

# Contributions of the CCO approach to shaping the organizational structure

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## ABSTRACT

The ‘communication-constitutes-organization’ approach has been attracting attention in recent years, providing a new perspective on communication and its impact on organizational characteristics. As the key driver of the organization, communication creates, shapes and sustains organizational work processes as well as practices and therefore builds the foundation of a successful business. This paper’s objective is aimed at the connection of communication and organizational structure. Building on existing models, the paper studies organizational structure from CCO perspective, additionally supported through the identification of problem areas. The applicability of the CCO approach is researched based on interviews in a case company, which is growing increasingly and faces communicative complications. Drawing on the CCO model of McPhee and Zaug (2000, ‘Four Flow model’), a problem identification network was constructed based on the analysis of interviews, which lead to the underlying communicational processes as the cause of difficulties. In the context of the case company, the analysis of problem factors by the network benefits from applying the CCO approach and especially the Four Flows model, as it enables a new path towards the effective improvement of organizational structure. The CCO approach contributes to new insights for aligning the structural characteristics with the underlying communication processes and interactions – if communicational processes are positively influenced, structural benefits will follow.

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## Keywords

CCO, communicative constitution, organizational structure, communication, Four Flows model, interaction

## 1. INTRODUCTION

Little attention has been given directly to communication in organizations in past research, as the focus has mostly been aimed at the controlling and handling of an organization, including communication as only one part (Cornelissen, Oswick, Christensen, & Phillips, 2008). The increasing interest in communication as an ongoing strategic process picks up the underestimation of communicational consequences (Christensen & Cornelissen, 2010) and develops new perspectives to organizational communication.

Here, the communication-constitutes-organization (CCO) approach has been of particular interest. The general claim in this approach is that communication is “the means by which organizations are established, composed, designed, and sustained” (F. Cooren, Kuhn, & Clark, 2011, p. 1150) and therefore represents the most important process in the organization. This relatively new perspective can be related to many issues of corporate organization, but this paper will focus specifically on the influence of communication on organizational structure. To build the connection between communication and structure, structure can be viewed as a pattern of interaction which is continuously established and reinforced (Ranson, Hinings, & Greenwood, 1980), equating communication and interaction. This conceptualization is influenced by the coactivational perspective, viewing the “organization as a communication network, in which actors or subunits recurrently process resources and information” (Dow, 1988, p. 56).

To further establish the relation and impact between communication and structure, the research’s attention is targeted at a case company, offering telematic products and services for the logistics sector. Providing software, hardware, seamless services, consulting and project management demands high flexibility in a complex work environment. The company supplies innovative concepts as well as products since 1985. Due to strong growth and increasing customer demand as well as complexity, the need for flexible communication gets increasingly important. Currently, the company used in the case study is influenced by a multitude of communication tools varying per department, for instance an ERP system, a ticket system, a chat tool, a bug tracker for software development and the usual communicational ways such as face-to-face dialogues, mail and telephone calls. This ongoing struggle for effective communication has resulted in the need for structural changes and requires a new perspective.

This new angle for the research area of organizational structure can be provided by the previously mentioned ‘communication-constitutes-organization’ (CCO), which focuses on communication as the starting point driving the whole corporation. It also addresses the research gap as identified by Christensen and Cornelissen (2010), which recommends the research of the “structural dimensions of communication” (p.404).

To find out what influence the CCO approach can have on the structure, the following overall research question guides the outline of this paper:

*How can the CCO approach contribute to shaping the organizational structure?*

As the main premise of the CCO approach is that communication represents the key driver of every organization, the question will be answered based on an analysis of communication in the case organization. This analysis is specifically aimed at the identification of weaknesses in the communication characteristics of the case company, which establishes the possible starting points for the influence on structure.

In the remainder of the paper, the characteristics which are part of the CCO approach will be conceptualized and explained, along with an elaboration on the origin as well as development of the theories surrounding the CCO approach. Moreover, the theoretical framework will address the connection to organizational structure, mostly characterized by the research of McPhee and Zaug (2000). The four operating flows – membership negotiation, reflexive self-structuring, activity coordination and institutional positioning – lay the foundation for the relation between communication and structure as well as build the basis for research design and data collection.

Applying the Four Flows model, the data is analyzed in terms of the communication characteristics, resulting in a network model from which the problem areas can be identified. Reviewing the usage of the CCO approach for the identification and problem analysis and ultimately stating what the application of the CCO approach can contribute to the organizational structure, the overall research question is addressed in the final part of the discussion.

## 2. THEORETICAL FRAMEWORK

### 2.1 The CCO approach

In the field of organizational communication, a variation of research streams has emerged following the new CCO approach, giving rise to new theoretical advancements connected to organizational communication. The new direction of research focuses on the idea of a ‘communicative constitution of organizations’. This idea has evolved from the original idea of organizational communication, which explains organizations as objectified, separate phenomena, influenced by bureaucracy and administration (Tompkins, 1984) or concentrated on the controlling of communication as more of a by-product (Christensen & Cornelissen, 2010; Cornelissen et al., 2008).

In contrast to this original idea, CCO research is based on the assumption that communication is the driving force of organization, creating, generating and also sustaining the practices of an organization (Schoeneborn, Kuhn, & Kärreman, 2018) and responsible for composing the organizational existence (L. L. Putnam & Fairhurst, 2015).

#### 2.1.1 Conceptualization

With rather abstract terms like communication, constitution, and organization, the general assumption of the CCO approach may initially appear ambiguous as well as unprecise.

In the context of the CCO approach, communication serves as mediator, created by an agent (François Cooren & Taylor, 1997). Communicative processes translate an action into an object with certain properties contributing to the operating practice, also interpreted as the “ongoing, dynamic, interactive process of manipulating symbols toward the creation, maintenance, destruction and/or transformation of meaning which are axial – not peripheral – to organizational existence and organizing phenomena” according to Ashcraft, Kuhn, and Cooren (2009, p. 22). Here, the axial alignment describes the relating and forming relationship of communication to the organization instead of the peripheral meaning of communication, only providing input and output. In practical application, this supports the recognition of dependencies as well as sharing of knowledge (Cataldo & Ehrlich, 2011), also referring to the ongoing social interaction which impacts communicative processes (McPhee & Iverson, 2009). This builds up to the importance of communication as an “ongoing strategic process” (Christensen & Cornelissen, 2010, p. 397).

Further, the CCO approach mentions the term ‘constitution’ as the link between ‘communication’ and ‘organization’.

Communication that constitutes means that it build the basis for social entities (Littlejohn & Foss, 2009). According to the Putnam & Nicotera (2009), the term ‘constitution’ can be split into three parts: first, the substance relating to components and their relationship, then a formal part with boundaries and frames, as well as a causal part including guidelines for control.

The term ‘organization’ in the context of CCO can be depicted as a purposely constructed and sustained social system consisting of members whose actions are aligned towards a certain intention (Jelinek & Litterer, 1994). A more specified definition of organization is complicated to grasp, because as it is constructed, it is also a loose social phenomenon which changes regularly.

### 2.1.2 Premises of the CCO approach

F. Cooren et al. (2011) list six premises, summarizing attributes characterizing the CCO approach. These premises are aimed at outlining CCO scholarship so far and propose a common ground for further theorizing. To understand the background and meanings of the CCO approach, an overview over what is considered the scholarship needs to be established before going into more detailed and meticulous theoretical models as well as schools of thought.

The first premise mentions the use of communicational events as subject of analysis. Not only specific language and discourse plays a role in the constitution of organization, but mostly events of interaction help to construct reality (Jian, Schmisser, & Fairhurst, 2008; Kärreman & Alvesson, 2008) and should therefore be analyzed. Following the previously defined meaning of constitution and the claim that constitution happens communicatively, “one should examine what happens *in* and *through* communication to constitute, (re-)produce, or alter organizational forms and practices” (F. Cooren et al., 2011, pp. 5-6).

The second premise underlines that what is meant by communication should be defined as clearly as possible. The definition of Ashcraft et al. (2009) is abstract – communication does not only mean to investigate talk in an organization, it includes the organizational culture, behaviour and attitude towards conversation partners and other organizational members, appearance and also non-human documents (Cornelissen, Clarke, & Cienki, 2012; Fairhurst & Cooren, 2009).

The double-track nature of communication is part of the third premise. Constitution always happens in interference – the intention of the agent is never conform with the interpretation of the recipient (J.R. Taylor & Van Every, 2000). As ambiguity, heterogeneity and uncertainty are typical characteristics of communication, attention should be paid to the creation of meaning and interpretation in the context of the CCO approach.

