organisations involved in doing business. The foundation for acts performed by agents (c.f. e.g. Rose, & Jones, 2004), acting on behalf of each organisation, are created through the performance of inter-organisational acts directed towards the other organisation. Such acts are parts of establishing, fulfilling and evaluating expectations between the involved business parties, i.e. organisations, in a dyadic interplay. Relationships evolve and develop through such dyadic business interaction.

Frameworks for dyadic business interaction have been presented by a number of scholars; confer e.g. Ahlström (2000) for an overview of some frameworks. A well-known reference model for electronic markets has been presented by Schmidt & Lindemann (1998). Within the language/action (L/A) tradition there are several business interaction frameworks, see for example Dietz (1999), Goldkuhl (1998), Weigand & van den Heuvel (1998a), and Medina-Mora et al (1992); all building on the speech act insights from Searle (1969). These L/A-approaches are important since they emphasise actions, communication and interactions in the relations between customer and supplier.

Such frameworks however rely on a strict dyadic focus, which means that the only acts that might be taken into consideration are the acts that constitute the business interaction between the two parties. Is such a strict dyadic focus enough in order to ensure quality in the business interaction? Our experiences, founded in several performed action research projects, show that there is a need to understand other related dyadic interactions in order to put demands on the dyadic interaction that is focused. Similar criticism of a strict dyadic focus has also been put forward by Weigand et al (1998b).

These findings are founded in several action research projects conducted together with a third-party logistic company. As parts of these action research projects we have performed a number of process modelling seminars together with representatives of the third party logistic

company (LogCom) and representatives of the third party logistic company's customer (CusCom). The purpose of these process modelling seminars has been to understand what factors that influence and constitute quality in the business interaction between LogCom and CusCom. For further presentation of findings in this setting confer Haraldson & Lind (2005).

The empirical data used in this paper have been gathered through process modelling seminars. In these modelling seminars questions has been stated and answers to those questions has been documented in business models. The questions and answers have been informed by using Business interAction and Transaction theory (BAT) (Goldkuhl & Lind, 2004) and by using modelling techniques that consist of modelling primitives that could reflect the perspective advocated for in BAT. As the basis for analysis put forward in this paper these business models have been used for deriving action patterns in order to achieve a contextual understanding of the focused dyad.

The BAT-model was introduced in the mid-nineties (Goldkuhl, 1996) – as Business Action Theory. Since then several versions of the BAT-model has been proposed (such as e.g. Goldkuhl, 1998 and Goldkuhl & Lind, 2004). In the latest version (Goldkuhl & Lind, 2004) it is claimed that the BAT-model, used as focusing exchanges in a dyadic relationship, also take contextual factors into consideration. Such factors are the use of the product delivered to the customer as well as the provision needed for the supplier's delivery of value.

The purpose of this paper is to report upon the usage of a dyadic interaction framework for development of dyadic business interaction. This framework has been used to understand the focused dyadic interaction, but also for understanding other dyadic interactions that is related to the one in focus. An important question dealt with in the paper is how a dyadic framework could be used to understand several inter-related dyadic interactions. The research is driven from the question of *how to secure and develop dyadic business interaction by taking other contextual business interactions into consideration*. The empirical foundation is derived from a business analysis performed together with a third party logistic firm and one of their customers.

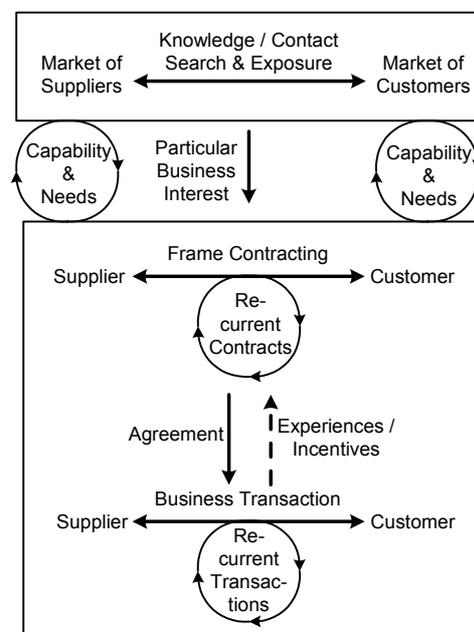
After this introduction we will present the framework for understanding dyadic interaction, the BAT model, that we have used as a generative theory to gather and analyse the empirical findings. Following that we will present some empirical findings, which show the need for a contextual understanding of a certain dyadic relationship. Such contextual understanding is derived from understanding parallel dyadic interaction. In the analysis, following the depiction of the empirical findings, we will present a framework of how to understand inter-related dyadic interactions. The paper will be concluded by remarks, implications and further research.

