

The art of new Collaboration: Three Secrets

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Abstract: Current trends like Digital Transformation and New Work suffer from an essential weakness: they fail to understand and take seriously that, in order to be successful in the world of VUCA, they require what we call “New Collaboration”. In this sense, we speak of the secrets of New Collaboration that we see as a way of working together and that can be summarised by the following three statements: 1) New Collaboration requires and is based on the sharing of *tacit* knowledge. Sharing tacit knowledge requires: 2) suitable structures, leadership and competences; 3) dedicated collaborative interactions (methods). Understanding and taking New Collaboration seriously would allow Digital Transformation and New Work to better exploit their potential for improving business results in a world of volatility, uncertainty, complexity and ambiguity (VUCA). To contribute to this, our paper will first present an understanding of the essence of collaboration that we call *knowledge-based* and *community-oriented* because we are convinced that what matters today in collaboration is the process of knowledge sharing and the resulting construction of shared knowledge. Then we will propose an architecture of what we call a New Collaboration System - which includes people, processes and technology – with *structures* like communities of practice, *leadership* methods such as facilitative leadership and *competences* like collaborative skills. Last but not least, we will outline some methods for and approaches to collaborative interactions, such as our Presence Model of Knowledge Sharing, our Interaction Continuum Model and our D-3 Model of online interaction.

Keywords: VUCA, knowledge sharing, collaboration, new work, digital transformation, collaborative patterns

1. Introduction

Although knowledge sharing and collaboration are recognised as essential practices for success in the world of VUCA with its increasingly networked business world and ever more geographically dispersed teams (Schmeil 2012), both concepts (as well as their relationship) are not well understood: it is not surprising then, if collaboration is not working (Lavoy 2013, Roten et al. 2016). Thus today, in the context of New Work and Digital Transformation, we use perhaps only 10% of the potential of collaboration. By clarifying what *collaboration* means today and how it is connected with knowledge sharing, our contribution aims to help unleash the full potential of *new collaboration* so as to support businesses with being successful in the world of VUCA.

2. Two types of collaboration

The terms collaboration and cooperation are often used synonymously but experience shows that they are not always synonyms; in recent times, the term “collaboration” has begun to be used for a *new practice* that is quite different from cooperation and it is being used in this way more and more. Some people have noticed this development but when they tried to explain the difference between cooperation and the new practice of collaboration (sometimes called “social collaboration”), in most cases their efforts did not bring more clarity. For example, when the difference is explained through the degree of *alignment* in working together (“*Collaboration is very similar to, but more closely aligned than, cooperation*”, Wikipedia, 2017), this just introduces the new question of what “*closely aligned*” means. If the difference remains unclear, then our understanding of collaboration also remains unclear. Another enlightening example of this lack of clarity comes from Buxer & Ovcak (2017) who define Social Collaboration (SC) as “*The use of modern technologies for supporting new ways of working together and enabling employees to cope with current challenges*”. In this definition, we see two problems: first, the focus is put on using technologies (social media and other); secondly, new ways of working together are mentioned only in second place, thus suggesting that they are well known. They are not! We know that by using social media we work together differently, but this is only a very superficial kind of knowledge. What are the differences? A welcome exception among the multitude of superficial definitions was recently published in a German project management journal; collaboration is recognised there as a “*paradigm shift in working together*” because it is a “*synchronous work on one subject*”, and as such is significantly different from cooperation (Ehmer 2017). So, we observe a new practice of collaboration and intuitively use a new concept of

collaboration for designating it, but we do not understand what is new in this practice and concept and do not even remark on the *paradigm shift* which is tacitly taking place. As a first step on the way to better understanding, we suggest distinguishing between two types of collaboration, two distinct cases and introducing two auxiliary terms for them:

- Collaboration as a synonym of cooperation or with small differences = *collaboration-1*
- Collaboration as fundamentally different from cooperation = *collaboration-2*