Connected to the second and third premises, the fourth premise again emphasizes the importance of “*what* or *who* is taking part in the constitution of organizational processes” (F. Cooren et al., 2011, p. 8). As non-human agents play a role in communicational events, the number of potential agents participating in the events is large. To provide an explanation for the communicative constitution means then to remain open for various influences and actors in communication.

The fifth premise emphasizes the reach of communicational events. Referring to the second premise, communication and its events in an organization are facing a large scope, which establishes the necessity for a wide range of analysis. This does not mean to look beyond the scope of communicational events, it rather refers to the influence of communication on social events, also called “grounded-in-action” (Fairhurst & Putnam, 2004, p. 6). Looking at those social events, the analysis should

be aimed at how the actors are participating in communication and the effects of those actions (Schoeneborn & Vasquez, 2017).

The different directions of the CCO research are addressed in the sixth premise by F. Cooren et al. (2011). Referring to the verb dimension with the process of organizing or the noun dimension with the process of organization should not be the issue of discussion – both directions as well as directions shifting away from the distinction can help to acknowledge the constitutive nature of communication. Especially differentiating the various perspectives can contribute to tackle the key issue and initiates new paths to understanding organizations, which is highlighted in the next section.

### 2.1.3 Distinction of research

Although the three main schools of thought share the general concern of process and interaction (F. Cooren et al., 2011) and the premises as explained in section 2.1.2, they differentiate in the relational understanding of communication and organization. They can also be differentiated based on the research of Schoeneborn et al. (2018) who mention three different dimensions of the relation between communication and organization. The first dimension is the verb-noun tension (communicating – organization), the second dimension refers to the verb-verb tension (communicating – organizing) and the verb-adjective tension forms the third dimension. These three dimensions are important for the later distinction of theory towards the approach used in the methodology.

The first school of thought, the Montreal school, is guided by James R. Taylor and focuses on the co-orienting properties of coordinated activity. The analysis of conversation with its rules as well as agreements, together with narratives, speech and other dialectal patterns, form the basis for this stream of research (Schoeneborn & Vasquez, 2017). J.R. Taylor and Van Every (2000) explain the organizing properties of communication as they emerge in text and are realized through the integration in conversation. Connected to the research of Schoeneborn et al. (2018) which describes three tensions currently driving the research, the Montreal school belongs to the verb-noun tension viewing communication as creating social realities.

The Social Systems Theory school of thought by Niklas Luhmann builds a relatively new, but also acknowledged approach to CCO (F. Cooren et al., 2011; Kuhn, 2012). Luhmann applies the autopoietic perspective to communication, suggesting that the recursive interaction with the system itself leads up to the organizing properties (Hernes & Bakken, 2003). For Luhmann, “organizations are one form of social systems that are constituted by interconnected and recursively events of communication” (Schoeneborn & Vasquez, 2017, p. 8). This second school of thought refers to Schoeneborn et al.’s second dimension, the verb-verb tension. Here, communication is regarded as a circular shaping practice, continuously influencing the organization.

As a third school of thought, the Four Flows approach is connected to CCO scholarship. Four communicative processes – membership negotiation, self-structuring, activity coordination and institutional positioning – generate the model constituting organization (McPhee & Zaig, 2000). The mutual alignment of these four flows creates the constitutive nature and forms contextual relations which coordinate and control (McPhee & Iverson, 2009). The Four Flows model can contribute to the verb-adjective tension, which focuses on social phenomena rather than just formal organizations (Schoeneborn et al., 2018). Communication is therefore not only applicable to formal organization, where it takes a macro view, but can also contribute a lot to more loosely coupled systems and the micro perspective (Dobusch & Schoeneborn, 2015; MCPhee & Iverson, 2009). The micro perspective hereby does not focus on individual

organizational members, but on the processes of communication and the interaction flows constituting the organization (Schoeneborn & Vasquez, 2017).

## 2.2 CCO in relation to structure

The organizational nature of communication as addressed in the CCO approach is applicable in relation to structure, as the structuring itself equals the assumption of organizing properties. Both Weick (1995) and J. R. Taylor (1993) share the view that organization is an effect of communication, which in turn means that structure is also preceded by communication. The relation between structure and communication is also mentioned in theory, as Christensen and Cornelissen (2010) specifically address the structural dimension of CCO as a gap in research.

Organizational structure in particular is defined by Ahmady, Mehrpour, and Nikooravesh (2016) as “the framework of the relations on jobs, systems, operating process, people and groups making efforts to achieve the goals” (p. 455) and “the method by which organizational activities are divided, organized and coordinated” (p. 456). This is supported by the position of Rezayian (2005), which views structures as means for activity coordination and member control. Further, Ahmady et al. (2016) define three dimensions of organizational structure: the first one presents structure as determining the relationships and information management in organizations, which includes the hierarchical levels and control span of managers. The second dimension refers to departmental division and units in the organization, and the third dimension mentions the inclusion of coordination systems and the effective alignment of the whole organization.

Ranson et al. (1980) define structure as a regular and permanent pattern, drawing on the framework and interaction dimension. This is also reflected in research by Dow (1988), who is addressing the same perspective as Ranson et al., but uses the terms configurational and coactivational view. On one hand (framework or configurational perspective), structure is displayed in roles and procedures, in rules and bureaucracy, taking a more formal perspective following willful design of management. On the other hand, members largely influence processes by forming relationships, problems and solutions, which develops structure in an informal way and resembles a communication network (interaction or coactivational perspective). Both perspectives co-develop the definition of structure as a mediator of control which is constantly built and transformed by interaction while also influencing the interaction processes. Relationships, entities, contexts, configuration and also temporal stability can be counted to coin the communication structure of every organization (Johnson, 1992) and constantly reshape it. Ranson, Dow and Johnson have supported the idea of CCO before it was labeled as such and emphasized the connection to structure: The factors mentioned are *developing* and *transforming* structure – they are parts of communication which can also shape structure. Additionally, various researchers support the claim that interaction – in this context interchangeably used with communication – can create social structure, further strengthening the connection (Browning, Greene, Sitkin, Sutcliffe, & Obstfeld, 2000; Littlejohn & Foss, 2009; Schoeneborn & Vasquez, 2017).

## 2.3 The Four Flows model

The Four Flows model for structuration of McPhee and Zaug (2000) forms the basis for further research in this paper, as the four flows described in the model are constitutive of organization (Blaschke, Schoeneborn, & Seidl, 2012; Francois Cooren & Fairhurst, 2009; F. Cooren et al., 2011; McPhee & Iverson, 2009; Putnam, Nicotera, & McPhee, 2009; L. L. Putnam & Fairhurst, 2015; Schoeneborn & Vasquez, 2017). McPhee and Zaug study

four communicational flows, taking up the interactive and producing nature of these to build a social system, hence an organization (F. Cooren et al., 2011).

Although the research by McPhee and Zaug can be differentiated from the other schools of thought (cf. section 2.1.3), it offers advantages related to the perspective of the approach as well as the application possibilities. The model's view is not aimed at an individual, bounded analysis of language and discourse, but rather aims at the relations between the flows, building up to organizational processes as a whole (Putnam et al., 2009). Moreover, the model focuses on the context of communicative events which guide the organization, emphasizing that not characteristics of a structure form the foundation for the constitution of an organization, but the incorporation in processes does.

With their model of organizational flows, McPhee and Zaug have established a concrete opportunity for application, while particularly focusing on the structure of an organization. They specifically describe their model as broad and abstract, but refer to this as an advantage: The flows might display parts of the communication that creates, but they simultaneously identify the necessary communicational processes that constitute an organization. Although the flows are partly overlapping and mutually influence each other as explained later, they form a structured relation which in turn depends on communicative processes and events (McPhee & Zaug, 2000).

Membership negotiation, organizational self-structuring, activity coordination and institutional positioning form the model's four flows. Each flow is partly an “interactive communication episode, usually amounting to multi-way conversation or text passage, typically involving reproduction of as well as resistance to the rules and resources of the organization” (McPhee & Zaug, 2000, p. 33). The flows are interrelated and partly overlapping with the other flows, while contributing different dimensions on their own.

The first flow - membership negotiation - mentions the relationship between members and the organization, recognizing the different states the members might find themselves in. The recruitment and socialization of new members, the incorporation into the organization, building of routine processes, shaping of the relationship, as well as identification and identity are part of the flow. As Giddens (1984) stated, the basis of existence for all social forms is human agency and the communication of individual humans. Therefore, the relationship of members towards the organization is important for the constitution of the same organization.

