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Sandra Haraldson
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UNDERSTANDING MULTI-ORGANIZATIONAL COLLABORATION USING PRAGMATIC FOUNDATIONS

Completed Research Paper

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Abstract

Contemporary organizations capability to collaborate is an important competitive advantage and aligning in business networks is an increasingly common business model. Therefore, knowledge regarding characterization of collaboration businesses as well as the structure of business interaction that consists of several dyadic relationships in a multi-actor setting is of growing importance. Understanding such multi-organizational collaboration results in knowledge essential for the coordination of actors and actions involved in the realization of the joint business assignment. In this paper a multi-organizational perspective on collaboration processes is outlined as a pragmatic construction.

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Introduction

Today, contemporary organizations' capability to collaborate is an important competitive advantage and aligning in business networks is an increasingly common business model. The process of value production is more often distributed over several organizations, i.e. several organizations are co-producers of value aimed for the customer (Christopher, 2005; Hedberg, 1997), resulting in different business constellations. Such business assignments need involvement from several actors, within different organizations filling different roles in producing customer value. In order for customer expectations to be fulfilled coordination and transparency are required throughout the value production process. Such development emphasizes the need for knowledge regarding the characteristics of collaborative businesses as well as the structure of business interaction constituting of several (inter-related) dyadic relationships in a multi-actor setting. Understanding such multi-organizational collaboration brings knowledge essential for the coordination of actors and actions involved in the realization of the joint business assignment. Part of the complexity with multi-organizational business processes is that business success is immediately affected by actions performed by actors outside the immediate control of the organization. Similarly, in the same way outcomes from inter-organizational interactions are likely to affect several of the involved companies. Therefore, knowledge of business actions and their relationships (constituting the collaboration) are essential in order to be able to coordinate such processes. One important aspect, in order to capture such knowledge, is a coordinative perspective on business processes, acknowledging the assignment dimension.

A coordinative view on business processes can be found in the methods stemming from Language/Action Perspective for communication modeling (Winograd & Flores, 1986) emphasizing coordination, agreements and commitments as the backbone of business processes. Action Workflow (Medina-Mora, et al., 1992) and DEMO (Dietz, 1999) are examples of methods for analyzing and structuring business interactions, in accordance with the language/action perspective. Such 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 highly influenced by communication theory, 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 the business parties co-producing value for the customer.

The more traditionally transformative view on business processes (e.g. Hammer, 1990; Davenport, 1993; Lind, 2006) is according to Goldkuhl & Lind (2008) not sufficient. A transformative view lacks explicit recognition of different communicative acts as constituents of business processes and therefore, a coordinative view is needed as a complement. It is also important to regard material acts as having communicative functions. 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). Dyadic focus is not enough when conceptualizing business actors in a business environment highly characterized by co-production involving several organizations, since it implies visualization of interactions constituted by patterns of different exchanges (communicative and material) between the customer and the performer, not recognizing the interaction between multiple business parties. Desai et al (2005) raise the same concern and propose business protocols among partners as components for developing business processes covering the involvement of several organizations.

Several methodologies and reference models adopting a multi-organizational perspective on business processes have been developed during the last few years, such as 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, even if they acknowledge some coordinative aspects, they are influenced more by the traditional transformative view on business processes and leave out important communicative acts (as e.g. commitments and agreements) required and used to coordinate the material (as well as communicative) acts.

e³Value could be considered as a methodology that adopts a multi-organizational 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, even though they can be 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) puts strong emphasis on the supply chain logic (Stephens, 2001) and structure the supply chain based on five management processes; *plan, source, make, deliver* and *return*. The actions performed by organizations involved in the supply chain are structured according to these processes and are then related to each other into supply chain patterns.

Identifying supply chain patterns by using SCOR results in descriptions in the form of detailed business process models linking performance measures, best practices, and software requirements to the process. SCOR is based on a transformative view on business processes, even though some communicative acts are acknowledged. Although both methodologies (i.e. e3Value and SCOR) could be characterized as multi-organizational in terms of acknowledging several parties involved in a value chain, there is insufficient focus on the coordinative aspects of the processes. With some extensions (emphasizing coordinative aspects) SCOR could be used for modeling multi-organizational collaboration as an ideal supply chain (the model as type level description), but do not support the design of such businesses with accordance to the involved actors ability to fulfill customer needs, i.e. addressing the utilization of an non never-ending resource base (instance level).

The importance of a multi-organizational view on businesses has been acknowledged by several scholars (e.g. Hedberg, 1998 and Håkansson & Snehota, 1997). In Ford et al (2002) the view that business should mean a process of action by one company and the reaction by another is referred to as the *myth of action*. Instead companies should be seen as members of a larger business network, consisting of a number of active and heterogeneous companies. To manage networks there is a need to go beyond the single company and acknowledge the complexity of relations that constitute business networks (Ford et al., 2002). One way to cope with this is by letting the design of business artifacts governing business interaction (such as business agreements), reflect the total ability of one actors ability to act in relation to the business network by acknowledging existing relations and agreements (multi-organizational) making a (inter-organizational) commitment. In other words instances of relations in a business network designing collaboration and business artifacts supporting it become important to consider. However, due to the fact that activities performed in business networks need to have a client the agreement made with the client (by some party in the business network) should therefore govern the delimitation of what / which actors/actions to include.