## **2 Understanding Dyadic Business Interaction**

An organisation's existence is determined by its capability to contribute with value to its customers. A business means that agents, acting on behalf of the organisation (c.f Ahrne, 1994), performs actions oriented towards somebody else (Goldkuhl & Röstlinger, 2002). In a business interaction two roles can be distinguished, supplier and customer. Based on communicative (Habermas, 1984) and language/action theories (Searle, 1969) it can be found that a business interaction sequence involves setting and realising expectations between the two parties. In the BAT-model (Goldkuhl & Lind, 2004) this business interaction sequence is divided into a number of different communicative and material exchanges. These are exchange of proposals, commitments, fulfilments as well as assessments (c.f figure 1). These

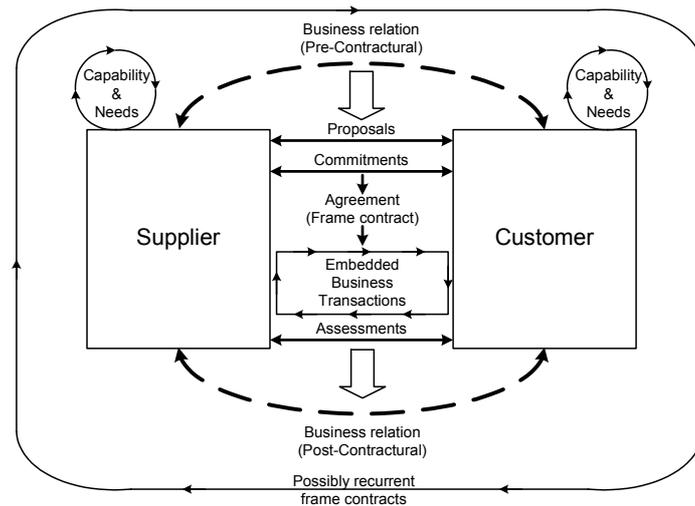
exchanges constitute a business transaction. These exchanges are constituted of interchanges in patterns of initiatives and response where one response also serves as an initiative for another response (Linell, 1998; Schiffrin, 1994). For a further elaboration initiatives and responses constituting the exchanges advocated in the BAT-model confer Lind & Goldkuhl (2003).

The original BAT-model is a six-phase model describing generic business interaction logic (Goldkuhl, 1998). The basis is about one party having capability (= supplier) and another party lacking capability (= customer). These capabilities are developing (on each side) during business interaction. BAT describes interaction between particular actors as well as interaction when expressing a general interest aiming at potential customers/suppliers (Goldkuhl & Lind, 2004). In the latter BAT-model two levels of business interaction are thus distinguished; the market level and the dyadic level (see figure 1). On the market level suppliers and customers search for knowledge and contacts concerning the correspondent party. On this level there is also an exposure of a supplier's capability towards a market of customers and vice versa. The interaction on this level is, according to BAT, driven by a *general business interest* of both suppliers and customers.



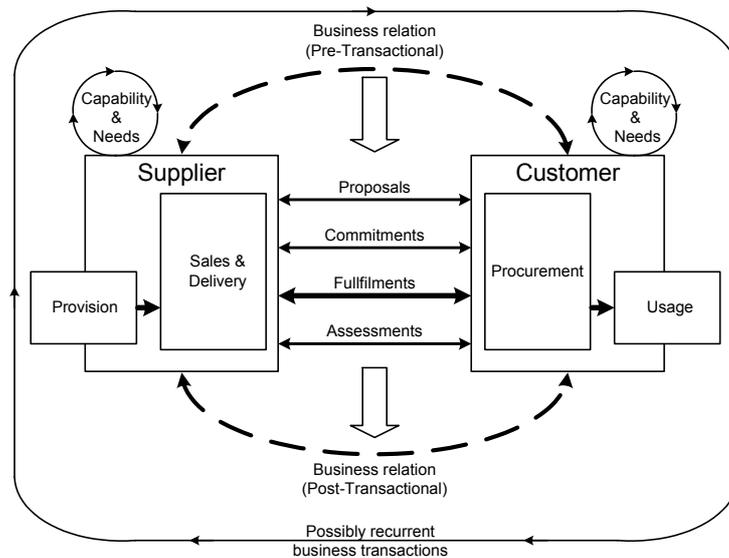
**Figure 1:** Levels of business interaction (Goldkuhl & Lind, 2004)

When a contact is established between a particular supplier and a particular customer, the general business interest is turned into a particular business interest. The business interaction moves to the dyadic level. On this level there is a distinction made between frame contracting and business transaction (see figure 2 and figure 3). Sometimes frame contracts govern business transactions. Other times business transactions are instead governed by separate (single) transaction orders and no frame contracts exist.



