

The generics of business interaction - emphasizing dynamic features through the BAT model

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Abstract

There is a growing complexity in business interaction. Today there exist several models for studying business interaction. There are such models founded in the language action tradition and these models have shown to be fruitful. Existing models are however not comprehensive enough. In this paper we will develop a generic model, which is one step towards a more comprehensive model than the existing ones. This model, which takes the BAT model as starting point, will acknowledge different contractual levels as well as distinguishing between market and dyadic business interaction. Important characteristics of this new generic model are dynamic features such as dynamic capabilities, dynamic business relations as well as recurrent business transactions.

1. Introduction

There is a growing complexity in business interaction. New technologies are introduced together with new forms of interaction between customers and

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suppliers. The support of information technology is increasing in different phases of business interaction. There are still new forms for e-business to be expected. Business networks are emerging and there is a differentiation of business relationships. The network society is here to stay (Castells, 1996). This calls for improved understanding of business interaction. There are scientific as well as practical needs for ways to interpret and understand different business interaction situations. Conceptual models of business interaction can guide researchers and practitioners when studying the interaction between business parties. Such models can be used for interpretation, evaluation, modelling and design of business interaction. To be useful, such models should be generic, i.e. they must conceptualise essential and general properties, and they must also be possible to utilise and adapt to many different inquiry and design situations.

Within the language action tradition (LAP) many models for business interaction have been presented. There are generic models for coordinative work, which can be used for studying business interaction as well for other types of work. The origin of such models comes from the Conversation-for-action (Cfa) schema by Winograd & Flores (1986). The Cfa schema was the basis for the Action Workflow approach (Medina-Mora et al, 1992). Also the DEMO approach (Dietz, 1999) belongs to this type of models. As indicated above, these models are not exclusively oriented towards business interaction between customer and supplier. They describe the coordination of work between an initiator and a performer. The coordination described can be a business interaction between a customer and a supplier, but it can also be any intra-organisational coordination. Action Workflow and DEMO are not adapted (i.e. restricted) especially to business interaction.

These models have thus been considered to be too broad and inclusive (Verharen, 1997) therefore other models, more adapted to business interaction, have been developed. The BAT model (Goldkuhl, 1996, 1998) is one such example. Weigand & van den Heuvel (1998) have with inspiration from Action Workflow, DEMO and BAT tried to develop a comprehensive framework for business interaction¹. This framework consists of five hierarchical layers. With inspiration from this layered framework Lind & Goldkuhl (2003) have extended the BAT model. A complementary layered framework has been formulated (ibid). These two layered frameworks have been studied by Jayaweera (2002), who presents a third one consisting of four layers.

Originally outside the language action tradition, Schmid & Lindemann (1998) have presented a reference model for electronic markets. This reference model has in later works (Lechner & Schmid, 2000) been expanded to a more general framework (a media reference model) and also adapted to LAP concepts. Partially

¹ Actually, their focus is e-commerce, but their framework seems to be comprehensive enough to cover business interaction in general.

based on this model, Schoop (2002) has developed a framework for business interaction especially devoted to e-negotiations.

There exist thus several generic models for business interaction. Although the merits of all these models, we do not consider, at present state, any model to be exhaustive enough for studying business interaction. The argumentation for this will be shown later in the paper. The rationale for our work is a search for a comprehensive generic model for studying complex business interaction. We will in this paper take one step further towards this goal. We will build explicitly on the BAT model and propose modifications and extensions to this model. We find the BAT model to be the most appropriate one to redevelop towards our goal of a comprehensive business interaction model. We will give arguments in section 3 below, where we make a brief assessment of the different models mentioned above.

We will have a *business dyad focus* in our analysis. This means that we will mainly focus on the interplay between a customer and a supplier. However some other aspects in the dyadic context need to be taken into consideration. We are aiming for a generic model covering both B2B and B2C interaction. We also cover different types of products; both goods and services, and both standardised and tailor-made products.

Our dyadic focus means that we do not cover third-parties or other actors in the business exchange process as appearing in some frameworks (e.g. Timmers, 1999; Weigand & van den Heuvel, 1998). This should not be interpreted as a denial of the importance to include other type of actors in interaction frameworks. In order to include other parties we need, however, to have a clear conception of the dyadic interaction between a customer and a supplier. This is complex enough for a starting point.

We conceive each business party as an actor. Each business party performs several interactive actions, i.e. actions that are directed towards the other business party. These actions are performed by different organisational agents (humans or artificial) acting on behalf of the business party (Ahrne, 1994; Taylor & van Every, 2000). This orientation on business interaction implies a focus on actions between the two business parties and thereby internal actions within each business party, e.g. principal-agents relationships, are omitted. For certain purposes the modelling of business interaction should be possible to expand to cover also internal actions and relations (Weigand & de Moor, 2001; Lind & Goldkuhl, 2002).

After this introduction we will illustrate complex business interaction by using an example derived from experiences from an action-research oriented case study, which also be used later in the paper. Following that we will briefly assess a number of LAP models useful for modelling business interaction. This assessment is used as the basis for the development of a comprehensive generic model for business interaction. This generic model is described in section 4 to 6, each section describing different parts of the model. Each section also includes a description of

needs for development, founded in theory and in practice, in relation to the BAT model. Summarising the proposed generic model, discussing its usefulness and identifying issues for further research concludes the paper.

2. A brief example of business interaction

Business interaction concerns actions directed from one organization to another. Such actions are logically related to each other in order to form a coherent pattern of business interaction. Many times these patterns are complex and there exist many different patterns between one supplying company and its different customers. In this section we will illustrate complex business interaction through an example. The example is based on an action-research oriented case study performed at a steel company, here named Steelco. We will use this example later in our paper when illustrating different types of business interactions.