This second kind of collaboration, that we call *collaboration-2* or “*new collaboration*”, is a new way of working together which, although unnoticed, has accompanied the rise of ICT since the beginning and today is *tacitly* and *unconsciously* emerging more and more, particularly in businesses which are implementing digital transformation and new work as approaches for tackling the new challenges of an increasingly volatile, uncertain, complex and ambiguous world (VUCA). Why is it *unnoticed*? Why is it emerging *tacitly* and *unconsciously*? First, because this new way of working together requires a big *change of the organisational culture*, perhaps similar to what Laloux terms “reinventing organizations” (Laloux 2014). But organisations seem reluctant to adopt such a change. Secondly, because we were and still are blinded by the glamour of new technologies and focus too much on this, thereby forgetting that a powerful tool requires a suitable ability to deal with it, like a violin which would be of no value in the hand of someone who is not musically educated and trained to play it. We do not take seriously that new forms of collaboration require new collaborative *abilities* and we do not understand what the essence and the characteristics of these new abilities are. As a consequence, without noticing it, we are becoming “collaborational ignorants”: not educated in the art of new collaboration and not trained in the ability to apply this competence to new ICT tools. New collaborative abilities are the skills to do New Collaboration which is *a new way* of efficiently and effectively *working together* enabled by modern digital technologies (then it is called E-Collaboration or Digital Collaboration) and new work organisation. Which *new way*?

3. New collaboration: Knowledge-based and community-oriented

Our experience with the practice of New Collaboration suggests that *knowledge processes* and a *sense of community* (McMillan & Chavis 1986) play an essential, relevant role in this. In fact, research has demonstrated that knowledge processes serve as the basis for any form of working together (Endress & Wehner 1996; Vollmer & Wehner 2007), that knowledge should be considered one of the key elements of E-Collaboration (Kock 2005) and that the construction of shared knowledge constitutes one of the key processes of collaboration (Dillenbourg & Fischer 2007). Unfortunately, we do not see knowledge or people or community mentioned in most definitions of collaboration and we are lacking models of collaboration with adequate emphasis on knowledge sharing.

The distinction that we make between “cooperation” (collaboration-1) and “new collaboration” (collaboration-2) focuses on the relationship between *people* and *work*. Cooperative work is accomplished by a *division of labour* among participants in which the task is split into pieces, each person works *individually* and is responsible for one piece of work (Roschelle & Teasley 1995:70) and everyone must be able to share intentions (Tomasello 2009). In new collaboration, instead, there is no such division of labour, the task remains a unit, everyone is part of a *community* and responsible for the whole and shared intentionality is necessary, but not sufficient: we also need the *new ability* to share (tacit) knowledge.

In order to clarify this view of a *knowledge-based and community-oriented collaboration*, our approach is to focus on the *process* of collaboration and ask for example: how does new collaboration actually proceed? This approach can be found in the seminal work by Roschelle & Teasley (1995) that investigates collaborative problem solving. There we find three complementary characterisations of collaboration pointing to 4 essential aspects: “single task”, “coordination”, “shared construction” and “mutual engagement” (Roschelle & Teasley 1995:70):

“Collaboration is said to have occurred when more than one person works on a single task”

“Collaboration is a coordinated ... activity that is the result of a continued attempt to construct and maintain a shared conception of a problem” and

Collaboration is “the mutual engagement of participants in a coordinated effort to solve the problem together”.

The notion of a “*shared conception of the problem*” is central here. Specifically, Roschelle & Teasley claim that collaboration consists of two concurrent activities: solving the problem together and building what they call a “*Joint Problem Space*” (Roschelle & Teasley 1995:75), a shared knowledge structure that supports the problem-solving activity. This means that collaboration does not just happen because individuals interact: individuals must make “*a conscious, continued effort ... with respect to shared knowledge.*” (Roschelle & Teasley 1995: 94). And this is not easy to do, especially because most of the knowledge involved in this process is not explicit but *tacit knowledge*!



