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Reflection on transdisciplinary team processes within the Dutch Blockchain Coalition based on a case study of three teams

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November 2020

Transdisciplinary team processes within the Dutch Blockchain Coalition

“Ben ik een roepende in de woestijn of die pionier die daadwerkelijk iets in beweging zet?” This question of one of the use case members of the Dutch Blockchain Coalition (DBC) highlights the precarious venture of its transdisciplinary efforts towards innovation. Transdisciplinary collaboration is key to fundamentally transforming blockchain applications for Dutch society. Such collaborative processes are highly complex though. The essential collaborative capability of collaborating partners is continuously (re)constructed in their interactions, making or breaking the teamwork. Understanding these group dynamics, therefore, is key to set the right stage for successful collective effort. The TU Delft Communication Design for Innovation department, member of the Delft Blockchain Lab, has studied three teams within the DBC to gain insights into transdisciplinary team processes within the network.

1 | The development of collaborative capability

The problems of today's society do not come in disciplinary- or sector-shaped boxes. The Dutch Blockchain Coalition, which aims to stimulate the development of blockchain applications with fundamental impact on Dutch politics and business, has been initiated to facilitate interdisciplinary innovation with technical, legal and organisational expertise from both public and private organisations. The aspired fundamental innovations that truly transform the nature of our economic, social or political systems hold the highest degree of novelty, but also the highest degree of complexity in collaboration.

Transdisciplinary teamwork in transformative innovation

Transformative innovations require interdisciplinary and transdisciplinary collaborations between disciplines and sectors. Information, data, techniques, tools, perspectives, concepts and theories from two or more disciplines needs to be integrated or even transcended to solve problems or to create new understandings (Gray, 2008). This integration and transcendence is needed to generate and implement fundamentally new conceptual frameworks and applications.

These inter- and transdisciplinary collaborations are the most difficult categories of joint work. To act collectively is a difficult and ambiguous process. Each partner brings her or his own set of expectations, interests and perceptions. The different contributions the divergent partners can make are the reason for collaboration. However, the same differences can be

a source of misunderstanding and frustration (Bektas, 2013; Gray, 2008). Effective teams achieve to harness differences between its members effectively (Bammer, 2008).

The DBC as a multiteam system

First efforts of the Dutch Blockchain coalition, launched in 2017, were focused on building the foundations for a proper innovation network. A governance structure as well as an action agenda were developed (DBC, 2017). Workgroups around specific topics within the action agenda were formed. (For more insights into the first stage challenges of the development of the DBC, see Hillebrand et al. (2018) and the previous whitepaper of the authors, Stenfert and Kalmar (2019).)

In their later development from start-up to scale-up, the DBC selected five promising concepts within the network, to support the development of these concepts. These 'use cases' cover innovative initiatives regarding a self-sovereign digital identity as well as logistics, educational certificates, pensions, and governmental grants. Later on, a sixth one about mortgages was added to the use cases.

With these developments, the DBC network grew from a collection of enthusiastic organisations and individuals into a network with multiple teams and projects. Teams within such a *multiteam network* are complex adaptive systems that are part of a larger system (Turner et al., 2020). The DBC is committed to the support of teams rising from and around their network, to facilitate and catalyse their innovations.

Collaborative capabilities: making or breaking team effectiveness

Key to effective support is the understanding of the complex dynamics of transdisciplinary teams. Collaboration is often an extensive – and therefore expensive – process. Benefits need to be expected and success has to be feasible (Camarinha-Matos, 2006). The concept of *collaboration readiness* offers a framework to assess this feasibility, helpful to consider whether to start a collaborative project or not. Collaboration readiness is defined as the "readiness for collaboration" or "collaborative capability" (Romero et al., 2009).

This collaborative capability is often characterised by an attribute-based perspective, conceptualised as a set of attributes on an organisational or individual level that actors employ to collaboration. Collaboration readiness, seen from this perspective, is reflected in the provision of information, budget, staff and other resources to support collaboration (Ulbrich et al., 2011).

A team's capability to collaborate is constructed by its members' interactions. The support of teamwork within the DBC, therefore, requires a group dynamic perspective that captures how teams develop – or lose – their collaborative capability during the collaborative process.