Therefore, based on the argumentation above I argue that in order to design appropriate collaboration involving multiple roles there is a need for a combined view on collaboration within business processes, acknowledging both coordinative and transformative aspects. But in order for collaborative businesses to arrive at competitive realization of business assignments engaging several organizations, broadening the perspective from dyad to multi is not enough. In the design of business collaboration there is also a need to reflect existing commitments (i.e. competing commitments) occurring, in order to identify the total ability of the business performance. Hence, such perception of business collaboration needs a new perspective, a multi-organizational perspective on business collaboration. The ambition is to develop a design theory and thereby including guidelines for design using MOP as the foundation and objective. In this paper such multi-organizational perspective is outlined and further described as a pragmatic construction. The research question in the paper is: *How can a multi-organizational perspective on multi-organizational collaboration be understood and described as a pragmatic construction?*

The purpose is to describe the pragmatic foundations of a multi-organizational perspective on collaboration and to characterize the perspective using pragmatic constructs. Another purpose is to identify further needs in relation to additional pragmatic constructs that are required in order to design multi-organizational collaboration and information systems. This paper is structured in the following way. Following this introduction the research approach is put forward by, among other things, putting focus on the kind of knowledge that is being developed in this paper. This is followed by the conceptualization of the multi-organizational perspective in terms of goals, values, and concepts relying on pragmatic foundations. The paper is then concluded by some reflections of this multi-organizational perspective in relation to other pragmatic theories and some identification of future work.

Research approach

Towards MOP 2.0 – an action and design research process

The multi-organizational perspective proposed in this paper has emerged over time, and is based on a lengthy action research study (see e.g. Checkland, 1991; Avison, et al., 2001; McKay & Marshall, 2001) complemented with a design science research approach. Thus, the multi-organizational perspective does rely on theoretically informed empirical experiences. In different areas in the IS-field pragmatic foundations are used, such as action research (AR) approach and a design science research (c.f. Hevner et al, 2004) approach (DSR) with clear pragmatic foundations as well as pragmatic objectives. As depicted in *figure 1*, the emergence of MoP 2.0 is described as several inter-linked action research cycles. The research process has been divided into two episodes with different aims and outcomes, but still with the objective to develop different aspects of a multi-organizational perspective. Episode one has been of a more knowledge generating character, and episode two has had more of a grounding purpose. The initial episode had the purpose to understand and conceptualize multi-organizational collaboration and the latter episode focused more on the application of MOP in different settings, in order to enable the design of multi-organizational collaboration. The reason for complementing the action research process with a design science research approach in the second episode is to enable a focus upon business artifacts being generated by applying an emergent multi-organizational perspective.