**Figure 2:** The constituents of frame contracting (BAT frame contracting transaction model) (Goldkuhl & Lind, 2004)

Figure 2 depicts that frame contracting consists of two phases of exchange prior to recurrent business transactions (covered in figure 3) and a phase of assessment after the realisation of these business transactions. The frame contract agreed upon in the commitment phase of frame contracting thus governs the realisation of business transactions.



**Figure 3:** The constituents of the business transaction (BAT business transaction model) (Goldkuhl & Lind, 2004)

From figures 1, 2 and 3 it can be derived that there are a number of phases of interaction covered in the BAT-model. A phase is distinguished by the type of exchange made between the parties in the business interaction. In the BAT-model both communicative and material exchanges are acknowledged. If one considers the case of realisation of one single business transaction the phases of interaction covered are:

- 1) knowledge/contact search and exposure
- 2) exchange of proposals
- 3) exchange of commitments

- 4) exchange of fulfilments and
- 5) exchange of assessments.

In the case of realisation of one frame contract embedding several business transactions the phases covered are:

- 1) knowledge/contact search and exposure
- 2) exchange of proposals (frame contract level)
- 3) exchange of commitments (frame contract level)
- 4) recurrent business transactions involving:
  - (exchange of proposals)
  - exchange of commitments
  - exchange of fulfilments
  - exchange of assessment
- 5) exchange of assessments (frame contract level)

The BAT-model proposes different aspects of *dynamic* business interaction. This concerns the continual development of capability, needs and business relations. But also recurrent frame contracts and business transactions based on made assessments. The basic unit of analysis is the business act, which is a component constituted of action pairs, exchanges, business transactions and transaction groups (Lind & Goldkuhl, 2003). The model is characterised as a comprehensive framework that (ibid):

- see business action as a building block,
- emphasise the exchange character of business interaction and
- adopt a symmetric view on business parties and their interaction,
- acknowledge both communicative, material and financial interaction.

The BAT-model is a generic framework for business dyads to be understood as a pragmatic instrument. The scope of the model is to be used for evaluation, modelling and design of business interaction (ibid).

### **3 Empirical Findings**

During 2004 a series of process modelling seminars was conducted, involving two organizations; a third party logistic company and one of their customers (assigner). The aim was to enhance the mutual relationship between the two parties involved and to establish a foundation for IT-based business interaction. During the seminars both parties were present, with representatives from different business areas. The seminar group consisted of business representatives (approx, 10 individuals), a seminar leader and an assistant seminar leader.

The process modelling sessions included a number of different areas;

- a business definition, in order to identify business characteristics
- a co-operation analysis, which on a comprehensive level gave an initial understanding of the business logic, a detailed analysis resulted in a number of inter-action diagrams
- a process analysis, containing a detailed analysis of the business action logic with its actors, pre-conditions and result (action diagrams). The action diagrams were abstracted to comprehensive process diagrams.

During the process modelling, different areas of improvement were identified. These aspects were later unified and analyzed in order to reveal possible connections with identified goals and problems. The process modelling was concluded by a final report, approved by all