However, this checklist approach is limited. Although ex ante (as well as ex post) evaluations are very useful, these types of reflections leave the dynamics between start and finish mainly untouched. A collaboration with all the right boxes ticked at its start has the potential to be successful; but this success is definitely not guaranteed. Teams are complex, adaptive, dynamic systems; their interactions change the team, team members and the context they are working in (Kozlowski et al, 1999). It is in the interaction between the team

members that the potential of collaboration needs to be translated into actual progress and results; collaborative ability is socially constructed within the team. Understanding effective collaboration, therefore, requires a group dynamic perspective that describes how teams develop – or lose – their collaborative capability during the collaborative process (Ulbrich et al., 2011).

A dynamic model to study collaborative capability

The dynamics of collaborative efforts can be seen as iterative cycles from inputs via processes to outcomes (see figure 1). Collaborative capability evolves as team members interact over time. Within this cyclical evolving process, all kinds cognitive, motivational and affective states emerge among team members and within the team as a group. These *emergent states* are properties of the team with a dynamic nature and vary as a function of team context, inputs, processes and outcomes (Costa et al., 2014).

Emergent states are continuously produced and reproduced in team interactions (Costa et al., 2014). For example, teams with low cohesion - which is an emergent state - may be less willing to manage conflict - which is process. In turn, this may create additional conflict that lowers cohesion levels even further (Bowers et al., 2017). The (re)production of emergent states is a process that can either foster or undermine the team's collaborative capability; It is a fine line in which teams can surprise by the dynamism that collaborations can create as well as the inertia that can occur (Thomson and Perry, 2006).

The Communication Design for Innovation (CDI) department of the TU Delft studies this fine line, to support effective teamwork in collaborations such as the Dutch Blockchain coalition.

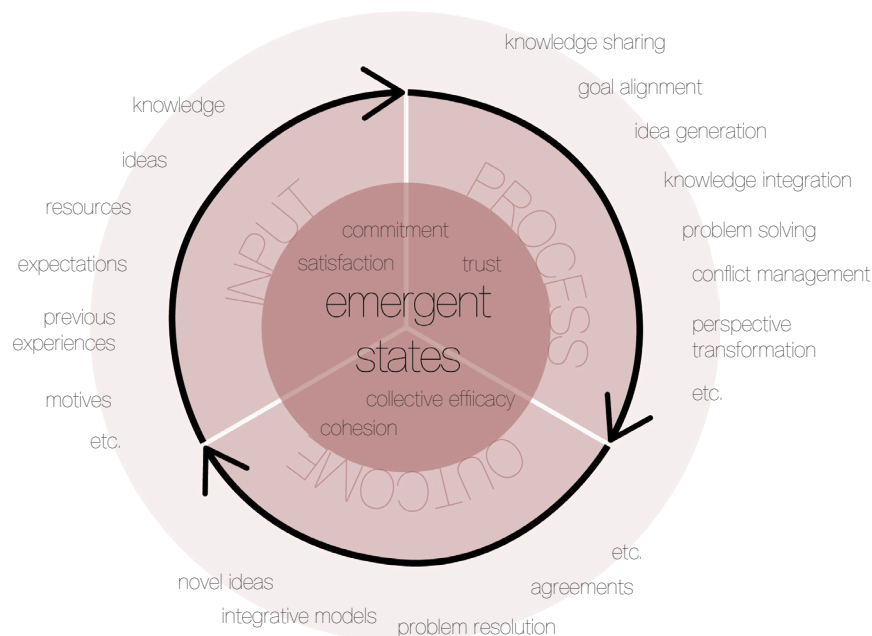


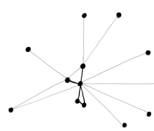
Figure 1. A dynamic collaboration model: capturing a dynamic perspective on the development of collaborative capability within teams

2 | Case study: three teams within the DBC

To create insights into the dynamics of transdisciplinary collaboration, the Communication Design for Innovation department of the TU Delft has studied three teams within the DBC. The team of the Compliance by Design use case, the team of the Mortgage Case and the former team focusing on SSI, known as the 'Parasolgroep'. Team members have been interviewed in a semi-structured way about their perspective on the team, collaboration within the team and collaboration within the broader ecosystem of the DBC. The one-hour interviews took place between September 2019 and January 2020.

Team 1 | Compliance by Design

The Compliance by Design project, which is one of the five use cases of the DBC, focuses on “transparency and automation of processes” in the field of subsidies. Blockchain offers the possibility to create applications that guarantee that subsidy resources are being “used for the intended purpose and in the intended manner” (DBC, 2018).



*Impression
of the team's
structure*

Various governmental organisations and potential (public) users are involved in the development and implementation of these applications for subsidies in various contexts. The team recently developed a first application for an educational subsidy; in the period of the interviews they were preparing the development of a new application for -more complex- European agricultural subsidies.