Steelco is a manufacturing company, which mainly transforms steel into pipes for hydraulic cylinders. Steelco has different ways of performing business, i.e. the company takes part in different business interactions. The strategy that Steelco enacts is to have a variety of ways of interacting with their customers. One goal is to build long-term relationships with its customers.

One way of performing business is to perform one-time-shop selling from the standard stock. This interaction starts with Steelco exposing its product repertoire to potential standard stock customers. The exposed product repertoire is used as the basis for the customer to contact Steelco and to negotiate a business deal. The product repertoire is exposed both by using advertising folders and by using an e-commerce site. Since the products that are subject for the business deal are stored in stock the lead times for delivering the products can be short.

Some customers come back and buy products from the standard stock several times. This means that business interaction with the same customer is recurrent. Steelco makes thus business deals with some customers on a repetitive basis. With some of customers Steelco has formalized this recurrence into more long-term business contracts, so-called frame contracts. This process of formalization of the business relation is founded on an emerging trust between Steelco and the customer. The business parties recognize an interest to tighten the business relation. Such long-term contracts mean that a number of business transactions will be framed within the contract. The formalization of the business relation through long-term contracts means that the customer as well as Steelco needs to make a prognosis of their needs and capacity for future business deals. The advantage for the customer is a guarantee of supply of products and a possible reduction of the price and for Steelco the advantage is a tighter relationship to the customer as well as a guarantee concerning a selling volume and thereby the utilization of the production equipment and other infrastructure. To enter a frame-contract relation demands a mutual adaptation of each party's business processes.

Both one-time-shop and frame contract based selling is made with products already developed. Steelco performs however also development of tailor-made products for particular customers. The customers' needs for tailor-made products have influenced Steelco to establish and sell development capability. The process of developing these products builds upon a high involvement of the customer. Steelco considers the development of tailor-made products as a way to drive their own capability regarding knowledge about new product needs. The business process facilitating the development of tailor-made products also means that Steelco will contribute with their development capability to develop the customer's capability. The development of some of these tailor-made products will now and then require investments in new production equipment and production routines at Steelco. When the product is developed and has been tested the customer and Steelco might enter a more long-term business relation concerning the developed product. The new developed product might be warehoused for the particular customer. The newly developed product will thus be sub-ordered within a frame contract.

Dependent on the situation the tailor-made product might also be offered to other customers. Thereby the development of tailor-made products drives the development of the assortment at Steelco. The development of tailor-made products is an example of product development for particular customers. There exists however also non-customer driven product development at Steelco. On a regular basis the assortment is evaluated in relation to market needs. This evaluation might drive the need to develop new products for potential customers, but also to liquidate some products and possibly exchange these with new products. The change of the assortment might also affect Steelco's production equipment and routines as well as other business processes at Steelco. The product development is also tightly connected to market development. During the latter years Steelco has developed an e-commerce site for one-time-shop customers buying standard assortment products with success.

This mix of different ways of performing business affects Steelco to continuously develop both business relations with the customers as well as maintain a competitive product assortment. By balancing between standard and tailor-made products as well as balancing between one-time shopping and frame contracting the utilisation of Steelco's infrastructure can be efficient. This efficiency is however dependent on the different business interaction patterns which exist between Steelco and its customers.

3. Assessing business interaction models

In section 1 above we mentioned several LAP approaches to conceptualising business interaction. The strength of the language/action perspective is that it is based on the idea that communication is not just transfer of information. When you

communicate you also act (Searle, 1969); i.e. you do something in relation to the addressee. Actions are performed including building commitments and agreements between business parties. Relations are created between business parties during performance of business interacts. Agreements are to be regarded as the backbone of LAP-approaches. Both agreements on what to do and agreements on performed actions are accentuated.

The different LAP approaches can be divided into general coordination approaches (like Action Workflow and DEMO) and those approaches that are specifically adapted to business interaction. Action Workflow (Medina-Mora et al, 1992) regards the conversation flow in an action workflow loop. The basic sequence of actions in the action workflow loop is based on the idea of the two interacting roles of customer and performer. The action workflow loop is divided into four phases; preparation, negotiation, performance and acceptance. In DEMO (Dietz, 1999) the core concept is the transaction. A transaction is a pattern of activity performed by two actors; the initiator and the executor. A transaction is composed of three phases: the Order phase in which two actors come to an agreement about the execution of some future action; the Execution phase, in which the negotiated action is executed; and the Result phase in which the actors negotiate an agreement about the result as brought about in the execution phase.

Some general ideas concerning roles and actions from these approaches can be used. However, these approaches must be rejected as proper conceptualisations of business interaction due to their general character. These models are limited towards how *one* party (the supplier) satisfies the other party's need. These approaches are one-way around models (from customer via performer back to customer) (cf Goldkuhl, 1996). Such asymmetric focus is inappropriate for business interaction. One flaw in these one-sided models is that the act of payment becomes suppressed. Business interaction is more complex than these loop models show (ibid; Verharen, 1997). A business interaction consists of exchanges – both communicative and material exchanges. In Action Workflow material acts (such as delivery) are excluded. A serious flaw in these models is also the assumption of strictly pre-defined action patterns. Such assumption can obstruct the analyst in reconstructing how business interaction actually is performed (Goldkuhl, 1996; 2003; Holm & Ljungberg, 1996). A more open-minded approach towards business modelling, than these strict sequences of actions, need to be adopted. The use of a theoretical model should not mean forcing pre-defined patterns on empirical data.