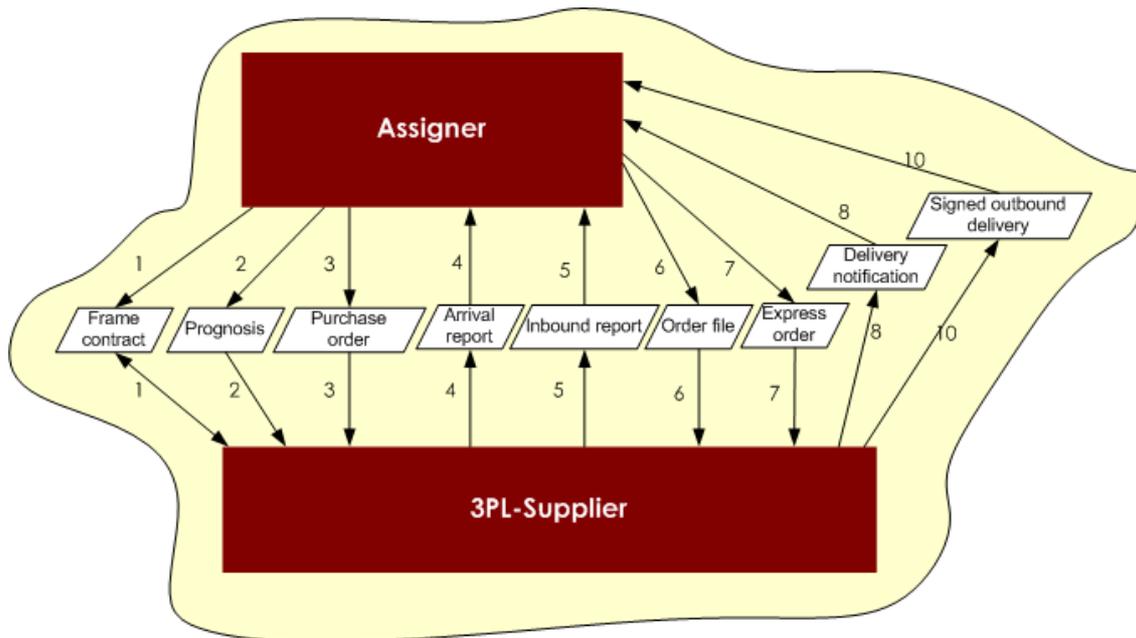
participants. The final report can be seen as an instrument or a base for further business development.

In this section, we introduce the two companies; LogCom (the third party logistic company) and their customer CusCom. CusCom is a retail home decoration company and have several retail shops. The shops product assortment is regulated from the central purchasing management. Seasonal purchase is conducted based upon estimation of customer needs and orders are then placed to the product supplier. After quality controls, the products are delivered to LogCom, who handles inbound logistics, warehousing, and outbound logistics. The product assortment is divided into two main groups; *distribution products* and *refilling products*. *Distribution products* are controlled by the central purchasing management, and are distributed to the shops based on a distribution plan. The other product type can be ordered based on demand directly from CusCom shops. The central purchasing management is responsible for coordinating the activities regarding distribution of goods from LogCom to the shops.

When decided what, when and to who to distribute CusCom issue a sub-order towards LogCom. Sub-orders can occur several days a week. The amount of sub-orders vary between 30 000 till 100 000 units per occasion, depending on season. In order to inform about future sub-orders, prognostications regarding future needs of capacity are supplied to the third party. These estimations only include the *refilled products* (approximately 60% of the total product assortment). *CusCom* has a central logistics department, managing the central coordination of deliveries, and are divided into in- and out delivery. Depending on the character (operative or strategic) and which part of the delivery (in or out) the issues concerns, different actors take part in the communication.

The financial relation between the parties is regulated by the amount of incoming goods, the amount of outgoing goods, stock rent, and additional services. The two parties have a long-term relationship, which is regulated by a frame contract. The frame contract includes for instance responsibility regulations, quality norms, cost aspects, etc. The cost for a business transaction is determined by a certain fee. The frame contract is considered vague concerning the regulation of how the interaction between the parties should occur prior to the commitment embedded in each sub-order. The frame contract does for example not regulate the communicative functions as well as the propositional content concerning the process of communicating about prognostications. This vagueness has the effect that each party acts for their own best, rather than contributing to a win-win situation. For further considerations about the constituents of frame contracts confer Haraldson & Lind (2005).

In the picture below the focused dyad (between the 3PL supplier and their customer – the assigner) is depicted. A selection of action results are visualised in the figure and in which order in the interaction they occur.



