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The Emergence of a Multi-Organizational View on Business Processes – Experiences from a Double-loop Action Research Approach

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ABSTRACT

In this paper the need for a multi-organizational perspective on business processes is outlined and a multi-grounded solution based on double-loop action research approach is proposed. Today, contemporary organizations' capability to collaborate is an important competitive advantage and aligning in business networks is an increasingly common business model. Such development emphasizes the need for knowledge regarding how collaborative businesses could be characterized and how the constituent business interactions could be structured as several dyadic relationships in a multi-actor setting. The multi-organizational perspective proposed in this paper builds on pragmatic foundations and combines a language/action approach with a coordinative view on business processes, enabling design of complete action patterns.

Keywords

Multi-organizational, business interaction, business process management, supply chain management

INTRODUCTION

Collaborative relationships in business markets are of growing importance to customers and suppliers alike (Ulaga, 2003). A key issue for contemporary organizations is to manage new business requirements due to e.g. globalization, fast-paced markets and the emergence of e-businesses. Another market trend is that the process of value production is often distributed over several organizations, i.e. several organizations are co-producers of value aimed for the customer (Christopher, 2005; Hedberg, 1997). One way to cope with these business requirements and stay competitive is to be part of different business constellations (Hedberg, 1997; Håkansson & Snehota, 1997).

For a number of years the improvement, design and management of business processes have been identified as the number one priority of CIOs (zur Muehlen, et al., 2007). Historically, the area of process management has focused upon linkages between internal processes (c.f. e.g. McAdam, 2001). Some scholars have however claimed, that in order to manage customer orientation and understand customer's desires, there is a need to understand business interaction and the role of the commitment as parts of the business process (e.g. Goldkuhl & Lind, 2008). There is now a call for expanding the scope of business processes to include co-production between several organizations. These new conditions for doing business imply not only a broader perspective on business processes that goes beyond the dyad of customer and supplier considering all relevant producers and/or stakeholders in the business process, but also a greater consideration to coordinative aspects due to more complex business models (McAdam, 2001). In this paper a multi-organizational view on business processes is reflected as a response to an overly internal view on process management and a lack of organizational-spanning conception on business processes reflected in e.g. supply-chain management literature (ibid.).

The dominant view on business processes has been transformation of raw material into products. This is, however, not the only perspective on business processes (Keen & Knapp, 1996; Goldkuhl & Lind, 2008). The coordinative view on business processes based on the language/action perspective (Winograd & Flores, 1986) emphasizes coordination, agreements and commitments as the coordinative backbone of business processes. Such a view is also essential for allowing derivation of requirements to be put upon IT-systems as *systems for action and communication* (cf. Goldkuhl & Lind, 2008). This view is derived from communicative theory and especially speech act theory (Austin, 1962; Searle, 1969; Habermas, 1984). As identified by several scholars, IT is an important enabler for business process improvement (cf. e.g. Davenport, 1993). There is thus a need for a conception of business processes as a multi-organizational phenomenon for the purpose of enabling utilization of IT as an instrument for competitive collaboration among business parties co-producing value for the customer.

The *aim* of this paper is to **describe the emergence of a multi-organizational perspective and to conceptualize such a perspective on business processes**. This means a need for knowledge about *the constituents of patterns of business interaction involving several organizations to be used in business process modeling*. Such modeling efforts can have multiple purposes, such as strengthening the relationships between parties involved in the modeling sessions, improved collaboration between the business parties, and the establishment of requirements for IT support in the business interaction. This research is driven by the question of how to understand and fruitfully develop business relationships among involved actors in multi-organizational settings.

Following this section, some of the knowledge gaps related to the area of concern is outlined. Then, the reasons for, and the application of, action research is introduced as the main approach for the development of the constituents of a multi-organizational perspective on business processes. As the result from this process, the paper then continues with a characterization of a multi-organizational perspective on business interaction and business processes. The paper is concluded with some reflections on this multi-organizational perspective.