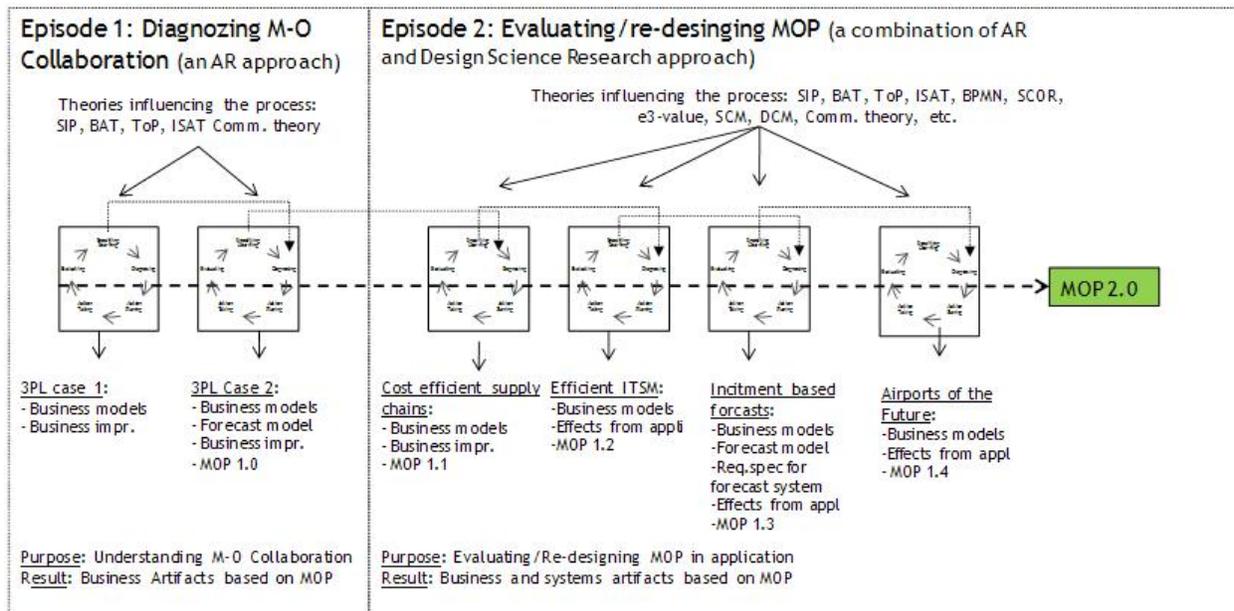


Figure 1: The emergence of MoP 2.0

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, but in the IS-field the most applied one 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*) containing the different actions taken by researchers and practitioners in the context of the client-system infrastructure (Baskerville, 1999). DSR in IS is used to create purposeful artifacts to address important organizational problems (Hevner et al, 2004). In this paper, the emergence of such a multi-organizational perspective on collaborative business processes is presented by framing several action research projects as subsequent canonical action research cycles. The research process contains six major action research cycles representing different areas of application. For each research cycle different components contributing to the emergence of MOP are shown in the *figure 1* above. The first episode had the purpose to inductively generate insights of essential categories to include in MOP. In the second episode these categories are being evaluated, and by that additional categories and nuances of earlier identified categories of MOP can be generated.

The *Figure 1*, above, also illustrate how *specified learnings* are the connecting points between the action cycles, which imply a cumulative knowledge development process. In the second episode the design and use of business artifacts based on MOP has become the core of the action research cycles. In this way the second episode adopts a combined action- and design research approach. The outcome from the research cycle is MOP 2.0, the proposed perspective to use as a base when designing artifacts for multi-organizational collaboration.

The research setting: methods and empirical context

The emergence of MOP has been influenced by pragmatically founded theories applied in empirical settings throughout the process. These theories will be used below to elaborate on the pragmatic foundations of MOP. The same theories form the basis, i.e. the underlying perspective, behind different method components used in the action research settings. The method components used in the business modeling were:

- Business diagnosis: *business characterization*
- Process analysis: *process diagrams*
- Collaboration analysis: *collaboration diagrams*
- Interaction analysis: *interaction diagrams*
- Action analysis: *action diagrams*
- Problem analysis: *problem diagrams*
- Goal analysis: *goal diagrams*
- Improvements identification: *list of improvements*

As indicated in the figure MOP 2.0 has emerged from applications in different empirical settings. These have focused upon collaboration in supply chain and third-party logistics settings (c.f. Haraldson & Lind, 2005). The object of analysis in all cases conducted has been business collaboration in business networks. A more detailed description of the action research cycles from the first episode can be found in Haraldson & Lind (2010).

Theories have thus been used as a way of helping the investigator to focus on pragmatic aspects of the empirical setting. Theories have also had an essential role in analyzing the generated data. Based on the execution of, and findings from, the action research cycles, a multi-organizational perspective on business processes has 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 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. In this paper some parts of such an internal grounding is performed (see goal and concept diagrams below). Since the ambition with MOP is to become a design theory, it has thus been essential to use MGT as a research approach.

The notion of perspectives and methods

The knowledge object focused in this paper is a *perspective* on multi-organizational collaboration. It thus becomes essential to elaborate on the constituents of a perspective in a methodological context. According to Mathiasen (1982) a perspective could be defined as a conceptual abstraction of a view or a specific phenomenon. A perspective is a method-related concept (Cronholm & Ågerfalk, 1999). It could be thought of as normative conceptualizations that direct the method users' attention to certain phenomena. Methods are created and used to support actors performing actions in order to arrive at a certain goal (Ågerfalk & Åhlgren, 1999).

Perspectives are incorporated in methods and method components used in the development of information systems and business processes. The perspective can be expressed in the method without being explicitly articulated (Goldkuhl, et al., 1997). According to Goldkuhl (1999) a perspective includes values, goals and categories (with definitions) *see figure 2*, below. A perspective includes several categories identifying what aspects to be considered in order to characterize a certain phenomena, e.g. what aspects to consider when designing multi-organizational

collaboration. A category could be seen as an abstraction of these aspects (phenomenon), specified by definition and includes values and action rules. The categories of a perspective shall be defined and can be based on values and represents a view on the phenomenon that the perspective is applied to.