Figure 1: Left: Cooperation. Task is split, responsibility for one portion, shared intentionality. Right: New Collaboration. Task remains a unit, responsibility for the whole, shared knowledge

In summary, we suggest defining new collaboration with a focus on knowledge sharing and a sense of community as follows (adapted from Bettoni et. al. 2016, Bettoni 2017):

New Collaboration is a coordinated activity between persons who interact (online or in presence) for working together at the same, single task and who, concurrently, are also mutually engaged as a community in a conscious, continuous effort to construct and maintain an underlying shared knowledge structure as a basis for accomplishing their task.

Sharing knowledge in this case principally involves the sharing of *tacit knowledge*, and this is a new competence that we still do not understand completely. But many people are not aware of the existence and importance of tacit knowledge. To become aware of the fact that we do not have a sufficiently deep and systematic understanding of how to share tacit knowledge is a necessary step here. And we need to do this urgently because we need to improve our ability to share tacit knowledge. In fact, human culture has two characteristics which distinguish it from other types of culture: cumulative artefacts and social institutions (Tomasello 2009). The underlying psychological processes that make these two unique forms of cooperation possible may be called “shared intentionality”:

Shared intentionality involves, most basically, the ability to create with others joint intentions and joint commitments in cooperative endeavours. These joint intentions and commitments are structured by processes of joint attention and mutual knowledge. (Tomasello 2009)

Shared intentionality enabled early hominids to evolve and become what we are today, *homo sapiens*. But in a world of VUCA, this culture is no longer enough as a foundation: to enable the new forms of collaboration that we need to survive in a VUCA world, we should also develop the ability to *share tacit knowledge*: a quantum leap! Knowledge sharing is a complex and *inherently fragile* process (Roschelle & Teasley 1995:94) during which the participants need to possess specific competences that they will apply to overcome many different kinds of difficulties. Analysis of this process shows that *negotiation of meaning* (Wenger 1998) is the most important resource in dealing with these difficulties. With its many different forms of interaction (conversation, questions and answers, brainstorming, repairs, storytelling, messy talk, etc.), negotiation of meaning enables us to reach a mutual understanding, to recognise divergent understandings or misunderstandings and to negotiate rectification of the underlying shared knowledge structure with a view to improving knowledge intensive joint work. In his investigation of this issue, Wenger (1998, p. 53) defines negotiation of meaning as “*the process by*

which we experience the world and our engagement in it as meaningful.” A basic aspect of our engagement is that we thrive on experiencing our actions and our practice as meaningful; we do not simply want to get something done (a report written, an event organised, a request answered, etc.): what counts in what we do is always more than the result, it is the experience of meaning connected with that result. In the end, the meaning we produce matters even more than the product or service we deliver. The kind of meaning involved here is an experience of everyday life, the experience that what we did, are doing or plan to do “makes sense” to us. Wenger proposes a model which distinguishes two constituent processes: participation (active involvement in social experiences) and reification (producing objects which express our experiences). They cannot be considered in isolation, they come as a pair. They form a unity in their duality (Wenger 1998, p. 62).

4. Architecture of new collaboration

In any organisation or entity, the organisational structure (people) and collaboration processes (task, knowledge and social processes) have a great influence in making collaboration successful and should be designed accordingly. As a consequence, it is not enough to focus primarily on collaboration technologies; we need to take it seriously that “people” and “processes” also matter and make sure that our design puts all three elements in the right balance. To do this, we suggested elsewhere (Bettoni et al. 2016) introducing the notion of a “collaboration system” which is composed of people, processes and technology (acronym: ppt) connected to form one unit. This PPT model has already been successfully applied to Knowledge Management elsewhere (Edwards 2009, 2011).