As a reaction towards deficiencies like these, the BAT-model was introduced (Goldkuhl, 1996; 1998). BAT is a six-phase model describing generic business interaction logic (figure 1). The model describes interaction between a supplier and a customer. It starts with business prerequisites of customer and supplier and goes through business communication (with e.g. offers, inquiries, negotiation and contract) to fulfilment (through delivery and payment) and ends with the satisfied product usage or discontent and possible claims. The phases are 1) business

prerequisites phase, 2) exposure and contact search phase, 3) contact establishment and proposal phase, 4) contractual phase, 5) fulfilment phase, and 6) completion phase. The BAT model describes generic business actions between a customer and supplier. Such business actions can be both communicative acts (e.g. offer, order, and confirmation) and material acts (such as delivery of products or transfer of money). The character of these business actions is interactive. This means that one action performed by one business party is directed towards the other business party. These actions are grouped within different exchange types, which constitute the different phases described above. This means exchanges of e.g. proposals, commitments and fulfilments. The concept of business action is an important building block for conceptualising business interaction. Lind & Goldkuhl (2003) have shown how business actions can be grouped to larger units of business interaction in a layered framework. The different layers are business action, action pair, exchange, business transaction, and transaction group.

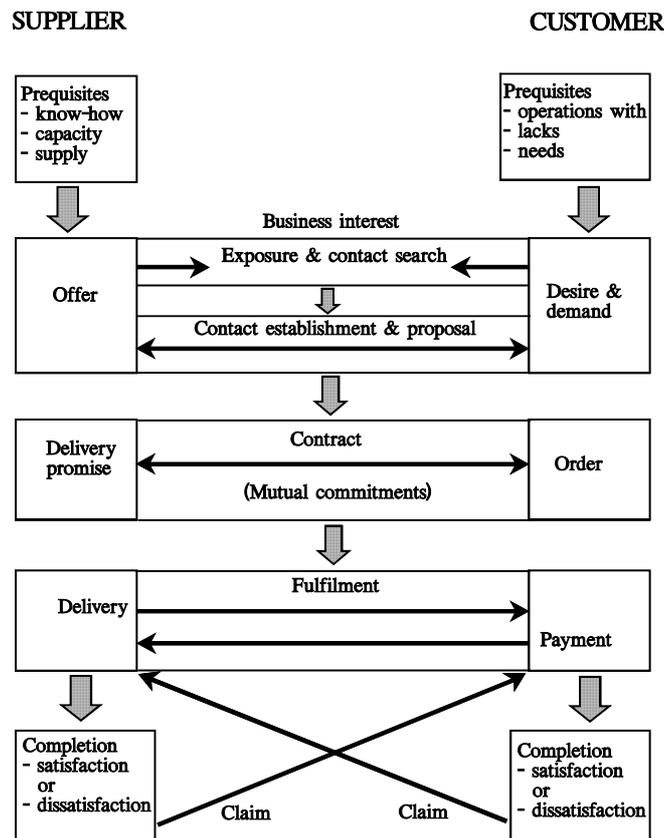


Figure 1: The BAT'98-model of business interaction (from Goldkuhl, 1998)

Weigand & van den Heuvel (1998) have made an important contribution to the LAP-based theorizing of business interaction. Inspired by the LAP-oriented

approaches Action Workflow, DEMO and BAT, Weigand & van den Heuvel (ibid) propose meta-patterns for electronic commerce/business interaction in a framework consisting of five layers. The concept of speech act is the first layer and the basic unit of analysis. The other layers are transaction, workflow loop, contract, and scenario.

The layered pattern architecture presented by Weigand & van den Heuvel is an important step towards relating different LAP frameworks for business interaction. There are however some flaws in their architecture; (confer criticism in Lind & Goldkuhl (2003)). The different approaches integrated in the framework build upon different assumptions and use different conceptual constructs, which means that the approaches and their constructs are not always compatible and thus possible to integrate. In their layered framework there seems to be an insufficient exchange orientation. They do neither acknowledge material actions as building blocks for business interactions. Lind & Goldkuhl (2003) have also identified consistency problems in the layered framework and they have presented an alternative layered pattern (ibid) as one part of the BAT framework; see above for description of these layers. These two layered frameworks have been studied by Jayaweera (2002), who presents a third one consisting of four layers: Economic event, economic commitment, economic contract, agreement (ibid). He has tried to adapt the UN/CEFACT framework for e-commerce (UN/CEFACT TMWG, 2002) to this language/action thinking. When doing this, unresolved inconsistencies unfortunately appear. A non-LAP terminology (using concepts as economic event) is mixed with LAP concepts.

In the introduction (section 1 above) we also mentioned the media reference model (MRM) by Schmid & Lindemann (1998) and Lechner & Schmid (2000). This reference model consists of two dimensions; the horizontal and the vertical dimension. The horizontal dimension contains of four identified phases of market transactions. These are the knowledge phase, the intention phase, agreement phase and the settlement phase. The vertical dimension consists of four views; the business view, the transaction view, the services view, and the infrastructure view. We interpret these four views as different levels of abstraction, in which different aspects of the business transaction consisting of the three phases are focused on each level. The MRM model has in later development been adapted to LAP constructs. The LAP orientation has however not yet been fully accomplished. Petersson & Lind (2004) have pursued a comparison between BAT and MRM. Their conclusions are that the two frameworks have a potential in complementing each other and thereby give a comprehensive base for understanding IT-induced business interaction. The MRM model provides with an understanding of the media as an important action prerequisite for (e-) business interaction. The BAT-model provides a thorough understanding of business action as the unit of analysis for business interaction. These two understandings are needed for elaborating on a certain media's action potential. Further, this comparison show that the MRM-

model do not acknowledge the necessity of assessment for ensuring the establishment and development of business relations.