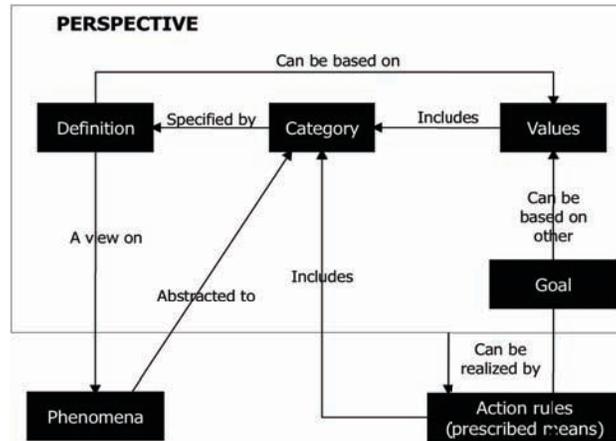


Figure 2: Constituents of a perspective (based on Goldkuhl, 1999)

As shown in *figure 2* above, a perspective has goals that are realized by action rules in terms of prescribed means. Actions are performed with the intent to achieve something – to make a difference - a specified goal that in turn can be based on other values. To exemplify, multi-organizational perspective implies a business structure that is effective and efficient and enabling fulfillment of customers’ expectations (a goal) through complete action patterns (another goal). In this case the category is *action pattern* and the value dimension is *complete* action pattern. The different goals of MOP are presented in a goal diagram (*see figure 3*) and explained in the following section. Action rules (prescribed means) can then be specified to govern social action towards the specific goals.

As indicated in the figure above action rules include categories. Action rules should also support the realization of certain goals, which (via values) have a relationship to different categories. A solid understanding of the constituent categories of a perspective therefore becomes essential. The concept diagram below defines the core categories by relating them to each other. The construction of a concept diagram helps identify the role of the basic unit of analysis (e.g. the action) in the multi-organizational perspective.

Why adopt a multi-organizational perspective on collaboration?

As indicated in the section above a perspective is an expression for what is to be achieved (i.e. values and goals according to *figure 3*). In this section values and goals for multi-organizational collaboration are identified. These will then in later sections be used for deriving central concepts (i.e. categories and definitions according to *figure 5*) constituting a multi-organizational perspective. The outcomes of the goal analysis that is presented in a goal diagram (*see figure 3*) are described in the following section below.