As regards the first element, *people*, we focus on three main elements – subordination, leadership and competence. For a collaboration system, what matters is that the system should rely on an *informal subordination* i.e. on participation of all members of the group or unit in decision-making, like in a social network. The leadership style, the second essential aspect, should be *facilitative* rather than impositional, indicating a style which promotes choice, error culture, coaching and personal development. Finally, new collaboration requires suitable collaborative skills, for example the set of capabilities collected in the Knowledge Work Capabilities Framework, which “*can be considered as a foundation for performing collaborative knowledge work*” (Berg 2015, 130).

As regards the second element, *processes*, the design of a collaboration system should support those methods of interaction among employees which implement the social network required by the people element (see above) and which, at the same time, are suitable for the knowledge management task of building a shared knowledge structure. One method which satisfies these conditions is the *Community of Practice* method which defines a very specific type of social structure composed of three fundamental elements: domain, community and practice (Wenger et al. 2002: 27ff and 41 ff). In building a SKS, the community of practice will have to perform not only the sharing of knowledge but also other related knowledge processes (like acquiring, developing, making transparent, preserving and using knowledge).

Finally, as regards *technology*, the design of the collaboration systems should take into consideration the needs implied by the design of the previous two elements, people and processes. The technology should be an enabler for the actions that can satisfy those needs. When the group collaborates in person, then enablers of innovation, knowledge creation and knowledge sharing can be found in physical spaces that are designed following the principles of “*enabling spaces*” (Peschl & Fundneider 2012). When the group collaborates online, then the enablers are provided by Web 2.0 or 3D technology, like for example a virtual office on a Moodle platform or on the QUBE 3D system (Bettoni & Obeng 2016; Bettoni et al. 2017). Regarding the needs and objectives of this physical & virtual office, consider that just as clubs have a clubhouse or other sorts of meeting places (for example the “Mermaid Tavern” in London in the Elizabethan era), likewise a group of knowledge workers need a fixed and well-organised place which reifies its ties as a group and which provides facilities for supporting collaboration both in presence and online, so that the collaboration flow is not interrupted when a member of the group is absent. This shared space is a fundamental condition for enabling the construction of a shared knowledge structure. Like in the Japanese concept of “*ba*”, this group office “... *can be thought of as a shared space for emerging relationships*” (Nonaka & Konno, 1998). The architecture proposed here suggests that, in order to construct a system for new collaboration, you have to design a tree with three branches: a *people* branch, a *process* branch and a *technology* branch. The people branch is divided into three further sub-branches: *subordination*, *leadership* and *competence*. At the end of these sub-branches, there are three *leaves*: Social Network, Facilitative Leadership and Collaborative Skills. The three leaves found at the end of the other two

main sub-branches are: Community of Practice, KM and Office (physical & virtual). Together, these six leaves are what you have to design in order to implement the core elements of a system for new collaboration.

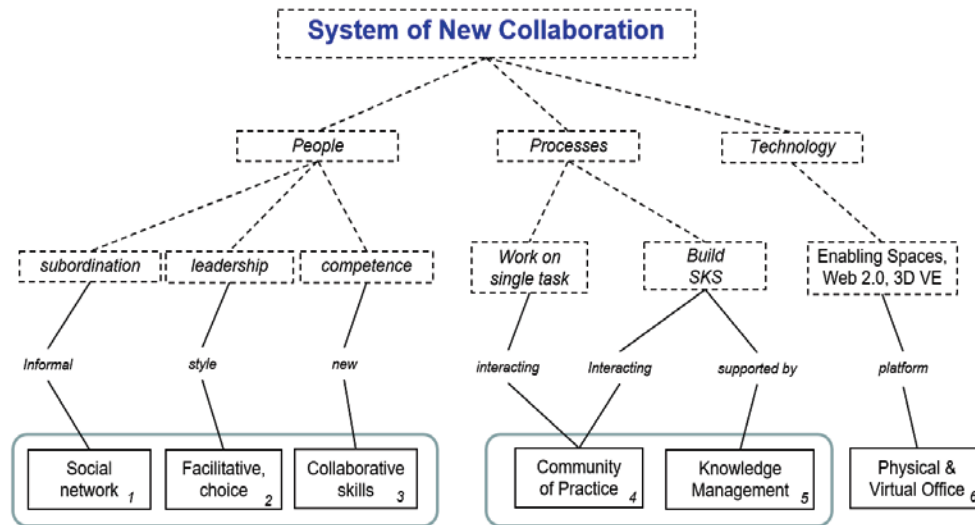


Figure 2: Architecture of a knowledge-based system of new collaboration (adapted from: Bettoni et al. 2016)