Organizational self-structuring as the second flow focuses on the “reflexive control and design” of an organization (McPhee & Zaug, 2000, p. 35). This flow can be distinguished from the third flow ‘activity coordination’, as it includes connections, routines, and social systems without aiming at specific work processes. Communication listed under self-structuring can for instance be organizational documents like charts, organigrams, hierarchies, but also feedback and evaluation for members and formal and standardized control processes like budgeting and accounting. The purpose of this flow is generally to control and manage the organisation according to a strategy. The relevance of this flow is two-sided: for one, it enables an agreement of routines and norms before the issue emerges. Also, it guides the organization and its processes within membership relation and collaboration. Organizational self-structuring therefore aims to build a system, which establishes routines for specific, returning situations and problems, overall supporting the organization in its survival. The communication related to that is not as clear as the purpose but is still a vital part of the constitutive communication and

accordingly of the flows, as it is influencing the production as well as reproduction of structure.

The third flow, activity coordination, is in contrast to organizational self-structuring directly focused on the operating processes of work. Each member follows activity streams which are mostly pursued in collaboration and coordination with other members. The more complex the organization is, the less standardized the activities are and the more problems have to be solved, requiring effort to coordinate the activities. The relevance of this flow is based on the dependency of the organization on flexible problem-solving – cooperating and collaborating is crucial for an organization's existence.

Institutional positioning poses the fourth flow in McPhee and Zaug's model for structuration. This point emphasizes the communication outside of the organization, for instance to customers or suppliers. Members of the organization who act on transboundary roles participate in institutional communication, determining the image and identification of the organization towards the environment. As organizations are dependent on other participants of the value chain and the transactions thereof, communication processes connecting it to other institutions play a constitutive role.

The four flows together are mutually constitutive and interrelated, but not necessarily universal. Nevertheless, together they create a model which offers a specific starting point for the analysis of communication from the CCO perspective.

### 3. METHODOLOGY

#### 3.1 Research approach

To answer the research questions, a case study was conducted based on the Four Flows model by McPhee and Zaug (2000). The model initiated the analysis of how the structure can be shaped in congruence with the established communication.

Drawing from the established communication flows, the communicational problems were identified and attempted to be solved, stating how communication can shape the organizational structure in a more effective way based on the CCO approach. The aim is to construct a network model of root problems of communication, restricting efficiency as well as effectiveness of work, based on the analysis of the Four Flows and to propose solutions related to the problem areas.

#### 3.2 Data collection and analysis

The case study followed a qualitative approach, which means 15 one-hour interviews were conducted in the case organization. The full list of questions can be found in appendix 1. Although the questions helped as a starting point for the interviews, the dialogue was kept open to create a comfortable environment and get to the ground of the topics listed in table 1. The questions addressed the Four Flows theory, split up into subtopics. The subtopics are defined based on the definition of the Four Flows as found in the book of L. L. Putnam and Nicotera (2009). A full presentation of how the subtopics were derived from theory can be found in appendix 2. The views of each interviewee on the communicative processes and therefore the subtopics were focused on in the conversations. Each interview was recorded with the consent of the participant to enable a transcription and therefore a further analysis of the data.

After transcribing the content of the interviews, the data was coded using the qualitative data and research software atlas.ti, which enabled the structuring as well as transparency of the collected data. The used coding approach is a combination of inductive and deductive coding. Starting with a deductive approach, the 11 (or rather 10, due to the dual approach of the

code 'Commitment & identification') codes which emerged from the theory were used. The codes resemble the topics related to the theoretical model in table 1.

**Table 1: Operationalisation (Subtopics of Four Flow model)**

<b>1. Membership negotiation</b>	
<b>Commitment &amp; identification</b>	Relationship of members to organization, organisational culture, shared values
<b>Establishing a routine</b>	Introduction and induction of members in work processes, norms and routines
<b>Leadership</b>	Management style, including decision making, exercising of authority
<b>Partial inclusion</b>	Separation or differences in membership
<b>2. Organizational self-structuring</b>	
<b>Activity patterns</b>	Recurring patterns of activity, self-commissioned or controlled through organisational rules and routines
<b>Development of trust relationships</b>	Building of a sense of reliability and confidence, reinforcing and improving relationships and interactions
<b>Legitimacy of authority &amp; control</b>	Forming boundaries and feedback mechanisms, internally recognized and understood by members, e.g. through organizational documents
<b>3. Activity coordination</b>	
<b>Problem solving</b>	Problem solving mechanisms and reaction of members to problematic situations
<b>Task coordination</b>	Coordination of teams, department wise and cross-divisional; focused on reciprocal team coordination
<b>4. Institutional positioning</b>	
<b>Commitment &amp; identification</b>	(same as in membership negotiation); relates here to the image communicated to the environment, fed by internal culture
<b>Communication to external parties</b>	Exchange with customers, suppliers, etc.; relation to stakeholders

Further analysis required an inductive approach as well, using the participants words as basis for codes. This included starting with a general code 'Weaknesses of communication', modified later to various subgroups and codes in the process of analysis. Table 2 shows the inductively developed codes, summarized as 'Weaknesses of communication'. Although they are partly similar to the subtopics as mentioned in table 1, it is important to distinguish between the subtopics as grounded in theory and the problem areas as found out in the interviews in the coding to fully grasp the context of problems. The coding of subtopics namely focuses on the analysis of characteristics according to the Four Flows model, whereas the inductive codes were applied to the interviews as definition of problems. This means that the codes of table 1 act as basis of the analysis of underlying reasons and the codes of table 2 represent the problem areas as addressed by interviewees. The full list of code groups and included codes can be found in appendix 3, including the quantity of application, an explanation of what is meant to be found out and an example quotation. For further analysis, the codes were linked to each other, connected through the relationship determined by the quotations. For instance, by focusing on the flow 'Membership negotiation' with its belonging code 'Commitment & identification', the analysis of quotations explained the relationship to 'Disruptions in workflow', etc. The relationships between the codes enabled the construction of a network and additionally show the underlying reasons for the problem areas, as they connect the problem to the characteristics found out through the Four Flows. The relationships are necessary and crucial for the study of CCO on structure, as they help to gain an insight into the foundational characteristics of communication.

**Table 2: Codes emerged from induction (Influencing codes)**

Code	Explanation
<b>IA*: General knowledge sharing &amp; transparency</b>	General information acquisition and knowledge sharing between employees
<b>IA: New employees</b>	Information acquisition for new employees
<b>IA: Tracking of process, problem identification, prioritization</b>	Sharing of progress, e.g. while working on projects; sharing and updating of problems and priorities
<b>IA: Written documentation</b>	Focus on written knowledge and information sharing
<b>IA: Source of information</b>	Knowledge about who to approach for certain information
<b>Disruptions in workflow</b>	Interruption of processes due to questions/inserted tasks/problems
<b>Flood of information</b>	Mass of requests, tasks; keeping the overview
<b>Resource scarcity</b>	Shortage of time and labour force
<b>Acceptance &amp; use of communication tools</b>	Willingness to use variety of communication tools; individual preferences in usage
<b>Flexibility</b>	Complexity and variability of processes
<b>Cross-functional information sharing</b>	Inter-departmental information sharing
<b>Consistency &amp; coordination in work processes</b>	Alignment of work processes and tasks

\*IA means information acquisition, originally one code, was separated into sub codes

### 3.3 Reliability and validity assessment

The perspective of the CCO approach can bring valuable insights to the structuration of an organization. Due to the contextual nature of communication, a case study supports the application of the CCO perspective. The case study in one organization therefore helps to gain a complete picture of the communication in the scope of the research, focusing on a qualitative approach rather than a quantitative.

The employees who participate in the research volunteered to be questioned and vary in their job description, the department they work in and their work experience. As fifteen interviews were conducted with participants from different departments and the sample size is therefore small, the reliability to confer the results onto other organization is limited. However, as the study is aimed at the practical application of the CCO approach on the structure, the results are relevant for the organization and support the transferability to a certain degree.

Before the interview, consent for the recording of the conversation as well as approval for data collection and analysis was agreed. The interviews were conducted in an open manner, which means that although a list of questions was available to cover certain topics, the dialogue was developed concurrently. That encouraged the interviewees to share their thoughts and ideas openly.

As already explained, the data was coded to link it to the research approach after the interviews. This facilitated the structuring of data, which ultimately influences the quality and reliability of the data analysis. The combination of a deductive and inductive approach supports the links between theory and practice, as it verifiably connects the theoretical terms with practical problems. This enables the construction of a network, to visually present the analyzed data and interpret the results.