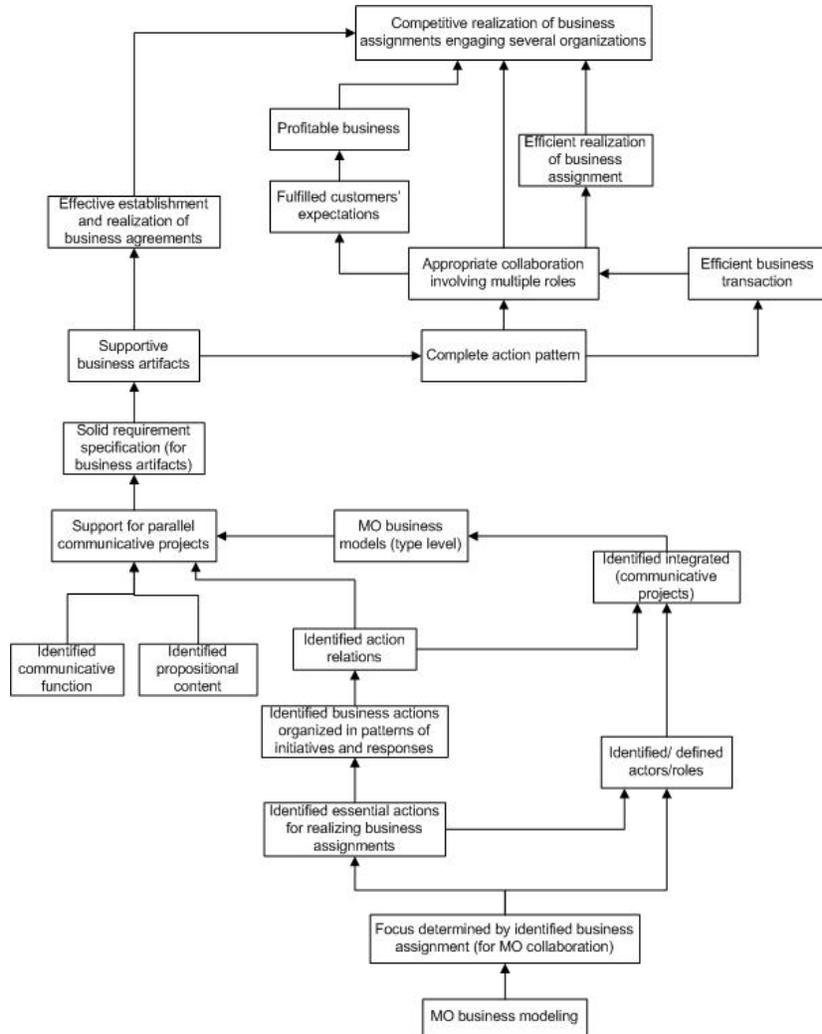


Figure 3: Goal diagram of multi-organizational perspective

The overall goal of a multi-organizational perspective is to arrive at a *competitive realization of business assignments engaging several organizations*. This main goal builds upon that fact that business assignments (i.e. assignments coordinating the collaborative business engaging several organizations) are realized in an efficient way, appropriate (in that, e.g., each actor acts in accordance with set expectations) collaborations, that the business is profitable for each involved actor, and effective establishment and realization of business agreements (with customers). Essential means for the effective establishment and realization of business agreements are supportive business artifacts (such as well-founded agreements). Supportive business artifacts are essential means for arriving at complete action patterns involving several business partners and thereby secure the efficiency of business transactions. In a multi-organizational collaborative context the supportive business artifacts thus become essential. Such artifacts could be derived by the creation of business models describing interaction patterns engaging several business parties (in identified integrated communicative projects) as a basis for solid requirement specifications. Integrated communicative projects are expressions of principle action relations involving different actors (and actor roles) in the realization of the business assignments and the multi-organizational business models express such communicative projects. There is a need for supporting the realization of business assignments with respect to parallel communicative projects (e.g. the management of competing commitments). The identification of integrated communicative projects as well as support for parallel communicative projects becomes essential for establishing solid requirement specifications. In order to ensure action quality in multi-organizational collaboration, the communicative function as well as the propositional content of the identified actions needs to be acknowledged. It is thus necessary to identify business actions and their inter-relations (organized in patterns of initiatives and responses). Enabling such a focus for the design of successful multi-organizational collaboration, methods for

business modeling directing attention towards such aspects, need to be applied. An important starting point for the modeling endeavor is to use the business assignment (for the multi-organizational collaboration) to delimit the scope and reveal essential actions constituting such collaboration business.

The Multi-Organizational Perspective as a Pragmatic Construction

Pragmatic foundation used

As can be seen in the goal diagram there are several pragmatic constructs that need to be further explored. The empirical data has been generated by the use of diverse methods relying on pragmatic foundations. These different methods rely on socio-instrumental pragmatism (SIP) for their ontological foundation (Goldkuhl, 2005). SIP is based on a language action perspective and could be seen as a communicative theory, and thus stresses the importance of acknowledging communicative acts as well as material acts as essential constituents. SIP is a conceptual framework with a generic view on socio-instrumental actions. One purpose of SIP is to enable seamless theorizing in the IS area (Goldkuhl, 2005) and the theory contains of several ontological categories, used to describe different phenomenon of the world. These realms are *humans, their inner worlds (intra- and inter-subjective worlds)*, their *actions*, and the *external world* consisting of *signs, material artifacts and nature*. In the SIP framework three types of actions are acknowledged; *intervening, interpreting and reflective actions*. SIP could be considered as an eclectic framework based on pragmatic foundations and according to Goldkuhl & Röstlinger (2002) SIP is a progenitive theory for the other theories. Goldkuhl & Röstlinger (ibid.) bring forward three such theories; Business Action Theory (BAT), Theory of Practice (ToP), and Information Systems Actability Theory (ISAT). This means that BAT, ToP and ISAT are theories based on and incorporate theoretical constructs of SIP. Thereby SIP also has a potential of being a generative theory for the development of other more domain specific theories focusing particular aspects of multi-organizational collaboration.

Thus, SIP as ontological foundation forms the basis for these three more domain specific theories (c.f. Goldkuhl & Röstlinger, 2002) used to acknowledge essential phenomena in multi-organizational collaboration. These three theories have been used to generate empirical data (theories as generative tools), as well as analyzing the empirical data (theories as analyzing instruments). Besides SIP, Business Action Theory (BAT), Theory of Practice (ToP) and Information System Actability Theory (ISAT) have influenced the process in different ways. In *figure 4* below the role of SIP as a generative theory for the more domain specific theories is visualized. *Figure 4* also illustrates the existing inter-relations between these three theories.

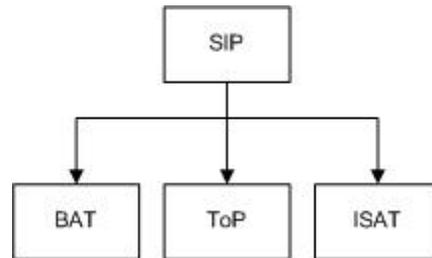


Figure 4: Relations between used theories

Business Action Theory (BAT) is a dyadic theory concerned with the business interaction between a customer and a supplier (e.g. Goldkuhl, 1998) and describes six generic phase of business interaction acknowledging communicative actions as well as exchanges between the business parties. The constituents of business interactions are according to BAT business communication and exchanges of value. BAT is inspired by language action theories (e.g. Austin, 1962; Searle, 1969; Habermas, 1984) and by business interaction models like e.g. Action Workflow (Medina-Mora et al, 1992), where different generic communicative acts are identified and ordered in a generic way. In contrast with these methods BAT also includes material acts (such as e.g. exchanges of value). The generic communicative acts are ordered in the phase model according to the six phases: *business prerequisites phase, exposure and contact search phase, contact establishment and proposal phase, contractual phase, fulfillment phase, completion phase*. In BAT the contract, as a mutual commitment made by the interacting business parties, plays a central role. The phases before contracting can be seen as preparatory phases and fulfillment and assessment follows the establishment of a contract.