5. Sharing tacit knowledge: Interaction methods

The sharing of tacit knowledge is not a transfer from one sender to one receiver, as if knowledge were a parcel. The process can be better understood as *constrained construction*: the sender provides constraints and the receiver tries to reconstruct the knowledge owned by the sender by optimising his/her construction with respect to its *viability* (Bettoni 2018) in the presence of the constraints given by the sender. It is a highly recursive process in which constraints have a higher chance of not being violated when the participants involved in the sharing do something together (Karabsheh et al. 2016) and coordinate their language and activity (Roschelle & Teasley 1995:94).

For such an *interactive knowledge sharing process* to be successful, we have proposed elsewhere (Bettoni et al. 2017) that three essential elements need to be integrated: cognitive presence, social presence and leading presence (see Fig. 3). *Cognitive presence* is defined as the extent to which participants of the collaboration succeed in constructing and sharing knowledge (meaning) through sustained interaction and reflection. *Social presence* is defined as the extent to which participants of the collaboration succeed in projecting their personal characteristics onto the group (team, community), thereby presenting themselves to the other participants as “real people”. Finally, *leading presence* is defined as the design, facilitation and support of cognitive and social presence (of the related processes) for achieving personally meaningful and organisationally worthwhile collaborative outcomes. Realising and integrating these three kinds of presence requires eight groups of skills:

- Co-constructing knowledge: a) shared language, b) shared content / storage, c) co-planning, d) co-solving, e) co-writing.
- Negotiating meaning: a) reification, b) participation.
- Expressing emotions: a) closeness, b) humour, c) self-disclosure.
- Open communication: a) mutual awareness, b) recognition.
- Group cohesion: a) empathy, b) participation.
- Managing collaboration: coordinating, organising, designing, planning and assessing the collaboration.
- Supporting cognitive and social presence: a) giving feedback, b) fostering reflection, c) balancing cognitive and social presence.
- Facilitating interaction.

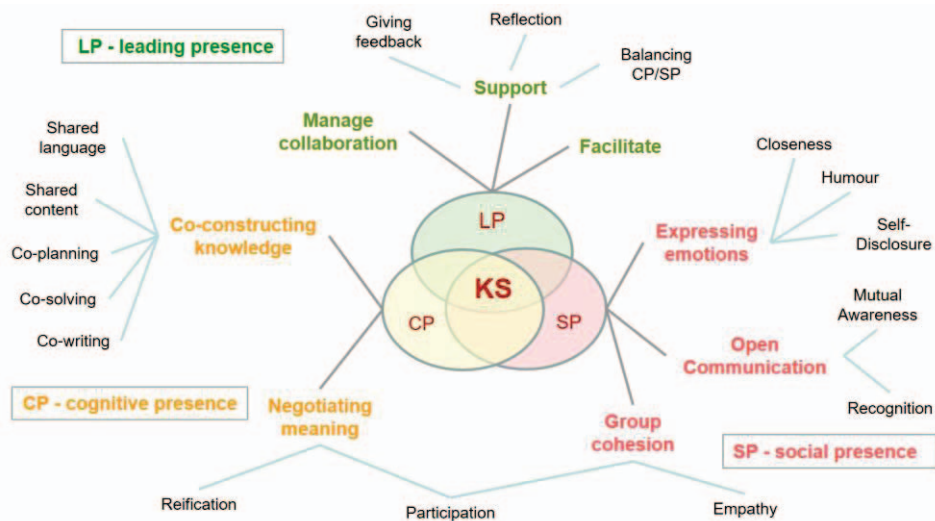


Figure 3: Presence model of knowledge sharing: 16 skills (extended from: Bettoni et al. 2017)