**Figure 4:** The dyadic interaction in focus

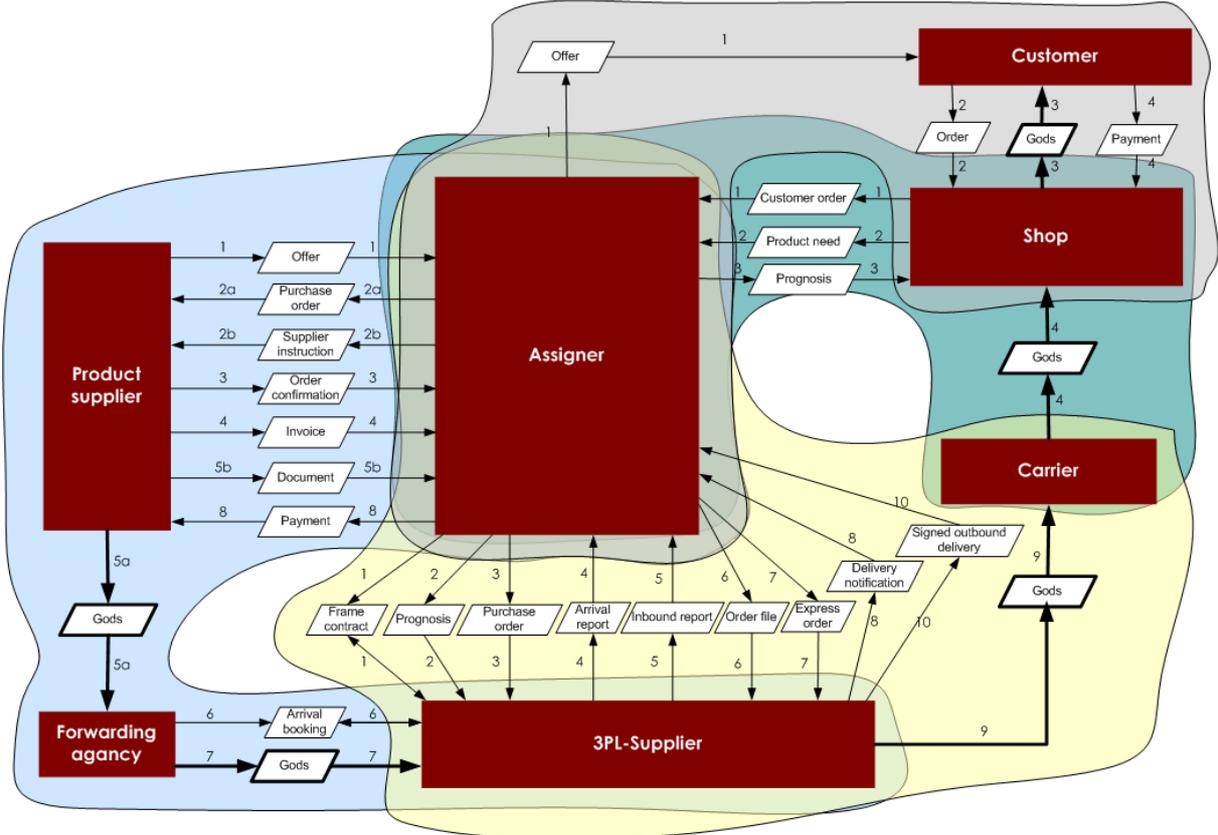
Haraldson & Lind (2005) acknowledge the importance of avoiding broken patterns. In order to discuss broken patterns, we need to identify the action pattern that constitutes 3PL cooperation. Business interaction is constituted by several inter-related business acts, by initiatives and responses, constituting action patterns between the two parties. In other words, we need to identify how different action results are dependent on each other, as initiatives or as responses. One action serve as an initiative for another action result, and/or serve as a response to an initiative. By tracing the relations between different action results, we start to reveal action patterns that constitute 3PL cooperation (interaction between CusCom and LogCom).

In the case study it was however revealed that the inter-organisational acts between the CusCom and LogCom were effected by and had effects on inter-organisational acts constituting action patterns involving other business parties. Thus there was a need to understand other dyadic interactions related to the focused one (between the assigner (CusCom) and the 3PL supplier (LogCom)). In order to complete the action pattern, i.e. understand the whole picture, concerning the focused dyadic relationship the scope was expanded. For the assignment to be fulfilled the 3PL cooperation requires different actions performed by actors (= organisations) besides the 3PL supplier and their assigner (customer).

The different actors involved in fulfilling the assignment could be seen as the interaction parties in different areas (i.e. interaction areas). In other words 3PL cooperation contains of several dyadic interaction, essential for fulfilling the overall assignment. When analysing 3PL cooperation we can identify several dyadic relations that in different ways effect the relation, i.e. the action pattern, between the 3PL supplier and their customer. In figure 5 below these interaction areas are depicted. The interaction areas form a meaningful whole of actions performed by two or several parties. Within each interaction area, there are a several action results, forming exchanges between supplier and customer roles. An exchange is formed by related initiatives and responses (of the same type).