RELATED RESEARCH: MULTI-ORGANIZATIONAL APPROACHES TO BUSINESS PROCESS MANAGEMENT

One part of the complexity with multi-organizational business processes is the fact that the business success is immediately affected by actions performed by actors outside the immediate control of the organization. In order to coordinate such processes, knowledge of the business actions and their relationships are required. A way to capture this knowledge requires not only a multi-organizational perspective, but also a coordinative perspective on the business processes acknowledging the assignment dimension. There is thus a need for deeper knowledge about the constituents of such a multi-organizational perspective.

The language/action perspective (L/AP) is operationalized in several methods for analyzing and structuring business interactions, as e.g. Action Workflow (Medina-Mora, et al., 1992). According to Goldkuhl & Lind (2008) the traditionally transformative view lack explicit recognition of different communicative acts as constituents of business processes. However, the focus on business interaction as proposed by the language/action perspective puts particular emphasis on the interaction between *two* business parties (customer and performer). A focus on two parties, the business dyad, is however not enough when conceptualizing business actors in a business environment highly characterized by co-production. A focus on business dyads implies visualization of interactions constituted by patterns of different exchanges (communicative and material) between the customer and the performer, and there is thus a need for a perspective that recognizes the interaction between multiple business parties. Similar concerns have been raised by Desai et al (2005) who propose business protocols among partners as components for developing business processes covering the involvement of several organizations.

Several methodologies adopting a multi-dimensional perspective on business processes have been developed during the last few years. Examples of such methodologies are e³value (Gordijn & Akkermans, 2003) and SCOR (Stephens, 2001). These are to be considered as multi-organizational methodologies since they acknowledge several parties involved in the business value chain. However, they do not to a significant extent consider the coordinative aspects of the business processes in terms of communicative acts (as e.g. commitments and agreements).

e³Value is a methodology with a multi-perspective on business processes taking the business idea as a starting point. This methodology guides the user in addressing the identification of actors involved in realizing the business idea and the assessment of the profitability for each enterprise involved (Gordijn & Akkermans, 2003). e³Value focuses on the economic value exchange between the business actors, such as payment and goods. Other communicative acts, as essential parts of the business interaction, such as the underlying agreement between the parties or the content of the actual order, are omitted from the analysis.

The Supply Chain Council's Supply Chain Operations Reference Model (SCOR) is a framework with a strong emphasis on the supply chain logic (Stephens, 2001). SCOR structures the supply chain based on five management processes; *plan, source, make, deliver* and *return*. Acts performed by organizations involved in the supply chain are all structured based on these processes and the actions are then related to each other into a supply chain pattern. The SCOR model describes a detailed business process model by linking performance measures, best practices, and software requirements. Even though the framework may emphasize some communicative acts, the focus on the transformative dimension of the business process is clear. This implies, that even though both methodologies (i.e. e³Value and SCOR) could be characterized as multi-dimensional in terms of acknowledging several parties involved in a value chain, there is insufficient focus on the coordinative aspects of the processes.

To summarize, *existing approaches to business process modeling stemming from the language/action tradition put special emphasis on dyadic business interaction and rely on a solid foundation for conceiving business interaction as patterns of*

communicative and material acts. Hence, these approaches could form a good foundation for conceiving business processes capturing multi-organizational dimensions, but the perspective needs to be expanded to include several organizational entities. On the other hand, there are approaches (stemming from other traditions, such as supply-chain management) that do include several organizational entities. However, such approaches *do not address communicative and material acts as constituents in patterns of business interaction to a sufficient degree*. Such a pragmatic foundation is necessary for the development of information systems. These two classes of sources of inspiration for the conceptualization of a multi-organizational perspective on business processes are depicted in Figure 1 below.