We do not find any of these models as comprehensive enough for describing business interaction. We claim that the most comprehensive model for *dyadic business interaction* is the BAT model. Different requirements for model development have been identified through applications in empirical studies (e.g. Axelsson et al, 2000; Goldkuhl & Melin, 2001; Lind, 2002). These needs for model development will be commented in section 4-6 below. The BAT model possesses several important features. It has a genuine exchange character (Goldkuhl, 1998; Lind & Goldkuhl, 2003). Business interaction is about exchanges between supplier and customer as Glynn & Lehtinen (1995) and Håkansson & Snehota (1995) say. Such exchanges are constituted by communicative as well as material acts. Such an emphasis on exchange does also entail a symmetric view of customer and supplier. This view means that both business parties should be acknowledged as active business parties (ibid). All their relevant business actions should be taken into account. This does of course not entail that the power balance between the business parties is symmetric.

We build our further work on the BAT model. In the rest of the paper we will propose developments of the BAT'98 model. We build upon experiences from empirical applications of the BAT model as well as theoretical insights and conceptual analyses. A division into several connected business interaction models will be pursued. We will distinguish between the following model scopes:

- business transaction (section 4)
- frame contracting with embedded business transactions (section 5)
- market vs dyadic interaction (section 6)

A main driving force in the model development endeavour is to articulate the dynamic features of business interaction.

4. Business transaction dynamics

4.1 Needs for model development

The BAT'98 model (Goldkuhl, 1998) describes the interaction between a customer and a supplier within a business transaction (figure 1). It does not show the dynamics of recurrent business transactions. A business transaction can be a one-off affair, but for many business parties there are recurrent transactions. Usually there is an interest for a supplier to retain a customer. If a customer has a recurrent purchase need and is satisfied with a supplier, the search costs for finding a supplier can be avoided if the same supplier is chosen again. There are thus often

economic motives from both parties to continue trading (Gummesson, 1999). There is a need to show the recurrence of business transactions in the model.

This has also been clearly identified in empirical studies using BAT. Axelsson et al (2000) made a longitudinal study of a business network in the wood industry and used BAT to describe the business interaction in different business party constellations. The long term relationships and recurrence of business transaction were obvious. As said above, a generic model of business transaction should describe the possible recurrent character of business transactions.

Through such recurrent transactions, business relations between business parties emerge. This was also obvious in the empirical study mentioned above (ibid). In this study, Goldkuhl & Melin (2001) identified different types of business relation developments, and based on these findings they proposed modifications in the BAT model in order to cover such developments. The business interaction between suppliers and customers develops and changes over time dependent on continuous interaction and strategic decisions (Håkansson & Snehota, 1995). The significance of business relations is well described in business network theories (ibid), relationship marketing (Gummesson, 1999) and service marketing (Grönroos, 1990). A business transaction model should show the existence of business relations. It should also show the dynamic character of such relations, i.e. their continuous change over time; confer e.g. Ring & Van de Ven (1994) and Ganesan (1994) about relationships development.

The first phase in the BAT'98 model is a prerequisites phase. No interaction occurs in this phase. The phase describes the initiation of business conditions of each party before entering into interaction. This means that this first phase is *not an interaction* phase, which can be seen to be an anomaly in the BAT'98 model. It is also inadequate to consider the prerequisites establishment as just an *introductory* phase. Development of the supplier's capability may take place related to several of the other phases. For example, if there are tailor-made products, the specification of such products will take place integrated in the proposal phase. There can also be adaptations made in the fulfilment phase (e.g. change of the production equipment) based on what was contracted. It is also important to acknowledge the evolution of business capabilities through continual learning from execution of business transactions.

In the BAT'98 model, the pr-requisites of the supplier and customer are described differently (Goldkuhl, 1998). The supplier's prerequisites are described as know-how, capacity and supply. The customer's prerequisites are described as operations with lacks and needs. This way of describing might be adequate. We think however that it is important to emphasise that both supplier and customer is performing the interaction based on their respective business capability². The

² The concept of organisational/business capability has been used by several scholars. An analysis and overview of different meanings is made by Tell (2000). We follow the conceptualisation made by Braf & Goldkuhl (2002) and Goldkuhl & Röstlinger (2002). A business capability consists of

customer has a specific capability. There is some lack in this capability, which makes the customer oriented to replenish this need through purchase of products. These needs change through the business interaction or at least they are intended to change. The needs shall decrease and the capability shall increase. The prerequisites of the supplier can also be described in terms of capabilities and needs. For the supplier it is the *need to exploit the capability* through selling products that is a driving force. For the customer it is the *need to add to the capability* that is a driving force for purchase. Such different kinds of needs are fundamental for action and change³.

The BAT model is a generic framework for business dyads. The relations to other parties in value chains (Porter, 1985) and value constellations (Normann & Ramirez, 1993) are not expressed. The capability of the supplier is usually dependent of the capabilities of its different business partners (sub-contractors and co-producers) and the relations to these partners (c.f. Håkansson & Snehota, 1995; Hedberg et al, 1997). 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.

The identified needs for model development, described above, concern dynamic features of the business interaction of a business dyad:

- Recurrent transactions
- Business relations development
- Use and development of business capabilities
- Relations to other parts in the value transformation context

A renewed BAT model should show such dynamic features. In the next section we will describe a revised model of a business transaction.

4.2 The constituents of business transaction

We describe here the constituents of business transaction. As said above we have divided the BAT model into several sub models. We describe in this section the *business transaction model*. The graphical representation of the model is found in figure 2.

Business transactions occur between a particular supplier and a particular customer⁴. A business transaction comprises the establishment, fulfilment and assessment of a business agreement in order to satisfy one or several related product needs of the customer. This means exchanges of proposals, commitments,

human competence, artefact functionality, informative capacity of signs and financial capacity and these different parts must be congruent in order to function well.

³ This is well described in the pragmatic tradition, e.g. Mead (1938) and Dewey (1938).

⁴ The concepts of particular customer and particular supplier will be described later (section 6), when they will be compared to potential customers and potential suppliers.

fulfilments and assessments. A business transaction concerns a particular transaction occasion. This can include several products within the same contract. During the execution of a business transaction, new product needs can be discovered and/or other product supply can be exposed leading to more products included in the business deal.