Storytelling, “an old skill rediscovered” (Snowden 2005) in Knowledge Management as a method for sharing knowledge or, more recently, as a didactic method for learning mathematics (Bittel & Bettoni 2014), is a good example of an activity which integrates most of the skills mentioned in the above model. We could even say that, thanks to storytelling, “we can share more than we can tell”, meaning that we can share also tacit knowledge (Polanyi 1966).

The type of technology used for interacting plays an important role in connection with collaboration; in a group for example, collaboration can be dramatically promoted or obstructed, depending on which type of communication technology the members of a group prefer and use. By distinguishing as parameters of the interaction the *degree of fragmentation of tasks* to be completed and the *degree of separation between people* doing them, we can define a continuum of ways of interacting (Fig. 4).

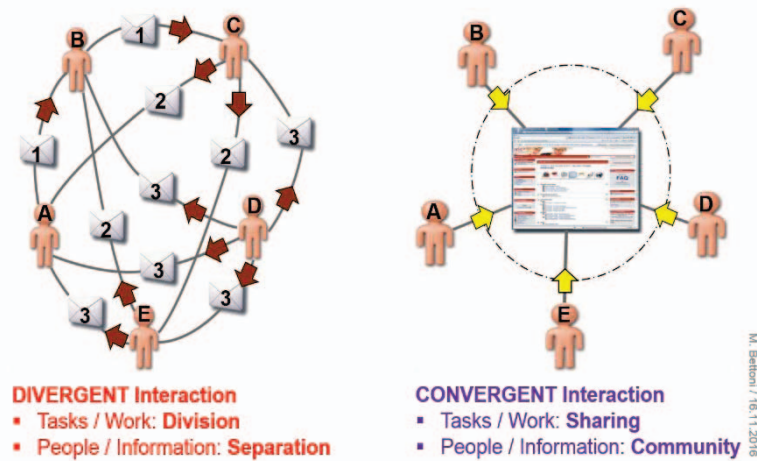


Figure 4: Interaction continuum model: divergent vs convergent interaction.

One extreme, where tasks are highly *fragmented* and people have a high degree of *separation*, is that of *divergent interaction* with e-mail as the technology that best represents it. The other extreme, where tasks are shared and people strongly connected like in a community, is that of *convergent interaction* with E-platforms like Moodle, Confluence (Atlassian) or QUBE (Pentacle) as the technology best enabling it. Interestingly in surveys about the application of E-Collaboration in business, e-mail, which promotes *divergent* interaction, is still considered as the most important collaboration tool (Roten et al. 2016, 3-4), thus confirming and demonstrating very clearly that new collaboration, which requires convergent interaction, is still not well understood and taken seriously in the business world.

When a group needs to work together on a single task, how do you organise the collaboration process so that participants can also concurrently engage as a community in a conscious, continuous effort to construct and

maintain the underlying shared knowledge structure required for new collaboration? A collaboration method, often called a *collaboration pattern* in literature (Eppler & Schmeil 2010), that the authors of this paper have developed and successfully practised for many years (Bettoni et al. 2016) is that called “D-3 model”. This name refers to the 3 elements of the model, which are 3 types of collaborative interaction: “Discuss”, “Describe” and “Document”. This D-3 model of interacting can be applied very generically to any knowledge intensive collaboration task by determining an appropriate use of its three elements.