An interaction area is determined based on the contextual aspects put forward in the BAT-model. In this empirical setting the role of the assigner has been used as the point of departure

for conceiving the role of the 3PL supplier in the bigger picture. In the picture below four interaction areas is depicted. The most obvious interaction area is the one determined by the exchanges between the assigner and the 3PL-supplier. The second one (the one covering the assigner and the product supplier and the forwarding agency) covers interaction needed for establishing and ensuring provision. The third one (the one covering the assigner and the shop and the carrier) covers interaction needed for determine which (as well as the amount of) goods to be supplied to the shop. The fourth interaction area covers the patterns needed for letting the customer (consumer) buying the goods from the shop. As can be derived from figure 5 the interaction areas take the business performed by the assigner as its starting point. In order to derive action patterns with high quality between the assigner and the 3PL-supplier these three other (#2, #3 and #4) interaction areas need to be taken into consideration.



**Figure 5:** Interaction areas in 3PL cooperation

To exemplify how different interactions are connected to each other, we can use three levels of business interaction, such as the frame contract level, the prognosis level and single sub-orders level. These levels are derived from the BAT-level presented in section 2. The frame contract level refers to the BAT frame contracting transaction model (see figure 2). The prognosis level refers to the first exchange phase in the BAT business transaction model (see figure 3) – exchange of proposals (c.f. also Haraldson & Lind, 2005). The third level refers to the subsequent exchanges in the BAT business transaction model (see figure 3). The three levels have their own action results that we could trace to other action results in the business.

The frame contract is used to regulate the relation between the 3PL supplier and their customer. The contract is dependent on other contracts, that the customer have been established with for example the shops, the supplier, the product supplier, the carrier and others. It is in these surrounding contracts that the preconditions for the 3PL cooperation are

set and it is therefore important to consider such issues when establishing a contract (serving to regulate the relation) between the 3PL supplier and the customer. The 3PL cooperation has the mission to deliver certain products, in a certain way, at a certain time and these factors are established in the agreement made between the 3PL supplier and their customer.

The prognosis is another action result that could be seen as a reservation of capacity made from CusCom to LogCom (c.f. Haraldson & Lind, 2005). The prognosis includes an estimation of a certain need on a given time. This information could then be used as a planning instrument for LogCom. Both the frame contract and the prognosis are examples of instruments for establishing and maintaining action quality. They are dependent on each other and works on different business interaction levels. The sub order could be characterised as an indirect response to the mentioned action results above.

#### **4 Analysis – Expanding the Scope**

To exemplify how action results are related to each other within and between different interaction areas, we have analysed it from the patterns of initiative and responses. Our starting point has been the dyadic interaction between the 3PL supplier (LogCom) and the customer (CusCom) and the action results within that interaction (*see figure 5 above*). This analysis has been driven by finding the reasons for, and effects of, actions performed in the focused dyad. Reasons, i.e. initiatives and other informational pre-requisites, were both actions performed in the focused dyad, but also in other inter-related dyads. The same goes for the effects, i.e. responses and other informational results, created by the actions performed in the focused dyad.

The overall framework regulating the relation between the two parties is, as mentioned above, related to other contracts established in the contextual environment. One example is the instruction that CusCom gives to the product suppliers when placing the product order. Other examples are contracts with the shops, including for example schedules for delivery, and contracts with carriers and forwarding agents. These relationships are essential since the contracts influence the potential for the 3PL business to fulfil the overall assignment. Preconditions for the business to act, are established in these contracts. Dependent on what factors the frame contract between the 3PL supplier and their customer includes it influences the roles of involved parties and also requirements on performed actions and behaviour. The frame contract could be used as an instrument to obtain and maintain action quality in 3PL interaction by considering a wider range than the dyad between the 3PL supplier and their customer.