The exchange of fulfilments means exchange of value; products vs payment. If either part is not satisfied with the fulfilment, a reclaim might be directed to the other party, which occurs during the assessment phase⁵. Of course, appreciative assessments may also be exchanged.

In the example of Steelco these exchanges is what occurs during one-time-shop selling. Proposals concerning product characteristics of standard products are exchanged in return for proposals concerning the price to pay for desired standard products. These exchanges of proposals (possibly) result in an exchange of commitments and a business deal is reached. By short lead times standard products are delivered from the standard stock and the customer pays for the delivered products. Possible assessments are exchanged.

The business transaction is dependent on the existing business relation between the business parties. Such relations can be deep if there exists prior interaction, and thin if no or little interaction has occurred. The execution of the business transaction will influence the business relation dependent on its performance. If there will be recurrent business transactions, the post-transactional relations will form the pre-transactional relations in the next business transaction. Through such recurrent business transactions trust between the two business parties will emerge. Trust is an essential ingredient in a business relation. *At Steelco there are some customers that come back and buy products from the standard stock several times. Post-transactional relations from former business interactions then form the pre-transactional relation for the coming business interaction.*

Business capabilities are used and re-used during business transactions. The business interaction aims at improving both parties' capabilities in different respects. The customer wants to satisfy certain needs through acquisition and usage of products. The purchased product will enable the customer to perform desired business actions. The customer compensates the supplier for the delivery. This compensation will increase the financial capability of the supplier. The business interaction will however often have learning effects on both parties. Experiences from the execution of the business interaction may improve the capability for future business interactions. This capability improvement can apply both to this particular business dyad, but also to interaction with other business parties. Experiences from business interaction can be a basis for both continuous improvement on a daily basis and be incentives for more strategic developments.

⁵ In the BAT'98-model, the last phase was called 'completion' (Goldkuhl, 1998). We have renamed it to 'assessment' in order to emphasise the kinds of action which may be exchanged during this phase, which is equivalent to the kind of names of the other phases (Lind & Goldkuhl, 2003).

A single business transaction can include development of new products or adaptations of existing products to specific customer needs. Such specification will be performed within the proposal and commitment phases. The results of these development efforts will improve the capabilities of the business parties and these improved capabilities can be used and exploited in future situations. *An example of such capability development at Steelco is the product development made for particular customers. Products developed for the particular customer might be offered to other customers.*

In the BAT transaction model (figure 2) we have, besides business interaction and exchange, also included a value transformation dimension in the model. A product flow from provision via delivery and procurement to usage is shown. The delivery of products as part of the fulfilment is one stage in a value transformation process. It is essential to acknowledge the flow of products within and between different organisations. Each organisation performs value adding activities to the particular product (Porter, 1985). On the supplier side there is a provision of pre-products before delivery. In manufacturing companies there exist also manufacturing activities as part of the company's value transformation. On the customer side there is a procurement followed by usage. The usage situation may of course differ to a large degree dependent on whether the product will be a component (pre-product) in the production of another product or if it is to be conceived as an end product with an independent use. There are also links outside the organisational boundaries to other business actors. This is indicated in figure 2 by the boxes of provision and usage as antecedent to the supplier and succedent to the customer. The provision link (outside the supplier) gives also an indication of that the supplier's capability is dependent on capabilities of its sub-contractors and other business parties (Hedberg et al, 1997). *In the Steelco case there is a manufacturing of steel pipes leading to replenishment of standard stock as part of provision.*

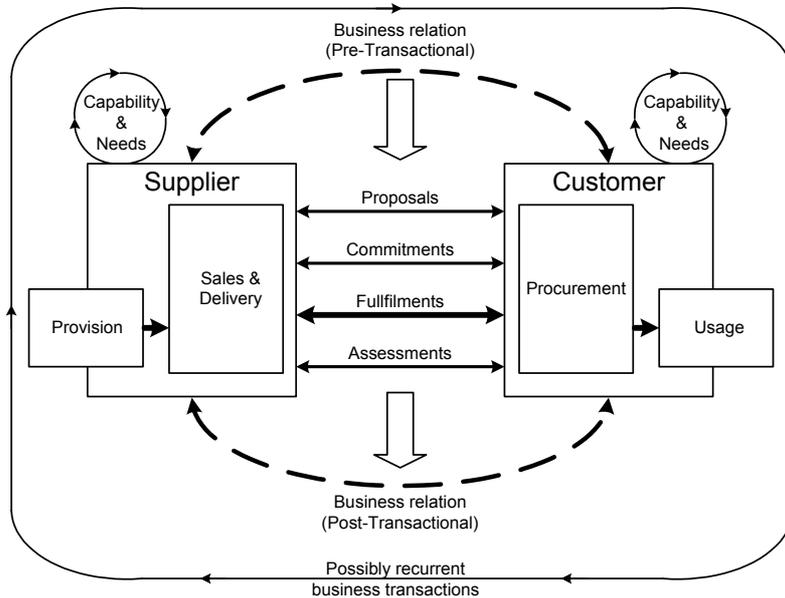


Figure 2: The constituents of the business transaction (BAT business transaction model)

5. Frame contracting

5.1 Needs for model development

In the BAT'98 model there is no differentiation of different contract levels (Goldkuhl, 1998). In later studies of BAT (e.g. Axelsson et al, 2000; Lind & Goldkuhl, 2003) the need for different contractual levels has been identified. When applying the BAT-model in a wood-industry context, Axelsson et al (2000) identified the need for two contract levels. As said above, in many B2B interactions it is common to have long-term contracts (e.g. Roxenhall & Gauri, 2002). Such a contract defines recurrent deliveries. There is a need to distinguish between the frame contract level and the level of sub-orders within such a frame contract. In a framework for business interaction there should be a possibility to distinguish between such different contractual levels.