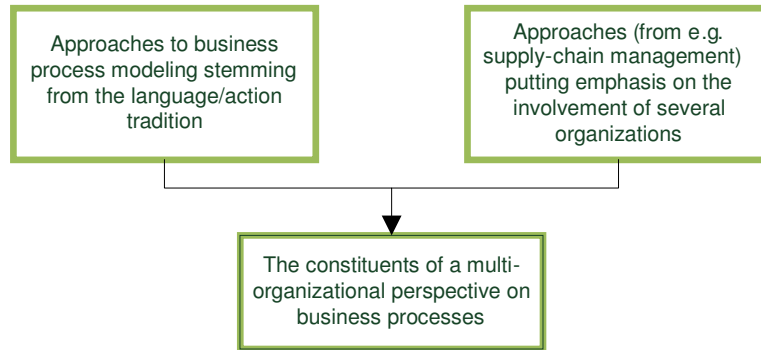


Figure 1: Theoretical domains used for the development of a multi-organizational perspective on business processes

RESEARCH APPROACH

The research endeavor addressed in this paper is based on a lengthy action research study. Action research is a suitable as research method when studying technology in a human context (Bygstad et al, 2005), which is a core focus in the IS discipline. There are many ways to conceive action research (AR) (see Checkland, 1991; Avison, et al., 2001; McKay & Marshall, 2001). One theme in the AR methodology discourse is a separation, and an acknowledgement of, the research cycle and the practice cycle (e.g. McKay & Marshall, 2001). There are several conceptions of action research. In the IS-field, and the most applied is probably canonical action research (CAR) (cf. e.g. Baskerville, 1999). This approach is based on a five phase cycle (diagnosing, action planning, action taking, evaluating, and specifying learning) constituted by different actions taken by researchers and practitioners in the context of the client-system infrastructure. The client-system infrastructure is the specification and agreement that constitutes the research environment (Baskerville, 1999). In this paper, the emergence of such a multi-organizational perspective on business processes is presented by framing two action research projects as two subsequent canonical action research cycles. The way that CAR is used in this paper, i.e. in describing conducted and related action research projects, is inspired from Lindgren et al. (2004). The two cycles is visualized in Figure 2 below, describing how the *specified learnings* is connecting point.

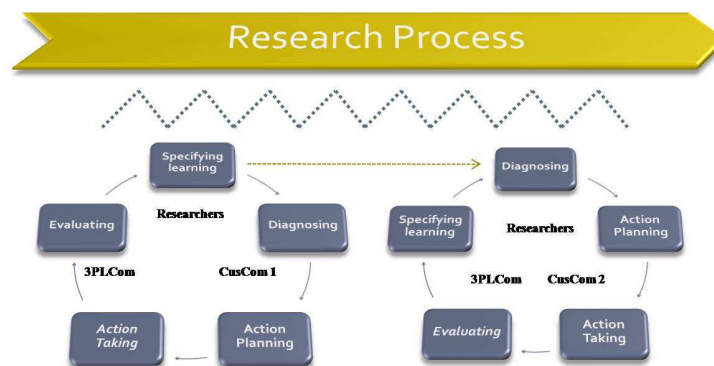


Figure 2: Two intervened action research cycles

Due to space limitations and a desire to rather present the results than the process from the two action research cycles, the characteristics related to the two action research loops are presented in the table below. The working hypotheses were formulated jointly by researchers and practitioners and were generated through both induction and deduction. The research

question continuously evolved during the process due to the cumulative relation between the cycles and enabled a deeper investigation in the following cycle, based on a more profound research question.