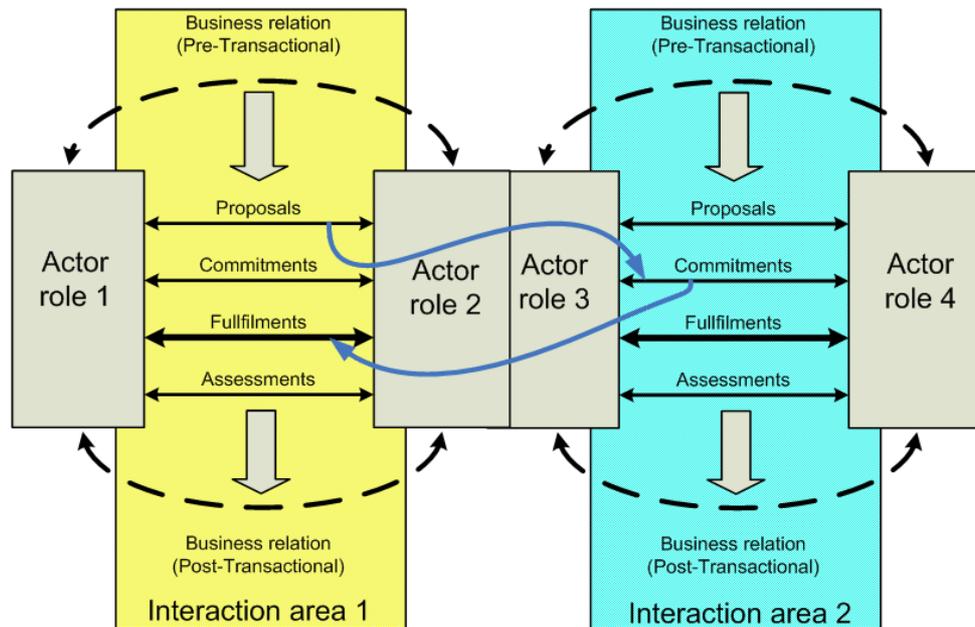
In the case the prognostication, handled over from CusCom to LogCom, functions as initiative for the order file and also for the physical delivery from the warehouse. More interesting in this case is what the prognostication is a response to. Depending on the propositional content in the prognostication, the base for establishing the report will vary. In most cases the prognosis includes information that is translated from agreements made by different parties. In case of a customer order, the shop assistant promises the customer a certain product, at a certain time and to a certain price. An offer made by CusCom to potential customers, also could be characterised as a promise. This kind of information is included in the prognostication. Further, it is possible for the shop to place orders in several ways to CusCom, and CusCom then makes a promise to deliver it. This information is also included in the prognostication that CusCom sends over to LogCom. The prognostication could therefore be seen as an instrument in the process of fulfilling the agreement made by different parties. Some products are pushed out to the shops (i.e no order precedes the delivery), in these cases

a prognosis is given to the shops from the central unit (CusCom), and this information can be regarded as a promise of delivery.

In the case study the order file represents the actual suborder and is handled over from CusCom to LogCom. The file contains information about what products to prepare for delivery. The order file is multi relational, both concerning what it response to and the responses it as an initiative causes. The order file is a response to the inbound report (which is a report made by LogCom in connection to product delivery) and the prognosis (the estimation that LogCom received from CusCom previous to the order). The order file is also an initiative to other action results, such as the signed outbound deliveries (a report that LogCom establish when the goods are ready to leave the warehouse). This report is an important confirmation and also an act implying a fulfilment of the order assigned by the order file. Further, the order file also functions as an initiative for the physical delivery of goods. The order file must be sent over from CusCom to LogCom, prior the physical delivery and the action of handing over the goods to the carrier, is also an act in fulfilling the mission assigned in the order file. The above example shows, except from the physical delivery, relations within the focused interaction area.

We can also reason about the action pattern identified from the phases that constitutes a business interaction mentioned above; establishment, fulfilment and evaluation of fulfilled assignments. When analysing the action pattern that were identified earlier from these three phases we see that different actors are involved. This implies that an assignment can be established between two parties, fulfilled by other actors and further more evaluated by another party. An example from the case study is the purchase of products is an agreement between the assigner and the product supplier (establishment), the fulfilment of that product order is fulfilled by the product supplier and a forwarding agency, and subsequently the 3PL business, who also is the one evaluating the fulfilment of the assignment fulfilled by the product supplier. Interestingly you would probably say that the forwarding agency acts on behalf of the product supplier and the 3PL supplier (LogCom) on behalf of the assigner (CusCom).

In the figure below (figure 6) we have visualised these situations in a principle framework to be used for helping the analyst to relate to other dyadic relationships when focusing on a certain dyad. In the figure we put forward that several actors could inherit different actor roles in the different phases of several dyadic interactions. The same actor could have different actor roles in different dyadic interactions. The framework also addresses the need for paying attention towards several levels of business interaction, i.e. the levels of market interaction, frame contracting, prognosis, business transactions etc. By putting forward several parallel dyadic interaction relationships between actions performed in one dyad could be related to another dyad.