5.2 The constituents of frame contracting with embedded transactions

The business transaction model, described above (figure 2), has been expanded to a *frame contracting transaction model* (figure 3). This is a supplementary model to the business transaction model.

We distinguish between two different levels of business interaction; frame contracting and business transaction. Frame contracting occurs between a particular supplier and a particular customer. A frame contract is a long-term agreement. Such an agreement is established through exchange of proposals and commitments. Exchange of proposals means negotiation between the two parties. Bids and counter-bids concerning particular products, prices and adjacent conditions are exchanged. Proposals may also include exchange of knowledge concerning other conditions relevant to the business interaction, i.e. different aspects of the parties' capabilities. Exchange of commitments means the establishment of each party's obligations within a frame contract. These obligations concern the expected future business actions of each party. The frame contract is an agreement that governs the subsequent recurrent business transactions. Frame contracting is used to reduce uncertainties and to ensure future procurement, production and sale. There will of course be situations where the business parties do not come to an agreement. In such a situation no contract is settled and the business interaction is terminated.

The two contract levels correspond to two different contract types: *Frame contract* and *transaction contract* (transaction order). If there exists no frame contract the transaction contract will be a *separate transaction order* (single order). If there exists a frame contract, the transaction contract will be a *sub-order* that is defined within the frame contract. The frame contract will usually give rise to several sub-orders and thus to several recurrent business transactions.

In business transactions governed by a frame contract, the need for exchanging proposals will decrease and be determined by the specifications in the frame contract. Many times the proposal phase (of the business transaction) will be short-circuited when there exist a frame contract. There is nothing more to negotiate about. Everything is settled within the frame contract. One of the main intentions behind frame contracting is to decrease transaction costs through decreased interaction. Usually the contents and the transfer of the sub-order is standardised in ways to decrease transaction costs.

On the contrary, if no frame contract exists the proposal and the commitment phases of a business transaction often need to be more elaborated compared to sub-orders within frame contracts. This is of course dependent on the character of the product and other important business circumstances. The strive for minimising transaction costs leads to standardisation of these types of transactions as well. This can be seen as one driving force for the development of e-commerce applications; transaction standardisation for transaction cost reduction.

When Steelco recognizes that the same customer returns to buy the same products several times this may be an incentive for Steelco to enter a negotiation regarding a frame contract. There are of course several reasons for entering such a negotiation. One is to decrease the time and effort spent for each business transaction. Another is to ensure future use of production equipment and to ensure

future sale of the certain products. A third reason is to achieve good foundations for the planning of the capacity. It is also a way for Steelco to deepen the relation with the customer. The same goes for the tailor-made product development and the transition to a frame contract regarding that specially made product for that customer.

Assessments can occur on both transaction level and frame contract level. Experiences from the performance of business transactions may be a basis for an assessment of the frame contract and its fulfilments. Assessments can be made by each party and some of these can be exposed to the other party, i.e. assessments may be exchanged. When a discontent exists and a change is desired this need to be expressed as a claim for improvement to the other party. Of course satisfaction may also be expressed as compliments. A new frame contract should build on experiences and performed assessments. Frame contracts can in a long-term business relation be recurrently developed and executed.

A recurrence of frame contracting over time is indicated in figure 3. This means also a continual development of business relations. Before the frame-contracting interaction begins there exists some type of business relation between the two parties. If the parties have traded earlier experience-based business relations exist and these form pre-contractual relations giving expectations for the next turn of business interaction. This also means that post-contractual relations become pre-contractual when a new frame contracting process is executed. In cases where no prior business interaction has occurred, the business relations are thin. This means that the parties are rather unfamiliar to each other. This will of course influence the behaviour in the negotiation process. In the theory we consider business relations to exist even if no prior business interaction has occurred before entering into a business negotiation. When two companies start to discuss a possible business deal, their roles as (possible) customer and (possible) supplier are directly determined and thus principal business relations are created. When a frame contract is settled, the business relations are determined by this contract. After trading with each other for some time, business relations are filled with experiences. Business relations may thus consist of (1) business role determinations (customer, supplier), (2) contractual relations with expressed and implicit expectations and commitments, and (3) collected experiences of prior business interactions.