Table 1: Two inter-related action cycles

Action Research Cycle One	Action Research Cycle Two
Research setting	
<p>Involved Parties: Researchers, Third party logistic firm (3PLCom) and one of their customers (CusCom1).</p> <p>Object of study: The collaboration between 3PLCom and CusCom1.</p> <p>Project purpose: Strengthen the relationship between 3PLCom collaborating parties and establish a foundation for IT-based business interaction.</p> <p>Research question: <i>How 3PL collaboration could be characterized and understood?</i></p>	<p>Involved Parties: Researchers, Third party logistic firm (3PLCom) and another one of their customers (CusCom2).</p> <p>Object of study: The collaboration between 3PLCom and CusCom2.</p> <p>Project purpose: <i>Same as first AR cycle.</i></p> <p>Research question: <i>How successful 3PL collaboration could be characterized and modeled,</i></p>
Diagnosing	
<p>Identified problems and underlying causes:</p> <ul style="list-style-type: none"> • <i>Inter-operability problems</i> between the parties' IT-systems. • <i>Lack of knowledge</i> of each other's capacity and procedures. • <i>Diverging expectations</i> on each other's roles in the collaboration. <p>Working hypothesis: <i>An increased understanding of the dyadic collaboration process could be achieved by acknowledging parties and interactions outside the dyad.</i></p> <p>Data sources: Seminar based reconstructions involving both 3PLCom and CusCom1.</p> <p>Study conducted: 2003-10- -2004-02</p> <p>Number of seminars: 6 (all day)</p> <p>Number of participants:</p> <ul style="list-style-type: none"> • Researchers: 3 • 3PLCom: 3 • CusCom1: 5 <p>Other data sources: Frame contracts and transaction data on stock levels.</p> <p>Data analysis: The documentation from the process modeling, i.e. business models and diagrams, was analyzed, discussed and validated during the seminars. The major results were published in a project report.</p>	<p>Identified problems and underlying causes:</p> <ul style="list-style-type: none"> • <i>Lack of conditions</i> (for 3PLCom) to balance the need for capacity over time. • <i>Lack of knowledge</i> of each other's capacity and procedures. • <i>Diverging expectations</i> on each other's roles in the collaboration. <p>Working hypothesis: <i>An efficient collaboration could be achieved by avoiding broken patterns acknowledging business interaction beyond the dyad.</i></p> <p>Data sources: Seminar based reconstructions involving both 3PLCom and CusCom2.</p> <p>Study conducted: 2004-04- -2004-07</p> <p>Number of seminars: 5 (all day)</p> <p>Number of participants:</p> <ul style="list-style-type: none"> • Researchers: 3 • 3PLCom: 4 • CusCom2: 4 <p>Other data source: Frame contracts, supplier instruction documents, forecasts, collaboration process observations.</p> <p>Data analysis: <i>Same as first AR cycle</i></p>
Action Planning/ Action Taking	
<p>In order to validate the working hypothesis, the following activates were planned and performed:</p> <p>Change analysis including:</p> <ul style="list-style-type: none"> • Business definition • Process analysis • Collaboration analysis • Interaction analysis • Action analysis • Ideas on improvements 	<p>In order to validate the working hypothesis, the following activates were planned and performed:</p> <p>Change analysis including:</p> <ul style="list-style-type: none"> • Business definition • Collaboration analysis • Interaction analysis • Action analysis • Problem and goal analysis • Ideas on improvements