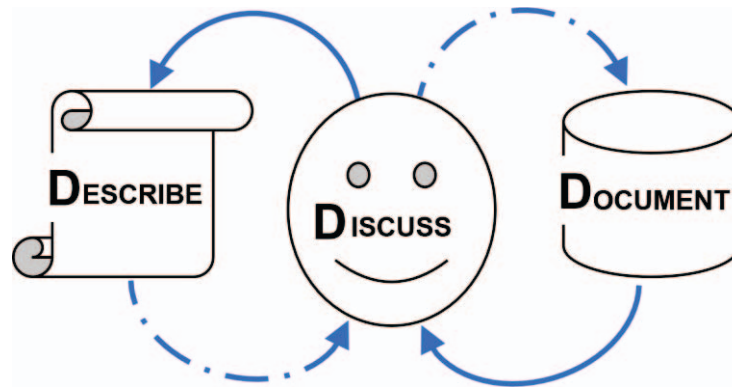


Figure 5: D-3 model of collaborative interaction (extended from: Bettoni et al. 2016)

The first element, *Discuss*, is the central element, a kind of control unit, the intersection of the flow of work to and from the other 2 elements. The group activity represented by this element consists of considering or examining issues according to arguments, comments, suggestions, etc. The community uses this type of interaction in a balanced way for its Domain, Community and Practice interactions. A *Domain discussion* is about a topic that the group wants to explore and better understand; a *Community discussion* is about understanding one another as people, as human beings in the group; it is an opportunity for group members to support each other in exploring who is who, who knows what and how they function together as a group; a *Practice discussion* is about some current work (a task in a project, a step in a case-based problem-solving process) or about a former experience (recounted in the form of an occurrence or connected series of happenings experienced by one of the group’s members).

The second element, *Describe*, represents a group activity which supports the first element, Discuss. Here the community engages in expressing with words, numbers and/or pictures the outcomes (intermediate, final) of a discussion (making explicit, summarising, extending). The group uses this type of interaction mainly for Practice interactions but also sometimes for Domain interactions, seldom for Community interactions. A *Practice description* can be any initial, intermediary or final outcome in a project, like a description of work (DoW), the draft of a deliverable or an article. A *Domain description* can represent, for example, the shared understanding of an aspect of a topic that has been discussed and a *Community description* can be, for example, a list of individual competences, connections or preferences or a table of the group’s weekly office presence, a table of its yearly absences (who is at an event when, who is on holiday, who has planned other such absences) etc.

Finally, the third element, *Document*, represents the activity of storing in an organised repository what has been described or collected from external sources. The community uses this type of activity mainly for Domain and Practice interactions, seldom for Community interactions. A Domain document could be, for example, a declaration of the group’s mission, vision and strategy; a Practice document can be a report in a project or the final version of a white paper and a Community document, a CV of a group member or a plan for a group’s outdoor meeting.

6. Conclusion

Buying and installing digital tools will not make a Digital Transformation of collaboration happen. In order to unleash the full potential of the new practice of collaboration that is emerging in the world of VUCA, we need to understand and take seriously that this new collaboration is *knowledge-based* and *community-oriented*. In the VUCA world, successful people interact in a new way: they work together on a task without splitting it. And because the task is not split, the related knowledge needed during the performing of the task must also remain as a unit. For this reason, new collaboration must be *knowledge-based*. Moreover, since keeping this task-related knowledge as a unit requires the mutual engagement of the group in a conscious, continuous effort to construct and maintain this unit as a shared knowledge structure, the group should organise itself as a community of

practice which will enable them to collaborate in a *community-oriented* way. Based on these insights, we have developed some models for supporting a group with implementing new collaboration: an architecture model of the essential components of a new collaboration system (Fig. 2), a presence model of the skills required for implementing the sharing of tacit knowledge (Fig. 3), a model of the continuum that connects divergent with convergent interactions (Fig. 4) and last but not least, a model of the collaboration process that focuses on three necessary and sufficient types of collaborative interaction (Fig. 5). Further work will be needed in order to develop more detailed *collaboration patterns* or methods addressing different phases of the new collaboration process in its full range of possible instances.

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