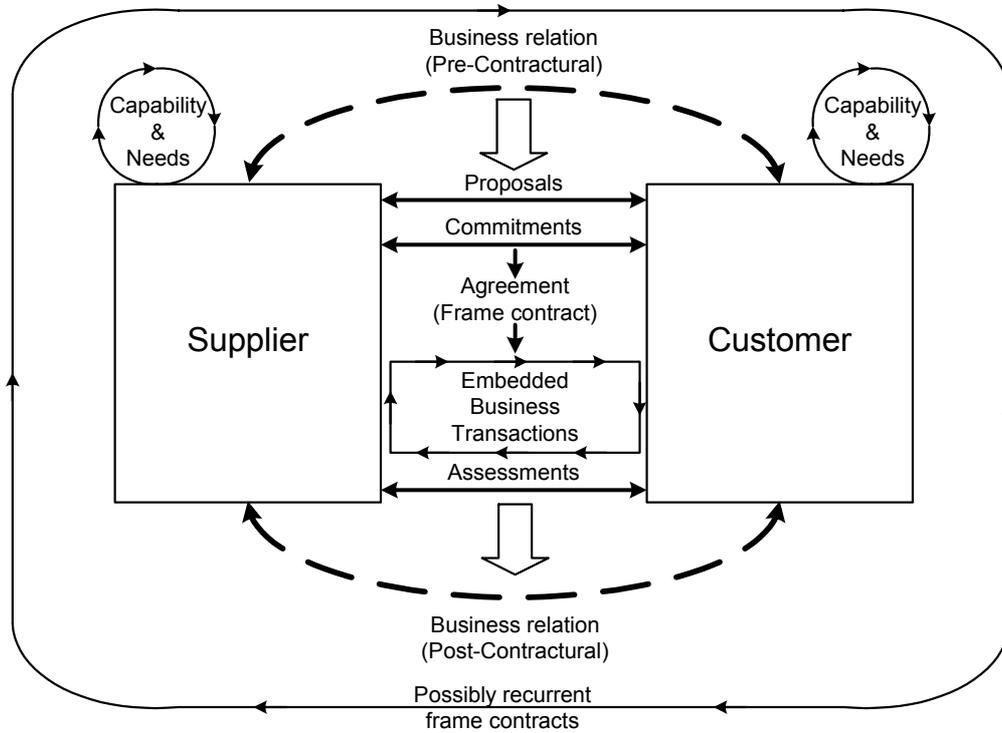


Figure 3: The constituents of frame contracting (BAT frame contracting transaction model)

Frame contracting will be based on each party's capabilities and through the process these capabilities will usually emerge. For example the negotiation can include development of new products. Based on the supplier's general existing capability, new products might be specified which might lead to a development of the supplier's capability. Such a new product might also influence the customer's production process, which is part of the customer's capability. Establishment of a frame contract might also initiate procurement and production processes in order to ensure a *readiness* for future sub-ordered deliveries. *Going back to Steelco the development of tailor-made products might result in that these products will be warehoused for the particular customers and thus be sub-ordered within a frame contract. Thereby the customer is ensured delivery of these specially made products and Steelco can ensure, among other things, the utilisation of the production equipment, which might be especially developed or procured for these products.*

6. Different levels of business interaction

6.1 Needs for model development

The BAT'98 model describes generic business interaction between a customer and a supplier (Goldkuhl, 1998). The second phase of this model is named "exposure and contact search phase". This is described as a phase where the customer and the supplier expose their respective interest to make business and that they search for contacts with potential business parties. In this phase there may be communication (for example advertising) to an anonymous mass. In several studies, Lind (2002) has observed the need to distinguish between supplier's actions performed towards *potential vs particular customers*. There are marketing actions like advertisements and sales promotion that is directed towards the market rather than individual customers. This kind of distinction is not made in the BAT'98 model. The business interaction described in that model is not delimited to dyadic interaction although it is indicated through the two roles (customer, supplier). The BAT'98 model includes besides the stated dyadic interaction (between a particular supplier and a particular customer) also actions directed to potential business parties. The latter actions cannot be part of a dyadic business interaction. They are rather antecedent actions to the dyadic business interaction. This kind of mixture of dyadic and non-dyadic business interaction can be considered as an anomaly in the BAT'98 model.

In much modern marketing theory (e.g. Gummesson, 1999; Håkansson & Snehota, 1995) there is strong emphasis on relations and interaction between business parties who continually trade with each other. One must however not forget the classical marketing issues of trying to reach customers on a market. The business dyad emerges from the market.

Product development and procurement are other examples of actions often performed towards potential customers. This means an establishment of business conditions and capabilities. When a business contact is established the supplier's actions are adapted to the specific needs and requirements of this particular customer.

6.2 Market and dyadic business interaction

Following the reasoning above we distinguish between interaction on a market level vs interaction on a dyadic level. We introduce a BAT *market and dyadic interaction model* (see figure 4). On a market level a supplier interacts in relation to potential customers and vice versa. We call this interaction knowledge/contact search and exposure, which mainly corresponds to phase 2 and partially to phase 1 of the BAT'98 model. A supplier investigates the market in order to obtain important strategic knowledge. Such investigation can concern product

requirements, possible customers, important market considerations as competitors, and different infrastructural and institutional issues. Such knowledge can be a basis for development of supplier's business capability. Development of business capability can include product development, acquisition of new production equipment, and development of new forms and instruments of business interaction (such as e-commerce systems). This means that such capability development also is a design of the dyadic business interaction. Development of capability may often also include the establishment of a readiness to participate in particular business interactions. This means for example procurement, production, and establishment of a standard stock of products.

At Steelco there is a continuous evaluation of the assortment in relation to market needs. This evaluation is a way to ensure that Steelco's business capability is accurate in relation to potential customer needs. Potential changes of the assortment with adjacent changes of the production (routines, equipment etc) are ways to ensure such accuracy. The capability of developing tailor-made product for particular customers is another business capability that exists, which have effects on both the competencies that need to be established as well as the business interaction between Steelco and the particular customer. Providing an e-commerce site for customers buying from the standard stock has also developed the business capability at Steelco through a design of the business interaction (for such purposes).

As said above, the supplier searches for knowledge. However the supplier also search for contacts. This is done through an exposure of the supplier, its existence as a supplier and its capability and product repertoire. Advertisement and other marketing activities are important in this general exposure. On this market level the supplier directs its efforts towards potential customers. These potential customers can be known or unknown to the supplier. The customer is potential as long as this customer is not engaged in a business transaction relevant to a particular product type.

We have now viewed this market interaction from the supplier's perspective. We now turn to a customer perspective. The role of a customer arises from a lack of capability. There is something in the customer's activities, which need to be resolved, and this may be done through purchase of a product. The customer searches for knowledge about potential products and potential suppliers to meet the demands. Through these knowledge search activities, the customer's understanding of the product requirements may emerge. The customer may more directly expose the desire to get into contact with potential suppliers.

This market interaction is driven by general business interests of both suppliers and customers. When a contact is reached between a supplier and a customer this interaction may proceed to the dyadic interaction. The general business interests (of the market level) are now turned into particular business interests. On the

dyadic level we distinguish between frame contracting and business transactions following what was said in section 5 above.