<p>Other actions:</p> <ul style="list-style-type: none"> • Systems collaboration analysis • Document analysis • Process and collaboration analysis encapsulating future action logic 	<p>Other actions:</p> <ul style="list-style-type: none"> • Forecast analysis • Document analysis • Forecast model • Process and collaboration analysis encapsulating future action logic
<p>Evaluating</p>	
<p>Validation between seminars</p> <ul style="list-style-type: none"> • Between the seminar occasions the business models were refined. Each seminar started with a reflection and discussion in order to validate the documentation (i.e. business models) based on the material produced from the previous seminars. The documentation was also given to each participant to reflect and comment upon between the seminars. <p>Intermediary evaluation and validation during seminars</p> <ul style="list-style-type: none"> • During the seminars there were intermediary evaluations of ideas and business models through continuous interaction in workshops. <p>Evaluation through documentation</p> <ul style="list-style-type: none"> • The produced models and the conclusive report signed by all participants could be seen as a validation of the knowledge developed in the action cycle. <p>To evaluate the working hypothesis formulated in the diagnosing phase, models and diagrams encapsulating future action logic were developed during the seminars. The following are examples of such models:</p> <ul style="list-style-type: none"> • Process and collaboration diagrams encapsulating future action logic acknowledging business interaction beyond the dyad. 	<p>Validation between seminars</p> <ul style="list-style-type: none"> • <i>Same as first AR cycle</i> <p>Intermediary evaluation and validation during seminars</p> <ul style="list-style-type: none"> • <i>Same as first AR cycle</i> <p>Evaluation through documentation</p> <ul style="list-style-type: none"> • <i>Same as first AR cycle</i> <p>Like in the first AR cycle, models encapsulating future action logic were used to evaluate the working hypothesis. The following are examples of such models developed in this second AR cycle:</p> <ul style="list-style-type: none"> • Forecast model as an example of how a changed notion of an action object (from forecast as informative document to a mutual commitment as capacity reservation) creates economic incentives for parties to act in a collaborative manner. • Process models and collaboration diagrams encapsulating future action logic acknowledging business interaction beyond the dyad.
<p>Specifying learnings</p>	
<p>Outcomes from this first action cycle could be summarized as follows:</p> <ul style="list-style-type: none"> • Characterization of 3PL collaboration business. • Identification of the roles of the collaborating parties. • Defining the system collaboration and problems regarding this. • The role of prognostication as a tool for process improvement and relation management • Need for a multi-organizational perspective to understand 3PL collaboration • Identification of problems as examples of broken patterns. <p>The working hypothesis for this first AR cycle could be</p>	<p>Outcomes from this second action cycle could be summarized as follows:</p> <ul style="list-style-type: none"> • A forecast model creating incentives for both parties to act in a collaborative manner. • Identification of problems in terms of broken patterns • The objective with complete action patterns. • Identification of interaction areas to define primary and contextual dyadic interactions in the 3PL collaboration • Emphasize the effects of designing action objects due to their role in the action pattern. <p>The working hypothesis for this second AR cycle could be</p>

verified. The developed knowledge in terms of understanding each other's businesses and what role they play creates incentives to act in a collaborative manner. The acknowledgment and awareness of the mutual problems increase the probability of avoiding them. Such behavior implies acting with regard to the common business, improve the business interaction and strengthen the collaboration business.

verified. The activities above are examples of different ways to avoid brokenness and to arrive at complete action patterns. This implies a more efficient business interaction and lower transaction costs. In other words, changing notions in action objects could work as incentives for the business parties to act with greater regard to the common business.

Based on the execution of, and findings from, the two action research cycles, a multi-organizational perspective on business processes emerged. This multi-organizational perspective is to be seen as multi-grounded (cf. Goldkuhl, 2004) in the sense that empirical grounding has been performed based on empirical data from the two action research cycles, theoretical grounding based on relating key concepts to external theory, and internal grounding by conceptually relating the different concepts constituting the multi-organizational perspective to each other.

The multi-grounded theory development approach also acknowledges a continual refinement of research interest. This is also the case in the research endeavor reported in this paper, where action research cycle one was informed by a preliminary research question (cf. Table 1). The result from action research cycle one was a refined research question (cf. Table 1) which was then refined once more (cf. the introduction) and then governed the emergence of a multi-organizational perspective on business process. In the next section, this multi-organizational perspective on business processes is presented.

MULTI-ORGANIZATIONAL COLLABORATION PERCEIVED

Based on the two action cycles a multi-organizational perspective on business processes emerged. In the following section the constituents of this perspective are outlined.

Multi-organizational value (co-)production as a business practice and interaction areas

As starting point, the collaborative setting involving several organizational entities is regarded as a business practice (c.f. e.g. Goldkuhl & Röstlinger, 2003). This means focusing on transactional and infrastructural conditions, actions being performed by several collaborating organizations, and the results aimed at the client.