## 4. RESULTS

This section sets out to present the results from the interview analysis as done with the software atlas.ti. As already listed in table 1, each of the four flows is associated with subtopics. These subtopics and their characteristics as found in the case company will be put forward in section 4.1, together with an explanation and supporting quotations. The full analysis according to the Four Flow theory enables the problem identification, which makes an overview about the case company and its operational flows crucial. Especially the understanding of the communication characteristics supports the problem identification, because to fully analyse the problem, its cause needs to be found out.

Therefore, the Four Flow characteristics of the case company are building the basis for the problem identification and understanding in section 4.2. In this section, a problem network is introduced, premised on the subtopics which are related to the influencing codes as mentioned in table 2. These relationships are grounded in the interview analysis and reflect the perception of employees about weaknesses of communication. An interpretation of the results will follow in section 5.

### 4.1 Characteristics of the Four Flows model

#### 4.1.1 'Membership negotiation' subtopics

The flow 'Membership negotiation' contains the subtopics 'Commitment & Identification', 'Establishing a routine', 'Leadership' and 'Partial inclusion'.

'Commitment & identification', which is also a subtopic of 'Institutional positioning' according to L. L. Putnam and Nicotera (2009), is characterized in the case company through an innovative and flexible culture. Flat hierarchies define the 75-employee-strong firm and from 15 interviewees, every one mentioned the strong spirit of partnership and the family feeling that characterize the company's culture, for instance: "the special thing is the spirit – working together is like family, and that's what we're also proud of" (5:24)<sup>1</sup>. Interviewee 1 mentioned that "of course, this is not really standard work. You have much influence, you can bring new ideas forward, and although the structure has grown, everyone is doing their best to keep being innovative and flexible" (1:25) and that the "person should always be the focus, otherwise there's immediately a blockade" (1:27). Concerning the idea sharing, interviewee 2 mentioned that "it depends who is open to this and who has the capacity, but usually people can be engaged quickly" (2:21). The openness can also be seen in the organization of meetings ("Everyone can add their topics, and you address this in the meetings and the whole team talks about it" - 1:54) or solution of problems ("Generally, it is the philosophy to stick together and help each other. If there's a problem, it will be addressed" – 15:20).

The family spirit and "we-feeling" enables the commitment of employees to the organization, which determines their behaviour in terms of interactions. For instance, interviewee 3 and 4 mention that it "is fun to work here because of the interpersonal relationships"(4:11) and "people can be glad to work here" (3:17). A feeling of commitment and identification is part of communication, as it can facilitate an open environment and create long-lasting relationships with employees.

The next subtopic of the operating flow 'Membership negotiation' is called 'Establishing a routine', characterized in the case company by a complex and long induction to the firm. Establishing a routine is related to the introduction of new employees, because it addresses on one hand how new

<sup>1</sup> (5:24) refers to the quotation source; 5 is the interviewee number and 24 the quotation number

employees find a routine in their working processes. Employees only gain an overview about the company through asking and the connection of names, faces and tasks is difficult to manage – “the induction is coined by the phrase learning by doing” (4:13). Employee 8 describes that “it is difficult to become familiarized with the complex things, especially for new employees” (8:16). Especially the “use of communication tools is done differently depending on preference” (3:11) and causes complications, “because there are so many ways to get the information” (1:22). On the other hand, the establishment of routines is also not easy for longer-working employees as well, as “every day is flexible” (13:30) and “you always have to ask someone for information” (12:13).

Also, with more routine processes, employees work consistently and coordinated. The case company currently lacks this level of consistency, as they “don’t have any standards. You cannot extract something from one project and transfer it to another” (13:16) and there are “logistic training courses and product courses, but most of it happens through asking” (12:11). Thus, neither new nor experienced employees are able to establish routines, which would facilitate more efficient and target-oriented processes.

The next subtopic belonging to ‘Membership negotiation’ is ‘Leadership’. Employees consistently mentioned a competent empathy towards employees (“Strength of leadership here are competence and empathy towards employees” – 2:19), comprehensive knowledge, the motivation for self-sufficiency and the support of openness and honesty (“Openness and honesty are key values and are demonstrated as such by leadership” – 4:12) as strengths of leadership in the case company. Also, the preservation of flexibility and the spirit of feeling like a family are key values of leadership, which contribute to commitment and identification of employees with the company (“The spirit is especially important, feeling like family and working flexibly, we’re proud of that” – 5:24). The management is also aiming at decision making on a basis that includes the most involved and affected employees and “motivates people to choose themselves – most of the time they know the context better anyway” (5:35).

The subtopic ‘Partial inclusion’, also belonging to the first flow ‘Membership negotiation’ pays attention to separation or differences in membership. In the case company, as already said, an open culture is established. Information is shared “depending on in which office you sit and with which people you work together with” (2:25). Some interviewees hope for an overview, “so everyone can understand what we actually, because at the moment everything happens via asking” (5:29) or mention that it is “disappointing not to gain so much insight in the products” (9:10), although the question is at that point how much effort is also put in acquiring that overview or knowledge. Moreover, information sharing is hard, according to interviewee 9, as “information is only shared between a few people, the rest doesn’t get to know and it is not documented or filed” (9:3). This means that despite the open culture, the required information is only shared on request and only partly and differences arise through keeping to knowledge, information acquisition only by demand and information sharing per groups.

#### 4.1.2 ‘Organizational self-structuring’ subtopics

The second flow ‘Organizational self-structuring’ includes the subtopics ‘Activity patterns’, ‘Development of trust relationships’ and ‘Legitimacy of authority & control’.

‘Activity patterns’ include self-coordination and instructions to oneself and to/from others. In the case company, to-do lists are hard to create and processing of orders and tasks is done based on experience. Employees are very flexible in the execution of their tasks and can work self-sufficiently. Coordinating one’s

activities is “depending on the different communication channels and everyone has to individually create that” (1:28) and “create his own filter” (10:29). The different communication channels are used, so that it becomes difficult to get an overview and “many unplanned tasks can be simply overlooked” (1:36). This is also due to the “willingness to use certain tools in a unified way” (2:16). Priorities are set by urgency and importance of customers and colleagues. Activity patterns are mostly an issue of self-coordination: “It is definitely related to self-discipline and organization” (3:16) and every employee “flexibly decides what is most important and where the problems lie at the moment” (4:20).

Flexibility and fast reactions determine activity patterns, so that “every employee has to find a way to organize his tasks without limiting others, which is an art for everyone to learn” (10:29). Because the work processes are flexibly established, the activity patterns itself are also adjustable. Subsequently, strict and standardized work patterns would limit the flexibility.

The next subtopic of the second flow is ‘Development of trust relationships’. “If you’re new, you’re not necessarily directly going to everyone to ask.” (2:8) - Trusting relationships influence the induction of new employees, which become aware who to approach for certain information more quickly. This limits the frustration the employees face (“My impression is that new employees face a mountain – they don’t know anyone; they don’t know our systems – and that causes frustration” – 14:18). The culture as explained in the subtopic ‘Commitment & Identification’ supports trusting relationships with its key values of openness and flexibility. Also, feedback processes in meetings and the sharing of ideas creates a trusting environment (“In meetings, you can really propose improvements” – 1:26/“We had feedback meetings within the departments, which helps a lot to clear up what is working well and what we need to improve” – 5:37). This reinforces the open and welcoming culture, contributing to a good working atmosphere.

As a third subtopic of “Organizational self-structuring”, ‘Legitimacy of authority & control’ was researched in the case company. “Work processes can be shaped openly and self-sufficiently” (11:33), which reinforces the building of activity patterns but also influences the authority legitimate, when the employees trust leadership and feedback is granted. The feedback was addressed as lacking in terms of individual feedback. Interviewee 3 mentioned that “there are regular performance reviews, but that could be more detailed” (3:30) and interviewee 4 “wishes for a bit more feedback” (4:26). It was also stated that “feedback is given too rare, mostly we do it if there was a problem, but that doesn’t help with preventing problems” (8:25). Authority and control are therefore characterized through the support of ideas and suggestions as well as the openness and self-sufficiency of working processes, which was partly already explained in earlier subtopics. Control, inclusive feedback, sustainably improves working processes and helps to align them organization-wide.

Regular feedback and the feeling of fair and legitimate treatment in terms of authority and control can influence the trust in working relationships as well as the commitment towards the company. That, in turn, has an impact on the interaction between actors.

#### 4.1.3 ‘Activity coordination’ subtopics

The flow ‘Activity coordination’ includes the subtopics ‘Problem solving’ and ‘Task coordination’.