In developing MOP, Business Action Theory (BAT) has primary been used to identify and structure business interactions between involved parties in the collaboration business. BAT has been a driver for acknowledging patterns of inter-related actions as initiatives and responses in order to identify (as well as evaluate) action patterns, delimited by the business assignment. Analyzing business interaction according to BAT implies identification of roles, actions and inter-relation between actions realizing business transactions. Such interaction analysis has inspired the modeling of multi-organizational collaboration. Hence, BAT focus on business interaction in a dyadic setting, gave rise to a need to extend the analysis in order to acknowledge business interactions in a multi-organizational setting. In order to go from dyadic to multi-organizational business interaction, the interaction analysis was extended to identify action sequences and interaction areas. By that the inter-relations between actions from different interaction areas were identified.

The business models resulting from such analysis acknowledge multi-organizational collaboration as integrated communicative projects (i.e. the inter-relations among business actions between involved parties on a generic level). Such business models can be used as a basis for evaluate whether or not the action patterns are complete (on a generic level). However, the models are not sufficient to ensure the realization of complete action patterns since that requires consideration to competing commitments in order to reveal the business actors capabilities to act (in order to produce value in accordance to their role in the value chain). Therefore, instantiations of action patters (and action relations) are necessary to reveal in order to achieve the objective with MOP as an enabler for realizing complete action patterns in multi-organizational collaboration. This implies that the interaction analysis not only needs to expand the scope from dyadic to multi-organizational business interaction, but also to enable analysis based on an instantiation (i.e. parallel communicative projects) of the identified integrated communicative projects on a generic level.

To enable multi-organizational aspects to be considered in the business modeling of multi-organizational collaboration an initiative and response (I/R) analysis (inspired by Linell, 1998) and a conditional based action analysis was developed complementing BAT as driving force for business modeling. This characterization of the action relations in a multi-organizational collaboration constitutes an important knowledge base for identifying the parallel communicative projects to be considered in the design of business artifacts (i.e. business agreements). Such consideration brings about a realization of complete action patterns that are characterized by action quality. In order to achieve the objective with action quality in multi-organizational collaboration, the design of business artifacts (that holds a role of supporting complete action patterns) must be reflecting their role in realizing the business assignment. This means that the communicative function as well as the propositional content of such artifacts should be determined based on what actions to support.

Theory of Practice (ToP) is a theory (a generic model) concerned with work practices (e.g. Goldkuhl & Röstlinger, 1999), that gives a relational and contextualized description of the practice of an organization, several organizations, or some part of an organization. ToP emphasizes different "governance forces" of a work practice, i.e. external assignments (from customers) and internal assignments (from management), external and internal norms and also instruments used in the work practice (material as well as immaterial). ToP also distinguishes between transactional and infrastructural conditions. Transactional conditions refer to the realization of one transaction, while infrastructural conditions are used in the realization of one or several business transactions. ToP is used to characterize work practices and consists of the following four main categories: *actors in roles*, *actions*, *action objects* and *relationships between actors/roles*. Such work practice can be delimited in different ways, i.e. as a whole organization, as some parts of an organization or as an integral part of (the interaction of) several organizations (Goldkuhl & Röstlinger, 2002).

For the purpose of describing multi-organizational collaboration as a business, the latter work practice definition has been used (i.e. multi-organizational collaboration as a work practice of several participating business parties). ToP focuses on how a work practice satisfies its clients through the value production based on different prerequisites. Products for the client, based on different prerequisites in the production, could be seen as the main result of a work practice and the products are the result of a transformation of raw material into products. In ToP, assignments are used both as an externally furnished product order and as an internally created assignment and acknowledge the economic compensation and different norms and judgments have impact, in terms of regulations, on the business performance. ToP also recognizes that work practice ability evolves over time through experiences from performed actions. Work practice ability could be instruments for action, consisting of knowledge, artifact functionality and supporting descriptions (ibid.). In ToP, a work practice can be defined in the following way: "A work practice means that some actor(s) - based on assignments from some actor(s) - makes something in favour of some actor(s), and

sometimes against some actor(s), and this acting is based on material, immaterial and financial conditions and a work practice ability which is established and can continuously be changed." (Goldkuhl & Röstlinger, 2002).

Developing MOP, Theory of Practice (ToP) has been used primary as a driver for defining multi-organizational collaboration as a practice. The different categories (in terms of conditions for and results of actions on transactional and infrastructural level) have been defined in accordance with the theory. Thereby, ToP has been applied in a domain-specific context creating an instantiation of multi-organizational collaboration. A multi-organizational collaboration as a practice involves several organizations with different roles. ToP supports the identification of the stakeholders in terms of business actors that act on behalf of these organizations, conducting value-producing activities in the collaborating processes. Therefore, a multi-organizational collaboration is a collaboration business (involving several organizations) rather than collaborative business among several organizations. Further, ToP also supports the process of defining the business assignment for such collaboration business.