Multi-organizational collaboration is constituted by several actors interacting with each other. Interaction areas are a way to handle the complexity from applying a multi-organizational perspective on business processes, and the business assignment functions as a delimiter for what actors and actions to consider in the analysis. (cf. Haraldson & Lind, 2006). In practice, such identification of interaction areas could be made based on collaboration diagrams, simply by structuring the business interaction based on different themes for business derived to a specific process, such as inbound and outbound logistics and prognostication process. To exemplify from the action research settings used in this paper, three interaction areas (see Figure 3 below) were identified; primary dyad (between 3PLCom and CusCom1/ CusCom2), and two contextual dyads covering the interaction between the primary dyad (3PL collaboration business) and the supplier (product producers) and the customers shops and consumers.

The need to identify areas of interaction is a consequence of applying a multi-organizational perspective on business processes and the lack of recognizing multiple actors in a dyadic setting. The aim of the figure below is to depict different areas of interaction, rather than to show the content in the specific interaction. The figure depicts the actors identified as business performers (co-producers) and the actions constituting that collaboration business due to the fulfillment of the business assignment.

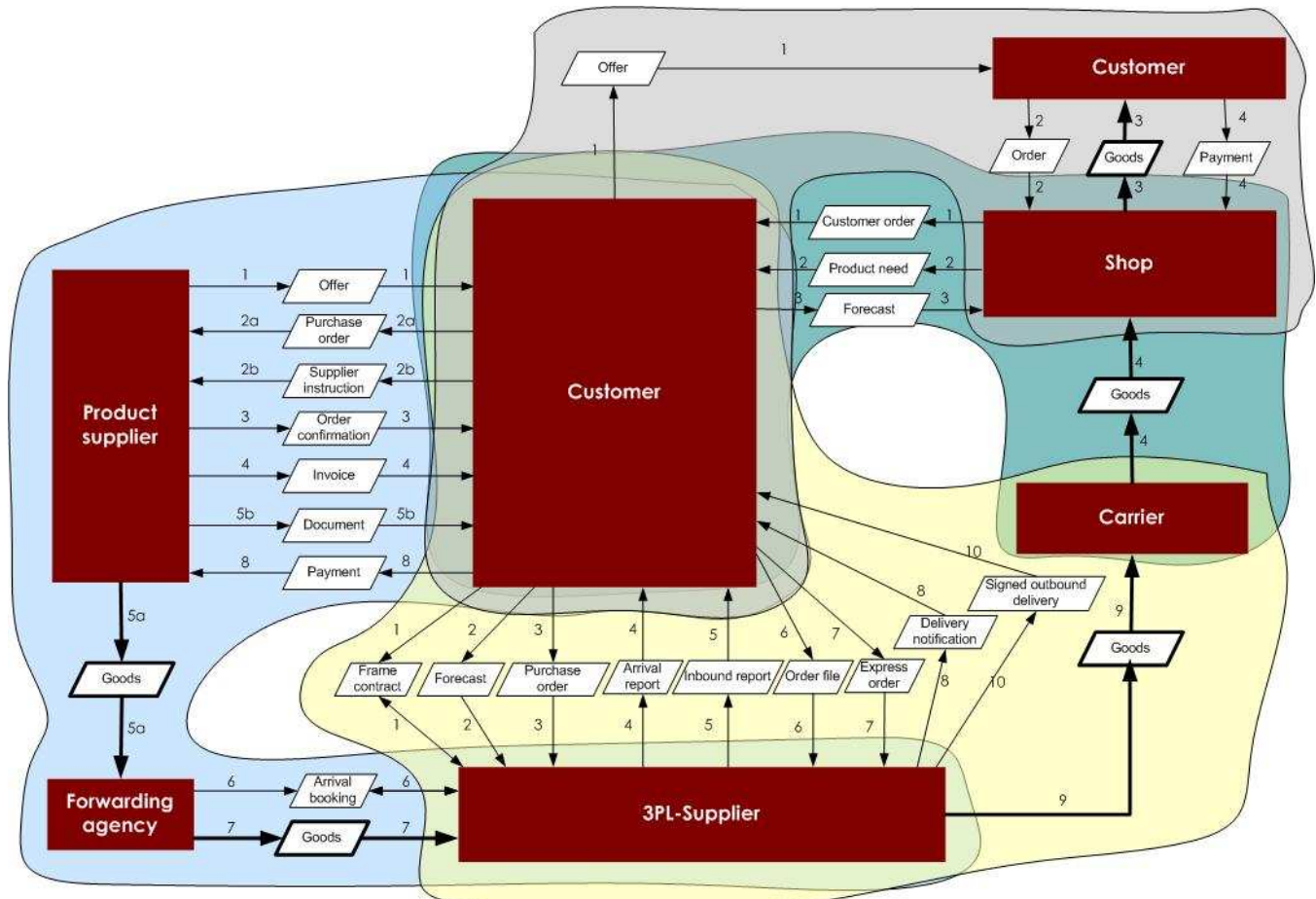


Figure 3: Interaction areas in 3PL collaboration logistic cooperation as empirical illustration

The interaction areas acknowledge business interaction on several dimensions and are referred to as communicative projects (cf. Linell, 1998). *Integrated communicative projects* frame interaction between different co-producers, i.e. customers, suppliers, customers’ costumers and suppliers’ suppliers and secondly, *parallel communicative project* refer to instances of 3PL collaboration businesses. The notion of parallel communicative projects are to be seen as response to the fact that the ability of one 3PL collaboration business is determined by existing agreements (framing commitments between other 3PL collaboration businesses) and is limited by the 3PL company’s total capacity.

The interaction areas are a way to handle the complexity that comes from applying a multi-organizational perspective on business processes. Furthermore, this is an expression of the need to manage a business interaction setting based on several actors. The business assignment functions as a delimiter for what actors and actions to cover in the interaction diagram according to a multi-organizational perspective on business processes.

Defining action sequences

Action sequences can then be defined based on the interaction themes discussed above, and thereby essential actions can be related to each other by specifying the action occurrences from the establishment of the assignment (the order) to fulfillment acts (delivery and payment). The action sequence visualizes the ideal way (intended action pattern) to perform the business and is found by questioning what a specific action is initiative for and/or a response to (cf. Linell, 1998).