‘Problem solving’ in the case company is flexible, disrupting and a very high priority. Everyone who asks for help, also receives support. “Especially for solving problems, you have to be

flexible” (6:23) – this creates the necessity for flexible and fast activity coordination. Due to the flexible and spontaneous nature of problems, fast help is necessary, which leads to the interrupting of work processes (“You’re always getting help, even unplanned, and even if it doesn’t fit to their schedule” – 9:23). Solving problems creates the necessity to gather information, which are not available or not tracked by other employees. One interviewee said that “you have to be ready to ask again and again to get updates and to get the information you need” (2:40), which increases the difficulty to react fast.

The subtopic ‘Task coordination’ is differentiated from ‘Activity patterns’ in section 4.1.2, as task coordination is focused on the alignment of tasks with colleagues. In the case company, this is characterized by flexible processes with disruptions in the workflow, which are coordinated through communication channels and through departmental meetings. The alignment of tasks contributes to a centralization and coordination of overall work processes, which is not consequently applied in the case company (“Everyone has his individual preferences and an overview is missing” – 13:32). Although in some departments, tasks are coordinated via a tool (“Generally, one employee shares the tasks with all of the others via the ticket system” – 2:28), the mass of tools as mentioned in the introduction reduces the overview. The tasks are not centrally hold (“Every meeting can have a protocol with an excel file, where you have to keep track again” – 5:6) and “transparency is missing” (5:22). That is a risk for planning, as interviewee 6 mentioned: “If one or two people are missing, it is very critical to keep track of the tasks” (6:25).

#### 4.1.4 ‘Institutional positioning’ subtopics

The subtopic ‘Commitment & identification’ belongs to two flows, so it has already been explained in section 4.1.1.

The other subtopic belonging to the fourth flow is ‘Communication to external parties’, which refers to communication crossing the borders of the organization to the environment. In the case company, this is characterized by the complexity of products and projects without standards and variations depending on the customer. It also includes the communication to suppliers for hardware shipment. The complex requirements of customers, “who often don’t know themselves what they need and change the project multiple times” (3:38), are difficult to estimate and influence largely the flexibility of planning. With lacking documentation, the employees responsible for customers need to constantly acquire information (“Normally, I should have contacted the customer long ago when they can expect their order – but I need a variety of other information for that, which is a big problem. Theoretically, I would need to check 80 processes, just to get the shipment date” – 13:33). Again, the subtopic is of interest in the analysis of communication, as it focuses on the interaction between customers and employees and how the company is handling cross-border communication.

## 4.2 Problem identification network

After analysing the communication on the basis of the Four Flows model, this section is now focusing on the identification of problem areas in the communication. The network (see appendix 4) is constructed through the program atlas.ti and helps to identify and understand the problem areas, as its relationship enable the attribution of weaknesses to the established characteristics in the communication. The different codes as mentioned in table 1 and table 2 were manually linked based on the analysis of quotations. The relationships reflect the perception of employees about weaknesses of communication. That means that one code is associated with another code, based on the quotations that the employees gave. If for instance one employee mentioned how management contributes to the “family

spirit”, ‘Leadership’ is associated with ‘Commitment & identification’. Therefore, the relationships can contain both positive and negative aspects. Although each relationship is crucial for the construction of the network and for the understanding of the root causes of the problems, it would be beyond the scope to present every relationship. This paper will therefore focus on the most important relationships, which are building up to the overarching codes ‘Information acquisition: Source of information’ and ‘Information flood’ and explain them in detail, with quotations that proof the connection between the code chains. Three link chains will be explained in the following – these are marked in appendix 4 by a solid, marked line between the codes.

Starting with the first relationship, the Four Flows subtopic ‘Development of trust relationships’ can be connected to the influential code ‘IA: New employees’. Trusting relationships influence the induction of new employees, which have to get to know whom to approach for certain information more quickly. Especially in the complex environment of the case company, this is difficult, as “you get much information only via dialogue and if you ask” (10:20). For that, the employee needs to know who to approach for certain information, which “can only happen through asking” (9:11). This results in a constant search for someone who might be able to help and restricts the learning capability of the employee. This struggle for effective information acquisition is part of the overarching code ‘Information acquisition: Source of information’, because it describes the gathering of information and knowledge especially for new employees.

The second relationship chain emerges from the subtopic “Establishing a routine”. The flexibility in working processes and the lack of a routine in the case company is the reason for the insufficient documentation. “With better documentation, everyone could access the information” (2:34), which would influence the consistency and coordination between employees. “It would be known through the document how to solve the task” (15:6) and “the same level of knowledge is supported – everyone can reproduce who agreed what at which point of time” (10:12). This is addressed by the relationship to ‘Consistency and coordination in work processes’, as written documentation would contribute to a better alignment of work processes. Employees mentioned that “especially in sales, if everyone would reach an agreement to unify the organization and coordination, it would become easier after time” (1:33) and that “it should be attempted to unify the communication tools” (4:4). In this context, “an overview is very important” (3:13), because if processes are managed, knowledge can be better and more transparently shared. Currently, an overview over the organization is missing, especially in terms of task coordination and management. This draws the connection to the code ‘Information acquisition: General knowledge sharing and transparency’. Employee 5 mentioned that “department-wise, the coordination works okay, but it could be interlocked inter-divisional” (5:15) and employee 6 explained “the difficulty of information sharing, because it is transparent who is involved in the task” (6:22). Ultimately, this link chain results in the overall problem “Information acquisition: Source of information”, since it focuses on the overall struggle to acquire information, especially in relation to task management and task coordination.

The subtopic ‘Communication to external parties’ is the starting subtopic for the third link chain. The complexity of products and projects without standards and variations depending on the customer requires extended communication and also results in many changes and flexible arrangements (“Particularly the software support is difficult. Customers have problems, and we have many customers” – 1:43; “Every customer is varying in his



requirements” – 4:36; “My tasks are to full extent externally driven by the customer” – 7:3 ). In turn, this creates the need for status updates, problem solving and also the ranking of importance as displayed by the relationship to ‘IA: Tracking of progress, problem identification and prioritisation’. Especially the progress is difficult to monitor in the case company, as “the tasks cannot be controlled if they’re currently in work or if it has even been fully understood” (7:2) . Related to task management, it is also a “problem to distribute the tasks and receive status updates to communicate to the customer as project manager” (7:25). Priorities are set according to “who shouts the loudest, is heard the most” (10:31). Employee 10 states this problem as “totally dependent on someone who has time to do that – who is willing to track, to spread problems, to prioritize” (10:9), which connects the code to ‘Resource scarcity’. Employees are “dependent on colleagues to get the information and the access to the resource is limited” (1:45). Generally, as explained by management, “every department is overwhelmed with tasks – but we don’t have the capacity currently” (5:26). Employee 11 described that “everybody is working with 120% and no one has the time to share information, but at the same time everybody needs the information to continue working” (11:32), which results in the overall problem ‘Flood of information’. In combination with ‘Resource scarcity’, “many unplanned tasks can be overlooked” (1:36) and “keeping track of all actions and tasks while being disturbed” (3:45) is hard to manage.

To sum up, the most important problem areas as identified through the network analysis are ‘Information acquisition: Source of information’ and ‘Information flood’, which will be further addressed in the next section.

## 5. INTERPRETATION & DISCUSSION

After presenting the results in form of the Four Flows and their characteristics and the network in the last section, this section focuses on the interpretation and discussion of the found data.

To recall, the research question that was set up in the introduction is “*How can the CCO approach contribute to shaping the organizational structure?*”.

Supporting the research about the CCO approach’s contribution to structure, the analysis of the interview data aimed at the identification of problems in the communication.

Guided by the question and the underlying problem identification, this section will interpret the problem areas and the meaning of the relationships as a first part. After that, the input of the network towards problem identification and practical contribution of CCO to structure will be discussed, closing up to the research question. Ultimately, the discussion focuses on the links to theory and on a more abstract level of answering the research question and explaining the contribution of the CCO approach to shaping the organizational structure.

### 5.1 Interpretation of problem areas

Applying the Four Flow theory following the CCO approach, the overall problem areas ‘Information acquisition: Source of information’ and ‘Flood of information’ were identified. The subsequent task is now to interpret the problem areas in full scope and critically review the underlying reasons and relationships.

The first problem area is ‘Flood of information’. The mass of information that is available and needs to be processed is dependent on the position in the case company: Especially employees in project management and sales mentioned the increasing “mountain of tasks” and the need to filter information. Every task additionally results in new tasks. Filtering the information happens only based on experience, further increasing the difficulty to process the tasks, but also enabling the flexibility and individuality of each employee to have an

influence. To some extent, the perceived flood of information is an issue of self-organization – but if prioritization is unclear and not well aligned with others, organizing oneself and prioritizing the tasks is also a complex function.