In Information Systems Actability Theory (ISAT) information systems are seen as systems for action and communication (e.g. Ågerfalk, 1999) and in the theory different use situations are conceptualized: Interactive, automatic and consequential use situations. ISAT has been used for design and evaluation of actable information systems, and actability is a central notion in the theory. In Cronholm et al. (1999), actability is defined as "*An information system's ability to perform actions, and to permit, promote and facilitate the performance of actions by users, both through the system and based on information from the system, in some business context*". ISAT acknowledges information systems as an organizational action artifact (Goldkuhl & Ågerfalk, 2002). In MOP, ISAT has been used to define information systems as systems for action and communication and also inspired the notion of business artifacts (in combination with the definition by Hevner (2004) and Goldkuhl & Lind (2010)). In MOP, information systems are seen as business artifacts, which means that they have a supportive role in realizing complete action patterns.

Essential Categories in the Multi-Organizational Perspective

In order to characterize MOP as a perspective, it is relevant to identify the constituents of such perspective. Concept analysis has been used to identify the relations among the identified categories and the following is a description of the outcome of that analysis: a concept diagram (*see figure 5*) below. In the description of each concept below, the values behind the concepts are shown.

The most central concept in MOP is *business action* as social action. The notion of business acts builds upon the notion of social action, which could be either communicative or material. In (Lind & Goldkuhl, 2003) a business act is defined as "performance of a communicative and/or material act by someone aimed towards someone else". *Conditions* for and *results* of business actions are *action objects* that could be of communicative and/or material character (Goldkuhl & Lind, 2008). Therefore, a business act can be a *condition* forming the basis for an action producing a *result*, which in turn can become a condition for another business act.

To further deepen an understanding of interaction patterns, initiative/response (I/R) analysis inspired by Linell (1998) has been used. Two business acts constitute an *action pair*, which could be characterized as *initiatives* and *responses* of actions (confer Linell, 1998). One action can be an *initiative* that gives rise to following action(s) (*responses*) and/or a response to prior actions. Therefore, business acts could be seen as multifunctional (Goldkuhl & Lind, 2008). Further, business acts as social action have a *communicative function* that reveals the intention behind the act and a *propositional content*, meaning what the act is about (see Searle, 1969). To exemplify, a forecast has the communicative function to communicate future need for capacity and the propositional content of the forecast is the information that is communicated (i.e. articles, amounts, delivery date, etc).

Actors have different *roles* and act on behalf of an *organization* (Ahrne, 1994) realizing a *business assignment* (*for multi-organizational collaboration*) directly or indirectly fulfilling *customer expectation*. Organizations are created by humans and for the purpose of those humans. Organizations cannot act by themselves, they need humans and/or artifact (such as IT-systems) to perform actions (ibid.). In Goldkuhl & Röstlinger (2002) an organization is characterized as "*an agreement (communicative fact) between the principals and other parts of the society and through such constitutive actions, an organization is given a formal authority to act*". In a multi-organizational perspective organizations are actors. *Actors* are seen as human *agents* performing business acts. In a multi-organizational perspective information systems are characterized as systems for action. Such a perspective on

implies that IT-based information systems are able to perform social actions (Goldkuhl & Ågerfalk, 2002). An IS is an artifact, and must thus be congruent to the actions of humans and to the overall objectives of the organization.

The multi-organizational perspective could be characterized as assignment-driven, where the assignment is the delimiter for actors, actions and action relations identified as parts of the collaboration business (c.f. business networks in Ford, et al., 2002). A business assignment refers to what multi-organizational collaboration business should be coordinated for, i.e. realizing customer expectations in an efficient way. Such an assignment implies *collaboration* between involved parties (organizations) and regulates the realization of one or several *business transaction(s)*. Collaboration could be seen as the overall actions (with their inter-relations and performers) in the realization of the business assignment in a collaborative manner. Another way to express collaboration is as the overall business action pattern.

Such an assignment also requires *coordination* supporting *business interaction* and requires *business artifacts*. The notion of artifacts has become a core concept in the IS-field (see Hevner et al., 2004). Artifacts are central in the area or IS and especially IT-based artifacts such as IT-systems (inspired by Simon, 1986). There exists, however, other types of business artifacts, that are not IT-based, such as business models, requirement specifications and agreements. In a multi-organizational perspective, the notion of business artifacts is *conceived as being of different types (business models, agreements, IT-systems) and on different levels (abstract knowledge and situational knowledge)* (c.f. Goldkuhl & Lind, 2010). Therefore, the definition of business artifacts in a multi-organizational perspective goes beyond the notion of artifacts as IT-based phenomenon.

Coordination is also required for collaboration. The constituents of business interactions could be seen as business communication and exchanges of value. Business interaction between the involved parties in collaboration is complex and could be organized or divided into several *interaction areas*, related by different *integrated communicative projects*. Integrated communicative projects consist of the parties involved in the collaboration process, the action constituting the interaction between them and their inter-relations. In other words, integrated communicative projects are action patterns on a type level. The *parallel communicative projects* can then be seen as instances of such generic action patterns, acknowledging the competing commitments made by collaborating parties. In the multi-organizational perspective, interaction areas are used to handle the complexity of business interactions (Haraldson & Lind, 2010). Business interaction consists of several business transactions that in turn can be delimited as one or several areas of interaction. A business transaction consists of several actions within business phases from proposals to assessment (Lind & Goldkuhl, 2003). Business transactions as well as action pattern can exist in variants, implying *process variants*.