In this model (figure 4) we have thus made a differentiation between market interaction and dyadic interaction. Different levels of business interaction are depicted in this model. Dynamics of business interaction and the relations between the different levels are described. The two levels of business interaction (frame contracting vs business transaction) in the dyadic level are distinguished. All these interactions are governed by the parties' capabilities and they influence the development of these capabilities. The model thus emphasises a gradual learning process through business interactions. Business capabilities are used and developed.

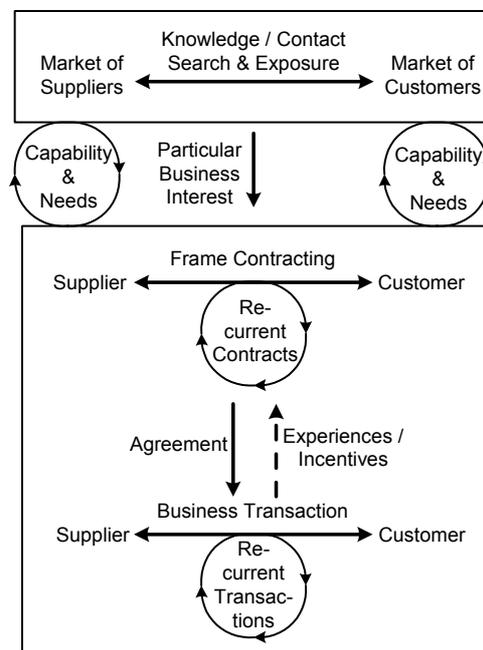


Figure 4: Levels of business interaction (BAT market and dyadic interaction model)

7. Conclusions

In this paper we have developed a comprehensive generic framework for studying complex business interaction. This framework builds explicitly on the BAT framework. The sources for this development have its foundation in the assessment of other business interaction frameworks both as well as in empirical experiences when using the original BAT framework in practice. In this paper we have also used an illustration of complex business interaction derived from an action-research oriented case study at a steel company. We have reviewed several

frameworks for business interaction and this review has led us to identify important properties to aim for. Our position is to

- 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.

Through this development this *new* BAT-framework is to be interpreted as a *Business interAction & Transaction framework*. This framework builds on a business dyad focus, which implies a symmetric focus on a supplier and a customer. Important contextual aspects in relation to the business dyad are also accentuated. The business interaction of a particular dyad emerges from interaction on a market level between potential suppliers and potential customers. The business interaction within a business transaction is one part of a larger value transformation. Links to other parties in the value transformation are thus recognised.

In this paper the Business interAction & Transaction framework has been presented by three models. The first one, closely related to the former BAT framework, is the *BAT business transaction model*. This model describes the constituents of a business transaction in which communicative and material exchanges between the two parties occur. The second model is the *BAT frame contracting transaction model*. This model, together with the first one, divides dyadic business interaction into two levels; frame contracting and business transaction. Frame contracting emphasises the existence of long-term business interaction covering a number of embedded business transactions (sub-orders). The third model, *BAT market and dyadic interaction model*, highlight the distinction between market and dyadic business interaction. In this model the interaction between potential suppliers and potential customers are emphasised as well as the transition to dyadic interaction between a particular supplier and a particular customer. To understand complex business interaction all these models have to be used.

Another important characteristic of our comprehensive framework is the acknowledgement of dynamic aspects of business interaction. The significance of the *capabilities* of the business parties is emphasised. The dynamics of these capabilities are stressed. The capabilities evolve gradually through business interactions. Capabilities are prior conditions to business interactions and used and exploited during such interaction. Capabilities are affected by the execution of the business interaction and the learning that arises from it.

The dynamics of business interaction are also emphasised through other aspects. Business interactions are described as *exchanges* between customers and suppliers. We acknowledge different types of exchanges; communicative as well as material exchanges. Exchanges rely on *business relations* between the business

parties. Such business relations evolve through business interactions on a frame contracting and business transaction level. Business interactions on these different levels may be performed *recurrently*. This will have effects on the continuous evolvement of the business relations between the two business parties.

The comprehensive framework for business interaction is to be seen as a *practical theory* (cf Cronen, 2001) or in other terms as a *pragmatic instrument*. It shapes our understanding of complex business interaction. It can be used for several purposes. It can be used as a conceptual instrument when *evaluating* existing business interaction. It guides the evaluator to focus different important aspects of the business interaction. Such an evaluation can be used as a basis for redesign. The framework can be used for *modelling* and *designing* different business interaction patterns. In such situations it may be used in combination with appropriate ISD methods. This framework consists of generic models of business interaction, which can be used as templates for analysing and designing business interactions. The framework can help to identify necessary business actions. It reminds the designers about different dynamic features of business interaction as exchanges, recurrence, evolvement of business relations and capabilities. It can give structure in the design process and be a basis for the important design of business actions and the allocation of actions to different agents (human agents and IT artefacts). Development of IT-support for business interaction is to be seen as a basic development of business capability. One challenge is how to redevelop IT capability based on continual experiences from business interactions. Human agents usually adapt in flexible ways dependent on their acquired experiences. IT artefacts need to be redesigned in order to change their behaviour in a structural way.

Our reference model is based on a value transformation perspective. This means that the generic framework can be applied in several business dyad situations. Sometimes an organisation is a supplier and sometimes an organisation is a customer. The framework can be applied in such different situations. Thereby the existence of third party relations can be acknowledged.

We have now taken a step towards developing a comprehensive framework for studying complex business interaction. This framework has been developed by using theoretical and empirical sources. It is now important apply this framework in practice and use it as a pragmatic instrument as described above. To use the framework in evaluation and design of complex business interactions and reports on its application is therefore an important task for future work. Another important task is to expand this dyadic model into a network model.

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