The product portfolio’s nature is depending on flexible communication with the customer, which results in ever-changing information. Especially in combination with the resource scarcity concerning time and staff, the processing of information requires prioritization. In turn, this impacts an overlapping or piling up of tasks, reinforcing the perceived flood of information. Considering the company’s growth, a plausible risk is the overload of employees, but also the overlooking of mistakes as well as an exponential growth of the error rate, impacting the external relationships to customers as well as the internal culture.

The problem area is ‘Information acquisition: Source of information’. Getting the information is crucial in the case company – personally, via documentation or communication tools, or also for new or experienced employees. Employees mentioned it is always an issue with whom and how to share information. Although the benefit of information sharing can only be used if utilized correctly, the information sharing follows a rather individual approach with separated groups sharing pieces of information. Additionally, the complexity of finding out where to get the information contributes to the overall problem. Finding the information in the data base or getting to know who to approach for certain information is not clear and depends mostly on experience. Especially in the context of the product portfolio and projects, an overview of the company is lacking.

The problem is partly based on the formation of groups – the sharing of information is not consistently or regularly done and not clearly controlled, which is an effect of the company’s flexibility. This influences the lack of clear instructions concerning equal processes and equal documentation as well as the flexible induction of staff which varies with each new employee. The changing activity patterns without central task management and documentation further contribute to the lack of overview and the question of where to get the needed information.

With the company’s growth and the increasing number of employees, acquiring the information will become even more difficult. This affects the culture, as employees might become increasingly frustrated and perceived departmental borders could substantiate – the open and honest culture resembling a family and is highly valued could disappear. Additionally, the management of tasks could become even more complex. Project management as a perceived “garbage can” of information is further negatively influenced.

The unclarity and complexity of information acquisition and information flood is an overarching issue, focusing on how to share the relevant information with all of the concerned colleagues without overloading each person.

### 5.2 Contribution of CCO to structure

This section is aimed the discussion of the research question “*How can the CCO approach contribute to shaping the organizational structure?*”. It reviews the significance of the network in the problem identification and its purpose in the context of CCO to structure. Taking the research to a more abstract level, this section also evaluates the contribution of the CCO approach to the shaping of structure.

The network, as displayed in appendix 4, is crucial for the identification of problem areas in the case organization. To analyse the contributions of CCO to the organizational structure,

it is necessary to find starting points of application where the CCO approach could support the shaping of the structure.

Communication shapes the organizational structure and in the presented theory, the four flows create a social structure through interaction (Browning et al., 2000; Littlejohn & Foss, 2009; Schoeneborn & Vasquez, 2017). This was analyzed in section 4.1, which characterized the case company in terms of the Four Flows model. The analysis of communication by the Four Flows model lead to problem areas, which depict the starting point for the influence on structure: To achieve organizational structure that creates long-term competitive advantage through sustainable alignment of activities, the addressing of problem areas is important. When communication is improved, this will influence the structure according to the CCO approach, as communication creates, enables and sustains organization and impacts interaction (F. Cooren et al., 2011), which is in congruence with structure. This also means specific recommendations concerning the structure are not viable following the CCO approach, but changes in the communication can shape the structure towards an improvement, aimed at the identified problem areas.

The communicational problem areas 'Information acquisition: Source of information' and 'Flood of information' can be tackled by the following approaches. The improvement ideas are based on the communicational problems and the characteristics of the Four Flows model subtopics and they can hypothetically influence the organizational structure of the case company. The improvement proposals will be discussed and linked to the theory of Ahmady et al. (2016), Ranson et al. (1980) and Dow (1988).

The first proposed improvement targets the company-wide planning. This aims at task coordination with central task management, including transparent membership and progress tracking, for instance via the ERP system. Schedule planning and notifications for certain processes should be possible. The planning should be intuitively accessible and also individually usable with self-organization as well as self-planning. This improvement does not aim at full completeness, it should rather guide employees towards integrity, clearness and transparency. The biggest advantage of this would certainly be the restriction of "relay races" for information acquisition – knowing whom to ask for certain information or directly finding the information through documentation creates easement and sustainably improves both problem areas. This comes at a cost of maintenance of the documentation and task management, which requires time. Further, everyone needs to be willing to put effort into the documentation to actually benefit in the long-term.

But what can this contribute to structure? This improvement approach can directly contribute to the three dimensions of organizational structure (Ahmady et al., 2016): The improvement of documentation and task management influences the information management structure (Principle 1). When the tasks are better coordinated and transparently distributed over employees, information can also be acquired and shared in a more effective manner. As this action can be introduced by management and is displayed in roles and procedures, it can be viewed as part of the framework or configurational perspective (Dow, 1988; Ranson et al., 1980) as introduced in section 2.2. The second dimension, referring to departmental division and organizational units, is also appealed by the improvement approach, as the inter-divisional borders become less obstructive – if the employees know who to approach and who is working on a task across the borders of department, it develops the structure in an informal way through the communication network. Additionally, the third dimension, which aims at the inclusion of coordination systems and the effective alignment of the whole organization, is also impacted through the introduction of

company-wide planning. Task coordination can transform the organizational alignment, contributing to the interaction or coactivational perspective as introduced by Dow (1988) and Ranson et al. (1980).

The second proposal for an improvement is aimed at the creation of a company-wide overview. This includes the introduction of new employees into the overall company with more internal contact points and a complete overview of the product portfolio from the point of view of the technical, but also sales department. Additionally, regular updates for employees should gain in importance, addressing issues like current developments, goal and strategy sharing and also feedback concerning job positions and reaching of goals and strategy objectives. Although the culture of the company is consistently described as open, honest and "feeling like family", the interrelation in the company has to be kept alive during growth and further developments. Overall objectives and ideas which are cocreated and shared with employees help to reinforce the cultural values. This can sustainably improve the consistency of processes and supports employees, as it contributes to the effectiveness and efficiency of interdepartmental communication. Again, this comes at the cost of effort, which needs to be actively supported by employees.

This communicational change can again shape the structure in a sustainable way and constitutes the three dimensions of structure. As an influence on the first dimension of structure – determination of relationships and information management, the improvement proposal contributes the company-wide overview. Especially the focus on interrelations, cocreation of values, objectives and ideas and the feedback possibilities build long-term relationships. This is connected to the interaction or coactivational perspective, because the mentioned improvements indirectly influence the structure. The clarification of long-term goals and overview about product portfolios unify the whole organization and shapes the structure towards loosely bound departments, finding themselves in continuous and consistent coordination – the second dimension of organizational structure, which is referring to departmental division, is therefore shaped as well. Same as the first dimension, this is constituted indirectly as well, because the changes in the communication processes influence the structural properties. Lastly, the third dimension mentions the inclusion of coordination systems and the effective alignment of the whole organization. As already said, the clarification of long-term goals and overviews can unify the organization towards one aligned "method by which organizational activities are divided, organized and coordinated" (Ahmady et al., 2016, p. 456). Again, this is impacting the structure indirectly and through the members and their interactions and therefore takes up the interaction or coactivational perspective.

Both improvement approaches tackle the problem areas at the basis and target the subtopics of the Four Flow theory. Although the improvement proposals require documentation and aim at steady, consistent processes, they do not necessarily restrict the most important topic in the company: Flexibility. Especially in an ever-changing environment and with growing capacities, a certain structure needs to be established to effectively develop new competencies and deal with the complex environment. Reacting flexibly on changes and problems should not be mixed-up with inconsistent, disarranged processes. Grounding the development of structure on the established communication flows focuses on keeping the flexibility which enables employees to effectively deal with changes and problems.

So, what does this mean in the context of the research question? How can the CCO approach contribute to the shaping of organizational structure?

As F. Cooren et al. (2011) said, attention should be paid to what “happens in and through communication” (p. 5). The main assumption of the CCO approach views communication as the driving force that creates, generates and also sustains the practices of an organization (Schoeneborn et al., 2018), which can be found in the identification of problem areas based on the CCO approach, that begins precisely at the communication processes instead of analysing the whole organization. As Littlejohn & Foss (2009) claim, the constitutive nature of communication means that it builds the basis for social entities, meaning communication builds the basis for structure. This is also reflected in the results, as they show that the improvement of the underlying communicational problems can help to sustainably improve the structure as well. The term ‘social entity’ fits particularly well to the interaction or coactivational perspective as mentioned by Ranson et al. (1980) and Dow (1988), introducing structure as influenced by members through relationships, problems and solutions and therefore building a network of communication that impacts the structure. In the earlier analysis of contributions of the Four Flows model and the resultant network, it became clear that the majority of influences the improvement approaches are building is coherent with the aforementioned coactivational or interaction perspective. This is further strengthening the bond between communication and its influence on structure: The interaction between members creates social structure (Browning, Green, Sitkin & Obstfeld, 2000; Littlejohn & Foss, 2009; Schoeneborn & Vasquez, 2017). The results fit to this assumption, since the impact of communicational processes – named interaction – on the structure is of constitutive nature.