**Figure 6:** Inter-linked BAT-models for understanding multi-organisational and multi-level dyadic interaction

This means that we have to see 3PL cooperation from a broader perspective, including the different parties involved in establishing, fulfilling and evaluating the overall assignment. We go beyond the dyadic interaction in focus and regard the different inter-organizational interactions as parts of a multi-organisational interaction. The same discussion is valid for the action patterns as well – different levels of interaction. We have in this paper discussed patterns on three levels of interaction, i.e. the action patterns on the three levels are parts of a larger action pattern, constituting the 3PL cooperation as a whole.

The BAT-model has proven to be a useful model for both describing and understanding as well as developing a business interaction in a dyadic relation, i.e. between suppliers and customers. As mentioned above 3PL cooperation contains several dyadic interactions, and below we elaborate on how BAT functions as a model in such a business.

## 5 Conclusions

In this paper we have studied the use of the BAT-model as one dyadic framework for understanding several inter-related dyadic business interactions. This has been done since there is a need for understanding contextual aspects in relation to the focused dyad. In the BAT-model contextual aspects are emphasised by taking provision for establishing delivery capability as well as the usage of delivered value into consideration. The BAT-model has proven to be a powerful generative tool to be used for deriving knowledge about several parallel ongoing dyadic interactions.

The overall purpose of using the BAT-model for understanding dyadic relationships is to ensure that the business transactions covered in the dyadic relationship is performed with quality. In this paper we have shown that it is important to understand related dyadic relationships in order to achieve quality in the focused relationship.

To handle such task it has been identified that there has been a need to identify different interaction areas. These interaction areas are different “meaningful” entities delimited by the action patterns covering a certain business transaction (with possible appurtenant frame

contracting process). An interaction area covers a number of actors involved in the same business transaction as well as the actions between them directed to other actors covered by the same interaction area. An interaction area is determined by needed provision as well as important following value-adding activities in the value chain. As expressed in the BAT-model (Goldkuhl & Lind, 2004) “A dyadic framework, in order to be contextual, should indicate relations to other parts of the value transformation context, i.e. what happens before and after the actual business transaction”. In this paper we have put forward how such interaction areas could be identified in order to emphasise needed aspects in the focused dyad and thus arrive at high quality interaction in the focused dyad.

As identified in the empirical setting there are several interaction areas that involve more than two actors. Our interpretation is that the BAT-model advocates two actor roles – the supplier role and the customer role. In the empirical setting we have seen that it is common that several actors might adopt one of the actor roles - especially in the different phases of the business transaction. Thereby it is important to analyse, and develop, the actions performed by the notion of initiative and response in order to identify which actors that become involved in the interaction area.

Since the BAT-model builds upon the idea that actions are related to each other by initiative and response it is possible to relate the focused dyadic interaction to other ongoing dyadic interactions. Initiatives and responses do have relationships to other interaction areas. In this paper have a thorough analysis of related initiatives and responses not been put forward due to space limitations. The resulting division of the setting in several interaction areas are however a result of such an analysis. This phenomenon has earlier been identified by Weigand et al (1998b) as “the level of scenario”. Lind & Goldkuhl (2003) claim that such widening in scope should be seen as a horizontal expansion. The BAT-model does however cover some aspects that direct attention towards such expansion. Relations to other parts in the value transformation context are acknowledged in the model. In this paper it has been proven that there is a need to understand several actors’ roles, adopting different actor roles, in a larger context than the focused dyad itself.

Could the same conclusions be derived by using another framework for business interaction? We believe that there are some essential characteristics, as mentioned above, in the BAT-model that makes this horizontal expansion possible. Needed contextual aspects in relation to the focused dyad are not emphasised in Action Workflow or in DEMO. The attention towards actions and relationships towards other actions performed by actor roles are important for this task. Such aspects need to be covered in chosen dyadic framework in order to manage a contextual understanding of a focused dyad. Of course the same types of patterns, in several interaction areas as discussed in this paper, could be modelled by using Action Workflow or DEMO, but we claim that these two modelling methods do not advocate such intentional design (Cronholm & Goldkuhl, 2002) as put forward in this paper. It would rather be modelling by chance by using these two methods. By using the proposed supplementation of the BAT-model the creation of high quality dyadic interaction can be done by intentional and conscious design.

In this paper we have identified some issues for further research. We have had a strict focus on inter-organisational action involving several actors. What would it mean to adopt the same line of reasoning in an intra-organisational setting? Within organisations there are agents, acting on behalf of the organisation, adopting different roles. It would therefore also be valuable to further study the notion of delegation as a mean for determining interaction areas.

Another issue to study more thoroughly would also be to investigate what demands that need to be put upon the propositional content of performed business acts in the dyadic context.

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