Fragmented perceptions of the team

Interestingly, not one of the 6 interviewed team members gives a similar description of the use case team. Every participant mentions different stakeholders and organisations that constitute the Compliance by Design team.

Some refer to a small “core team”, entailing the people who are involved in the realisation of the next prototype or mention only the actual builders of the prototype as “currently the most relevant stakeholders within the project”. Other participants, on the other hand, refer consequently to “the growing blockchain community” and the “network” when they are referring to the team involved in the Compliance by Design project. Each participant seems to have its own demarcation of the team; there does not seem to be a clear shared sense of who's in and who's out.

Interestingly, every interviewee mentions different stakeholders and organisations that constitute the team; the perception of the team is a fragmented one.

These fragmented perspectives are also present in the narratives about the origin of the project. Each participant has its own story on how the project became a project, referring to his/her personal path through previous pilot studies, personal interest in blockchain and/or relationships with relevant actors.

Divergent scopes, but a strong shared narrative connecting the scopes

The divergent team perspectives correspond to the participant's dominant perspective on the scope of the project. The interviewees who tend to see the broader blockchain community as their playing field, define project ambitions and goals with a more abstract, long term scope. They refer to “new ways of interaction between governments and citizens” or “a generic infrastructure for compliant financial transactions within the Dutch government”. Others express a more concrete project scope, such as “automating legislation” or “building a prototype”.

It is interesting to notice, however, that the interviewees are remarkably consistent about the project's strategy - often even using the same words - that connects the concrete, short term aims with the more abstract long term ambitions mentioned by the team members. Despite the different accents in scope, all participants show a sense of both more abstract, long term aims and more concrete, short term goals within the project. Each participant frames the concrete use case as a means to achieve the long term aims; they all express in some way the relationship between the concrete use case and a bigger vision. These two levels of goals "do not conflict, they just have a different time path", as one of the participants says.

In contrast to the fragmented team perception, the interviewees are remarkably consistent about the project's strategy that connects short term aims with long term ambitions.

This vision is not exactly the same for all participants. Some tend to stress the long term technical progress, some tend to stress societal benefits. However, they share that the concrete use case is - in different ways - contributing to their long term vision. And these long term visions seem to be overlapping enough to fuel coordinated action in the present.

'Think big, act small'

The strategy for this coordinated action is widely supported among the interviewees. There seems to be a shared motto of "think big, but act small". It is important to "start small", is what every participant is literally highlighting. "We made something big into something small, to be able to build a project and to make it manageable", as one of the participants states. "The project acts a bit under the radar, not too big at once, to not raise huge expectations and discussions that do not help us in this stage", another participant mentions. The project members aim at fundamental change, but start with a single, simple case. Just one example to be able to experiment, to build, to prototype and to find out how it might work. And when it works, try a next use case; increasing complexity and challenges; learning step by step.

Within this strategy of sequentially working on use cases, it is not just about making it manageable, building a strong story is important too. All participants are aware of this aspect. The first use case was "a simple use case, not a big deal". It shows that the concept is promising, but this is not enough. "A simple use case raises objections amongst other potential users such as 'but our case is different, our case is exceptional, our case is too complex for this', allowing them to keep it at bay. Therefore we've started a very complex use case now, to undermine these arguments. It is a bit of an overkill strategy." The 'think big, act small' motto organises meaning within the team.

Bilateral interaction

The motto constitutes meaning for relationships within and around the team as well. Interactions are mainly organised around the specific use cases; people contributing to these cases are involved in the teamwork. Others are informed in bilateral interaction by the project manager. Interestingly, this "project manager" or "product owner" is the only team member mentioned by all interviewees. This resembles the interaction within the project. The project manager takes a central role in the team structure; most team interactions are bilateral meetings between the project manager and one of the other project members.

Focus on roles

Remarkable, furthermore, is the use of role definitions to describe the various team members. Although each interviewee mentions different team members, they all use role definitions to describe their fellows. Team members are described by roles such as “coordinator”, “project manager”, “product owner”, “secondary”, “assistant of the project manager”, “visionary”, “builder”. Every participant has a specific role in the ‘team’ that is recognised or affirmed by other project members.

DBC as coordinator

In line with the focus on roles, the team’s relationship with the DBC is mainly described by the coordinating role of the DBC representative in the Compliance by Design team. This role is recognised and expressed among almost all participants; because of this role, the relationship with the DBC is clear and well appreciated. “The DBC, in the role of the coordinator, helps us to keep the ball rolling by providing the project with new users and use cases.” The coalition is perceived as usefully “broadening” the projects potential use cases. “The DBC is relevant when we want to reuse our prototype in a broader context, outside our own organisation.” “The DBC supports to strengthen our message; with new use cases, we collect an increasing number of success stories, a snowball effect.”