An *action pattern* bundles together one or several business transaction(s) and consists of inter-linked conditions and results. Further, action patterns are constituted by the establishment and realization of one or several action relation(s). Action patterns could also be explained as several inter-linked action pairs. Further, *business agreement* is an essential part of a business assignment. Business agreement is the contract regulating the roles and responsibilities of the parties. *Customer expectation* (regarding product and service) is based on customer needs, formulated as the agreement made between customer and supplier in the establishment of the customer order. Such realization, reflecting integrated as well as parallel communicative projects implies complete action patterns and business artifact can be used to ensure realization of such action pattern.

Table 1: Constituents of MOP 2.0 and sources of inspiration

Category	Source of inspiration	Category	Source of inspiration
Business action	SIP	Business interaction	BAT
Initiative	BAT, I/R analysis	Business transaction	BAT
Response	BAT	Organization	ToP
Condition	SIP	Customer expectation	ToP
Result	SIP	Action relation	SIP
Business agreement	BAT	Coordination	BAT
Business assignment	ToP	Information system	ISAT
Collaboration	MOP	Business artifact	ISAT
Actor	SIP	Process variants	ToP
Role	SIP	Communicative function	SIP
Interaction area	MOP	Propositional content	SIP
Effect	SIP	Parallel communicative projects	MOP
Integrated communicative projects	MOP, inspired by Linell (1998)	Organization	ToP
Action pattern	BAT	Coordination	BAT

In this paper, pragmatic foundations have been used to describe a multi-organizational perspective for multi-organizational collaboration. MOP is to be conceived as a pragmatic theory on action, activities, and practices; i.e. knowledge about action (c.f. Goldkuhl, 2008) and could therefore be characterized as a pragmatic construction.

A MOP for business and IS design should not be comprehended as a full cover theory for design and evaluation of multi-organizational collaboration and supporting artifacts, rather it should be considered as a complement to existing change analysis methods extended with acknowledgment of multi-setting aspects in modeling situations and requirement elicitation. However, such application requires a thorough analysis in order to rule out possible contradictions on a perspective level. In the action cycles from which MOP has emerged, change analysis methods (influenced by SIP, BAT, and ToP) were applied. However, MOP is to be seen as a domain-specific practical theory to be applied when focusing multi-organizational collaborative settings. The overall ambition with MOP is to become established as a design theory, in order to design collaborative business processes and supporting artifacts to enable competitive realization of collaboration business assignments. The inter-relations of these different theories are illustrated in *figure 6* below.

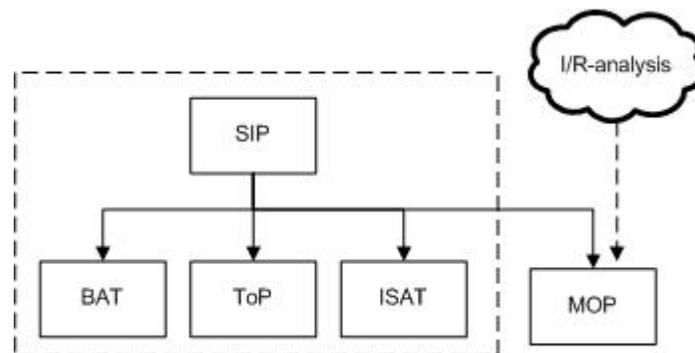


Figure 6: Used theories and MOP as a complementary theory inspired by I/R analysis

As described above, MOP has been generated through action and design science research. Action has thereby been the source of knowledge. As claimed by Goldkuhl (2008), such knowledge can be reached by actions that are arranged, conducted, and studied. This relation to pragmatism is called knowledge through action (ibid.). Since this paper handles the issue of grounding a multi-organizational perspective in a pragmatic ontology, very little has been said on the application of MOP in practice. However, since a pragmatist is interested in actions and the knowledge

of which actions are successful and which are not, the application of MOP is central. From a pragmatic perspective, knowledge development should be about developing knowledge for actions (Goldkuhl, 2008) and ensuring that the knowledge produced holds practical value. MOP is intended to be used in designing and evaluating multi-organizational collaboration and IS. Therefore, the objectives for MOP is to function as a practical theory based on a pragmatic paradigm that sees scientific knowledge as means to improve human practices (Dewey, 1938). Applying MOP in different settings, capturing the effects from using MOP, is essential to evaluate the perspective both as a base for refinement, and in relation to the intended goals. Hence, the future research will focus on realizing MOP in order to gain such knowledge and improve MOP to respond to the validity claims raised in accordance to a design theory. Another area of further research would be to further theoretically ground MOP in relation to other, not yet acknowledged, theories covering inter-organizational and social interaction.

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