To conclude the overall research question, it can be said that the CCO approach forms a different perspective concerning problem identification in relation to structure: The focus on communication processes constituting the structure guides the analysis of problems and gives starting points for improvements that sustainably influence the structure. Especially the Four Flows theory supports the identification and analysis of problems in the way that it leads to the underlying reasons of the problem areas. This contributes a lot to the structure shaping, because it enables the well-aligned and fitting improvement of communicational problems, that in turn influences the structure.

## 6. IMPLICATIONS & LIMITATIONS

### 6.1 Theoretical Implications

The research draws on the recent interest in the CCO approach, which especially focuses on the wide-ranging implications of communication research. As Christensen and Cornelissen (2010) propose, the “structural dimensions of corporate communication” (p. 404) were considered a research gap so far, posing the need for further research and presenting the connection between communication and structure. The applicability of the CCO approach on the issue of structuration contributes to the new paths of CCO, as it focuses on the “re-invention of the study of organizational culture” (F. Cooren et al., 2011, p. 11).

Moreover, the claims of CCO scholarship have so far mostly focused on covering theoretical ground. This entails that the scope and possibility of application engages in case studies concerning the constitution of loose social phenomena (see (Browning et al., 2000; Dobusch & Schoeneborn, 2015; McPhee & Iverson, 2009), but rather excludes the specific application on organizational characteristics like structure.

The case study addresses this research gap and analyses the contribution of the CCO approach to organizational structure. It proposes a method which draws on an established and widely researched theoretical model. This forms a verifiable line

between the analysis of problem areas and the proposed improvements for structure.

### 6.2 Practical Implications

The research implies a new perspective and might encourage companies to strike a new path concerning communication and its constitutive nature for the organization. The CCO approach can adapt organizational decision making and begins precisely at the key driver of every organization: communication. Therefore, the application of the ‘communication-constitutes-organization’ approach on structure can lead to added value in terms of organizational capability, as it makes sure that the communication processes influence the structure. A well-aligned structure which reinforces the established communication can build up to added value. For the case company, especially the analysis of problem areas and the proposal of improvements might help to create awareness for the impact every interaction has and supports the development of a structure which facilitates the established communication processes and interactions.

### 6.3 Limitations & Further Research

The research design and realization resulted in possible limitations which might restrict the transmission and influence the interpretation and discussion.

Based on the scope of the research, not every reciprocal interrelation and effect of factors could be addressed, which limits the interpretation to the most important factors as perceived by the interviews. Further, the list of subtopics relating to the Four Flows is not exclusive due to the scope of the research – a more detailed fragmentation could have led to more differentiated findings. As the research is of qualitative nature and aimed at the identification and improvement of problem areas at the case company and the general applicability of the CCO approach on structure, the transferability is not guaranteed. The proposed structural improvements focus on a loose structure that is built and influenced by the communicational interactions, which facilitates long-lasting and effective change.

In the case of a more fixed structure, research should focus on if the structural improvements can be implemented through changes in the communication processes as well. Further research could also aim at the quantitative confirmation of problem areas with a larger number of interviews and additional analysis of written documentation.

## 7. CONCLUSION

By analyzing the case company, this paper has shown how the communicative structure can be shaped based on the CCO approach. The CCO approach builds a new path for aligning the structural characteristics with underlying communication processes and interactions.

Using the Four Flows model of McPhee and Zaug (2000), several influence factors were identified and a network was constructed, leading up to the problem areas ‘Information acquisition: Source of information’ and ‘Flood of information’, as addressed in the first research question. Sharing the relevant information with the concerned employees without placing too much content on each individual is the overall problem of the case organization as identified through the analysis and coding of the interviews.

With company-wide planning and overview aiming at central task management, progress tracking, internal contact points and a more effective update mechanism about the product portfolio, strategic and goal objectives, several approaches to solving the identified problem were proposed. To sum up, the applicability and scope of the CCO on organizations and their characteristics can potentially contribute effective and long-term advantage to companies.

## 8. APPENDIX

### 8.1 Appendix 1: Guideline for interviews

As stated before, the questions were used as a guideline while the conversations were open.

#### 8.1.1 General questions/topics for introduction and clarification

1. How would you define communication in the workplace? (general understanding of communication)
2. How would you define structure in the workplace? (general understanding of structure)
3. What is your role in the organization? (Job, department)
4. When did you start working here? (Experience level)
5. For what tasks or processes are you responsible for? (Responsibility)
6. Could you describe a typical day with its most likely processes? (communicational flows)
  - 6.1. *What form of communication is most usual? (e.g. mail, conversation, chatroom service)*
  - 6.2. *What form of communication is most important in terms of what helps you to make the most progress?*
  - 6.3. *What form of communication would you describe as most difficult?*
7. What is the main intention of the communication you participate in during a workday? (aim, intention, tasks of communication)
8. Which of the three communication tools do you use most and why?
9. Considering the communication now, what would you like to improve? (weak points in communication)

#### 8.1.2 Questions referring to the Four Flow model (McPhee and Zaig, 2000)

(Note: The questions are not sorted considering the four flows, because they are inter-connected and certain topics would be highlighted several times then. The topic and subtopic are listed shortly after each question. Membership negotiation = MN; organizational self-structuring = OSS; Activity coordination = AC; institutional positioning = IP)

10. How would you characterise the company? (MN & IP, commitment & identification)
11. Generally, what would you say is most important about leadership? (MN, leadership)
12. What would you say is a specific focus of the management? (OSS, legitimacy of authority & control)
13. How would you describe the relationship between the employees? (MN, partial inclusion)
  - 13.1. *Do you think the relationship between employees differs concerning age, experience level, employee's role, etc.? (MN, partial inclusion)*
14. How are new employees introduced to the practices? (MN, establishing a routine)
15. When you started here, how were you introduced to work processes? (MN, establishing a routine)
16. If your task would be to support a new employee in getting used to the work processes here, what would you explain to him? (MN, establishing a routine)
17. [Referring to question 6] Would you describe your daily work as a routine? (OSS, activity patterns)
18. How do you coordinate the tasks, also via departments? (AC, activity coordination)
19. How much of your work is structured by others? (OSS, activity patterns)
  - 19.1. *By whom is it structured?*
  - 19.2. *Do you have flexibility in the execution of the tasks?*
  - 19.3. *How are your tasks communicated to you?*
20. What would you like to improve in activity coordination and teamwork? (AC; activity coordination)
21. What would be typical problems related to your routine processes and how are they solved? (AC; problem solving)
22. You are working in a flexible work environment with rather high uncertainty, do you feel supported with the decisions and tasks that are your responsibility? Why? (MN, leadership)
23. Do you get feedback for the tasks you accomplish? (OSS & IP, trust relationships, legitimacy of authority & control)
24. How do you implement the feedback? (OSS & IP, trust relationships, legitimacy of authority & control)
  - 24.1. *If no feedback – do you think feedback would lead to better processes?*
25. How are employees integrated in decision making and process changes? (MN, commitment & identification)
26. Going from question 25: [The company regularly has a management meeting, as well as sales and administration meeting, in which the employees partly participate]
  - In which organizational meetings do you participate? (MN, leadership, commitment & identification)
    - 26.1. *What input can you and the other participants contribute?*
    - 26.2. *Do you read through the protocols that are published?*
    - 26.3. *How are discussed things implemented?*
27. How are potential changes (in processes etc.) communicated? (OSS, development of trust relationships)
28. How are potential changes (in processes etc.) supported? (OSS, development of trust relationships)