The role and identity of the DBC is framed in such a way that interests of the network, the team and the individual team members are sufficiently aligned and tension between identities is reduced. It can be questioned if this alignment is strong enough for the future; the team’s “under the radar-strategy” may leave potential conflicts between the departments and organisations involved currently out of sight.

Bridging capacities

It is interesting to note that 5 out of 6 participants of this team mention their bridging or mediating capacities. “I am able to have a multidisciplinary perspective”; “I see myself as an linking pin in this system”; “I know how organisations work, but I understand the technological side of it too”; “Governors lack sensitivity for technology; engineers lack sensitivity for governance. Bridging that gap is what I do.” From these bridging perspective, team members seem to be well able to connect individual and collective identities; they actively formulate the mutual (beneficiary) interdependencies.

“A coalition of the willing”

One of the interviewees describes the team as “a Gideonsbende” and “a coalition of the willing”. Team members were asked to join the team based on previous collaborative experiences. Various “enthusiasts” were asked to join. “Their willingness makes it simply easier to get things done within our organisations.” This selection of team members created a team start with an already high level of trust, reducing complexity more than other forms of organisation can do, as Thomson and Perry (2006) highlight.

Team 2 | The ‘Parasolgroep’

This team gathered around the topic of a digital identity, or self-sovereign identity (SSI) for the Dutch citizens. The ambition with this digital identity is to make “the transition from the copying of information to the sharing of values about that information” (DBC, 2018).

Based on previous efforts, the ‘Parasolgroep’ intended to continue the collaboration and accelerate to realisation of SSI for the Netherlands. Various parties from the financial sector, academic fields and from the Dutch government were part of the



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team. The *Parasolgroep* finished their work by the summer of 2019; handing over their results for a new team to follow up.

Shared sense on team boundaries

In contrast to the fragmented perceptions of team boundaries of the team above, the 6 interviewed members from the *Parasolgroep* did have a shared sense of its boundaries. Every interviewee exactly mentions the same team members. Interestingly, they mention them in the same way: every stakeholder defines the members by mentioning - often even just - the organisations where the members are formally related to.

Momentum for action

Although there are various narratives about the history that led to the establishment of this team, there is one particular moment in time that is perceived as the birth of the team. At “a sunny lunch break after a coalition meeting”, the anecdote tells, the team members “by coincidence ended up together at a terrace, under a parasol”. Under that parasol, the stalling progress of the development of a Dutch digital identity was discussed and the sentiment rose that it was time to take new action. “We felt: we are in this the same way. This was the moment to act.” And: “That moment felt like a chance, a chance to really get something done.” This very moment set the stage for the start of the team, calling itself the “Parasol team”, a name that has become the broadly used name for this team.

A limited group of people: key to internal trust, commitment and progress

The group of people under the parasol “trusted each other just enough” to “feel a sense of yes, we can”. In contrast to the stalling progress and the struggles they experienced the months before, the choice for a new team, with a limited group of people, fuelled the belief in their ability to achieve results. The need for a limited number of people had to do with “the potential delay associated with involving everyone in the arena” and the risk to “run ashore in distracting discussions on technical aspects”.

The interviews highlight a strongly shared sense on team boundaries. These boundaries were perceived as key to trust, commitment and progress within the team. The same boundaries, however, appeared to trigger suspicion and distrust within the broader DBC network.

Other parties who wanted to join the new team were judged quite strictly: “We were very strict: you can only join the team if you leave your preferred technical solution at home.” The clear demarcation of the group is indicated by several team members as “a safe environment”; “We invested in each other, leading to a group of people trusting one another.” The clear team boundaries are also linked to commitment: “Once you chose to be in, you don’t reconsider your team membership easily.” A closed group was perceived to be the only way to create the necessary trust and commitment. “It brought us further on the subject, but also in relational and cultural aspects.”

A limited group of people: triggering external suspicion and distrust

While most team members experienced the clear team boundaries as an essential condition to move forward, it immediately triggered “suspicion” and even “distrust” amongst other parties from the coalition. “It led to friction.” “People were suspicious: what is the team contriving?” Some interviewees say to understand these worries. “It was indeed a group of powerful parties with the competencies to achieve something; why would they involve the other parties of the coalition?” However, most participants stress the fact that “it was simply not going to work” with a bigger group; using metaphors such as a “Poolse landdag” or a “polderclubje”. “Involving all the network parties was actually distracting us from our goals.”