The activity of identifying the actors involved in the business performance as well as the identification of the key actions constituting the business (= the business logic) can be derived from the business assignment. The business assignment reveals not only the generic action patterns constituting the business and the co-producing actors creating business value, but also an understanding of the relationships that affect the business’ opportunity to be successful.

By defining action sequences over the business performance based on the assignment, the significant relationships and business acts are acknowledged and thereby create incentives for the parties to act in a collaborative manner. This way of

describing the business interaction in detail also reveals business acts and documents constituting the interfaces between different interaction areas. An understanding of the business and different roles in collaboration can thereby be developed.

Conditional relations between business actions and action objects

The knowledge about existing relations and constituents of interfaces are of interest but is not sufficient for understanding the significance of specific actions. In order to distinguish appropriate action objects it is necessary to reveal their role in fulfilling the business assignment. The three dimensions; time, frequency, and number of connections (Table 2), complement the action sequence and enables the design of action and action objects with consideration to the overall business assignment. This creates the possibility to maintain the complete action patterns by creating incentives through applying a multi-organizational perspective on the design of agreements and commitments between collaborating parties. These action relations are to be seen as theoretical constructs complementing the initiative-response analysis as proposed by Linell (1998).

Table 2: Conditions for action relations

Conditions for action relations

Conditions/ values		
Time	Immediate (D)	Delayed (F)
Frequency	Constant (K)	Variable (V)
Number of connections	Singular (S)	Multiple (M)

Adding this dimension increases the probability for the business to be successful due to an efficient and appropriate business interaction between collaborating parties, stressing the communicative functions and the illocutionary effect of the action objects. In other words the propositional content of the business actions need to be considered. The conditions for action relations could also be used for evaluation, identifying broken patters in the business logic (cf. Haraldson & Lind, 2005) as a driver for the improvement towards successful multi-organizational collaboration. In Figure 4 below shows an example of how an action sequence (in this case an inbound logistic process) is depicted and extended with a number of conditions for each interrelation present in the business interaction.