## 8.2 Appendix 2: Explanation of development of subtopics based on L. L. Putnam and Nicotera (2009)

Operating Flow	Explanation in text	Definition according to Putnam & Nicotera (2009)	Resulting subtopics	Definition of subtopics
Membership negotiation	Relationship between members and the organization, different states of members, recruitment and socialization of new members, incorporation into organization, identification and identity	„focuses on the relationship of members to the organization. This relationship takes many forms – <i>partial inclusion, commitment, identification, leadership</i> ” – (p.10)	Commitment & identification	Relationship of members to organization, organizational culture, shared values
			Establishing a routine	Introduction and induction of members in work processes, norms and routines
			Leadership	Management style, including decision making, exercising of authority
			Partial inclusion	Separation or differences in membership
Organizational self-structuring	Aims to build a system that supports the organization in its survival, includes connections, routines, and social systems without aiming at specific work processes; targets the control and management of organization according to strategy	„The second flow refers to the enduring quality of reflexive design and control. [...] [Such structures] occur almost any time members <i>retain activity patterns, develop trust relationships, coordinate work sites, legitimate authority, or gain control</i> ” – (p.10)	Activity patterns	Recurring patterns of activity, self-commissioned or controlled through organizational rules
			Development of trust relationships	Building of a sense of reliability, reinforcing and improving relationships and interactions
			Legitimacy of authority & control	Forming boundaries and feedback mechanisms, internally recognized and understood by members
Activity coordination	In contrast to organizational self-structuring directly focused on the operating processes of work, each member follows activity streams which are mostly pursued in collaboration and coordination with other members; dependency of the organization on flexible problem-solving	„Activity coordination focuses directly on <i>connecting and shaping work processes</i> . In this flow, organizational members <i>interactively adapt to preordained arrangements, overcome the hardships of joint work, and attempt to work out solutions to problems</i> .” – (p.10-11)	Problem solving	Problem solving mechanisms and reaction of members to problematic situations
			Task coordination	Coordination of teams, department wise and cross-divisional; focused on reciprocal team coordination
Institutional positioning	Emphasizes communication outside of the organization, members acting on transboundary roles participate in institutional communication, determining the image and identification of the organization towards environment	„The fourth flow, institutional positioning, focuses on organizations and their <i>societal interactions at the macro level with suppliers, customers, competitors</i> . As an organization interacts with other agencies, it establishes itself as legitimate by <i>developing an image of a viable relational partner</i> ”- (p.11)	Commitment & identification	(same as in membership negotiation); relates here to the image communicated to the environment, fed by internal culture
			Communication to external parties	Exchange with customers, suppliers, etc.; relation to stakeholders

### 8.3 Appendix 3: Full table of codes, including quantity of application, explanation and example quotations

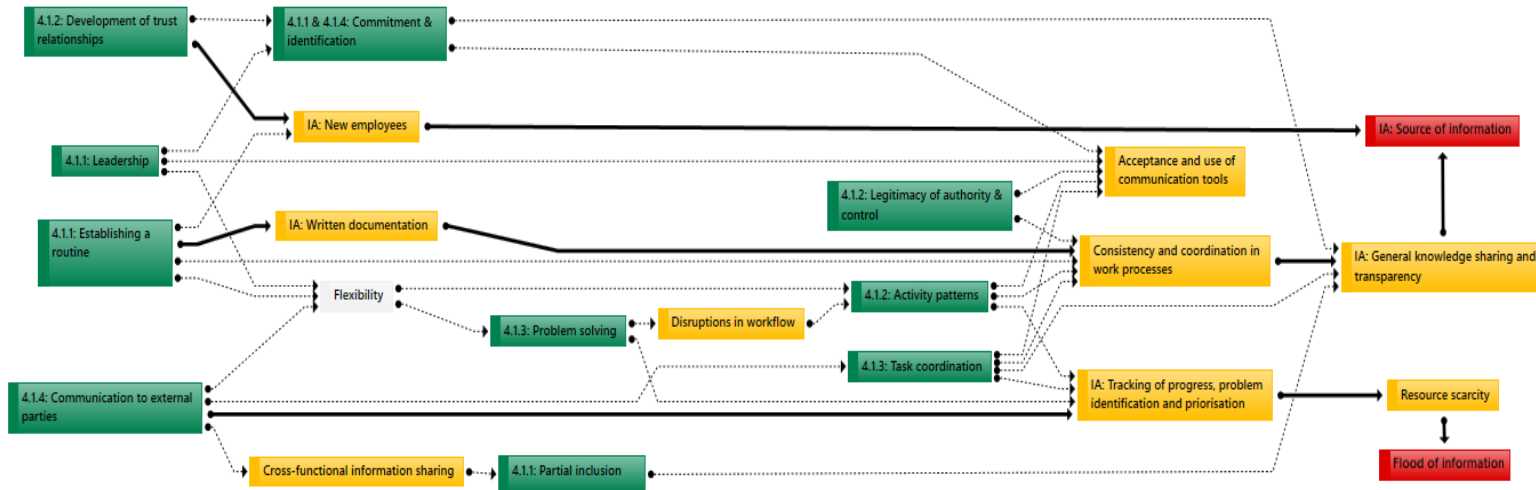
Group	Code	# appl.	Explanation	Example quotation
Membership negotiation	Commitment & identification	43	Relationships of members to organization, organisational culture, shared values	"Very casual. We've got very flat hierarchies; everything is very informal."
	Establishing a routine	51	Introduction and induction of members in work processes, norms and routines	"Starting out was a big of a jump in the deep end. Doesn't mean that you're helpless, you can still ask everyone."
	Leadership	28	Management style, including decision making and exercising of authority	"The competence. Intuition and empathy towards employees and a comprehensive knowledge."
	Partial inclusion	25	Separation or differences in membership	"Everyone should have an overview and really understand how complex the products are."
Organizational self-structuring	Activity patterns	64	Recurring patterns of activity, self-commissioned or controlled through organisational rules	"Structuring is not really possible [...]. You just add it to your list."
	Development of trust relationships	27	Building a sense of reliability and confidence, reinforcing and improving relationships and interactions	"Not every step is monitored, everyone has to carry responsibility and act self-sufficient."
	Legitimacy of authority and control	53	Forming boundaries and feedback mechanisms, internally recognized and understood by members	"You have to show that you're open for feedback. It's about the willingness."
Activity coordination	Problem solving	23	Problem solving mechanisms and reaction of members to problematic situations	"... also solving problems, that is arranged very flexibly. If you ask for help, you'll get help in every situation."
	Task coordination	62	Coordination of teams, department wise and cross-divisional; focused on reciprocal team coordination	"Generally, there is a manager for every department who coordinates tasks, but more often that becomes independent."
Institutional positioning	Commitment & identification	43	(same as in membership negotiation); relates here to the image communicated to the environment, fed by internal culture	(see membership negotiation)
	Communication to external parties	22	Exchange with customers, suppliers, etc.; relation to stakeholders	"Currently, the customer asks - and then we'll start asking, what the plan even is. We cannot act proactively."
Weaknesses of communication	IA*: General knowledge sharing and transparency	35	General information acquisition and knowledge sharing between employees	"Software changes, new customers, complicated support cases - The meetings are a forum for information exchange."
	IA: New employees	13	Information acquisition for new employees	"New employees don't necessarily know what is meant, and that is very complicated to learn and takes up to one year."

Weaknesses of communication	IA: Tracking of process, problem identification, prioritization	19	Sharing of progress, e.g. while working on projects; sharing and updating of problems and priorities	"Not sustainable means in my opinion I cannot control if the tasks are worked on."
	IA: Written documentation	22	Focus on written knowledge and information sharing	"It is annoying, when things are not documented correctly. If it was, I wouldn't have to spend extra time on to get the information."
	IA: Source of information	37	Knowledge about who to approach for certain information	"You have to be persistent to find the right person, knowing what you want to know."
	Disruptions in workflow	21	Interruption of processes due to questions/inserted tasks/problems	"The risk is that you might lose something, if you're constantly disturbed in your processes. Working efficiently is not possible."
	Flood of information	22	Mass of requests, tasks; keeping the overview	"The amount of information takes a lot of time to process - one task results in many tasks."
	Resource scarcity	27	Shortage of time and labour force	"Eventually, it fails due to the time. There are not enough people available."
	Acceptance/use of communication tools	33	Willingness to use variety of communication tools; individual preferences in usage	"Some use and implement the tools - some do not. Depends on if they want to or not. There is no clear working order concerning that."
	Flexibility	31	Complexity and variability of processes	"You cannot press everything into a certain shape. Most of the time, the customer himself doesn't even know what he wants, and everyone needs to act flexibly around that."
	Cross-functional information sharing	32	Inter-departmental information sharing	"It is a very heterogenous group. A strong IT affinity in software development, but also sales and administration and hardware departments. Demands towards information are different."
	Consistency & coordination in work processes	35	Alignment of work processes and tasks	"Every department, every person has a different perspective and thinks differently."

\*IA: Information acquisition (originally one code, separated into different problem areas)

## 8.4 Appendix 4: Network of Four Flows

The green colored nodes are subtopics of the Four Flows. The yellow colored nodes represent the influential codes as identified from the interview analysis. These are grounded in the opinions and perceptions of the interviewees, who mentioned the weaknesses of communication and the causes of those weaknesses. The faint node is a mediating code and the red nodes are overarching code groups. The relationships between the codes are multiplex, meaning each node can have multiple relationships.



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