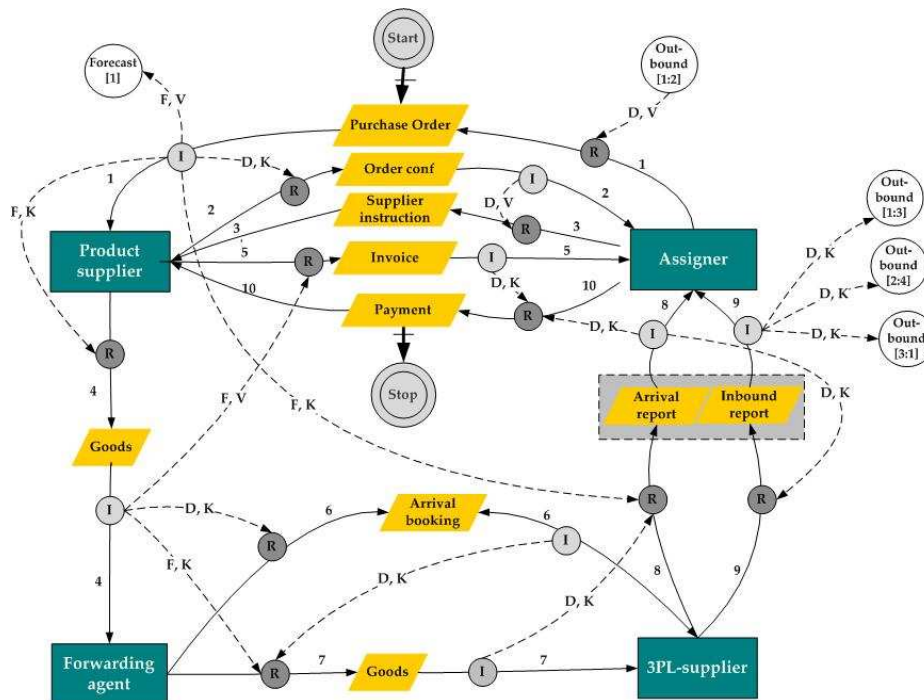


Figure 4: An example of an action sequence extended with conditions for the interrelations

Applying a multi-organizational perspective thus enables design and maintenance of complete action patterns, avoiding broken patterns, due to the possibility of encapsulating a coordinative dimension in the design of regulating action objects.

CONCLUDING REMARKS: THE MULTI-ORGANIZATIONAL PERSPECTIVE ON BUSINESS INTERACTION

A *multi-organizational perspective* on business processes as proposed in this paper implies acknowledgment of all actors important in realizing the business assignment. By letting the business assignment, rather than organizational boundaries, be the delimiter for the actual scope, enables a holistic view on the business processes where the whole business action logic can be recognized.

In order to identify business action patterns, business process modeling could be used. Business modeling is an important tool for organizations, not only as a method for organizations to deconstruct (multi-)organizational complexity but also to increase awareness and knowledge about business processes (Bandara *et al.*, 2005). The role of embedded actions (and action objects) should be considered in relation to the overall business assignment. To identify the overall pattern and link communicative acts to each other, thereby revealing their specific role and communicative function, an analysis based on the initiative/response analysis (c.f. Linell, 1998) has proven successful to use.

The issue is no longer only how to align business and IT for one organization (c.f. Lind & Seigerroth, 2010), but also how to align several businesses and their support of IT with each other. Therefore, the idea of alignment is especially important in a multi-organizational perspective. As elaborated on in the paper, this perspective focuses on communicative actions and the action patterns they constitute. A multi-organizational perspective includes both a transformative and a coordinative perspective on business processes. Because of the idea of combining coordinative and transformative dimensions on business processes and also focusing on the business assignment as a delimiter for the analysis, a multi-organizational perspective implies a holistic view on business processes as a way to design, evaluate and analyze successful business interaction in a multi-organizational setting.

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