Sharing struggles and dilemmas

Parallel to the issues around the topic of team boundaries; there were divergent perspectives on what the team would deliver. “The goal was to accelerate the realisation of a self-sovereign identity solution.” However, there was confusion about the opted deliverables, both among coalition members and within the team. “I thought it was about creating clarity about essential conditions; others just wanted to start building a solution, looking into the details without having a bigger goal.” “One said: we need an entity. Another said: it needs to be a system of agreements and conditions. And a third said: it needs to be an entity that is going to make a system of agreements. There were differences in views.”

There seemed to limited structure and space to discuss these dilemmas openly within the context of the DBC network. “The team has submerged too much in its own puzzle. It was a tough puzzle indeed; but still, we could have done that differently.” “We could have been sharing our dilemmas more with the coalition.”

The issue of the ‘spin off’

When the Parasol team introduced their vision to establish an “entity” or a “spin off” the friction between DBC and the Parasol group exacerbated. The term spin off was used by both the team itself and the parties around the team as a confirmation of the (divergent!) meaning that both had been constructing.

Within the team, the concept of a spin off was the results of the study of previous innovations in their field. “We were inspired by spin offs of that time arising from banks; it appeared to be an effective way to accelerate innovation. Those examples gave us the belief: yes, we need to realise a spin off too.” This belief was supported by another strongly shared narrative - mentioned by all interviewees -: the failure of the in kind model, based on voluntary commitment and contributions. “The in kind model is leaking. The challenge is too big and too complex to go on in a voluntary way. You can’t stumble on.” The voluntary approach did not lead to the commitment that is needed to the creation of a joint solution. “If you don’t agree on something, you can just go your own way”, leading to divergent initiatives and development paths instead of collective action, something the team members also experienced during former pilot tracks on the topic.

In contrast to the team’s belief in the spin off concept, the term spin off at the same time seemed to confirm the coalition members’ suspicion: that the team members would leave the coalition to do it on their own, literally spinning off. “From the moment we mentioned the spin off, there was distrust.” “Our words were taken out of context; others thought we were making secret plans. But that has absolutely not been the case.” Ironically, the team deliberately chose the word spin off, to stress their roots in and continuous relationship with the DBC. “We called it a spin off, because we wanted to stress that we want to keep a connection with the coalition.”

The DBC as incubator?

There was tension in the relationship between the team and the broader coalition. The interviews bring forward a difference in the sense given to the nature of a network such as the DBC. The divergent perceptions of the spin off concept resemble the divergent perception of the ideal relationship between team and coalition.

The sense the team made of the role of the DBC fits their preferred spin off strategy: the nature of the DBC is described by various interviewees as an incubator. "The DBC can be a catalyst, a convener, a facilitator and a coach; but not the entrepreneur. [...] The coalition therefore needs to have the guts to say 'we've been the incubator, we were the one connecting these people; but now you have to go. We let you go professionally; so with a proper roadmap, the right governance structure and a solid plan.'" However, this incubator frame was not shared in the same way among the rest of the coalition.

Diminishing motivation

The tension between coalition and team influenced the team's morale. "We were cut off in meetings." "We were excluded." "We've been opposed by the coalition." These dynamics evoked emotions influencing the team's enthusiasm and commitment for the task. "We felt misunderstood and unappreciated; fuelling the wish to hand over the baton." The perceived balance of give and take had been gone. "If you meet us with so much resistance and critique, don't be surprised that we quit the job at a certain point." The team decided to finish their work by creating a final advice and giving their results "back to the coalition". This was also a statement to redefine the relationship with the DBC. "We decided to be discharged, to formally make clear that we took distance. Not just for our own interests, but to publicly show that the job is up to everybody again." "We gave the challenge back to the coalition, so the issue of a closed group is not a question anymore."

The influential role of appreciation is also linked to the in-kind nature of collaboration. For most of the team members the in-kind work is experienced as extra effort. Not required, but still given for the bigger goal. "Most of us are doing it extra, next to your daily jobs." "It began to feel like a thankless job; after all the effort we put in it..." "A bit of understanding and appreciation would have been enough." It did not feel as a fair deal anymore; the balance between give and take was distorted.

Team 3 | The Mortgage case team

Within the Mortgage Case it is explored how the extensive administrative process of requesting a mortgage can be simplified for those who want a mortgage.



*Impression
of the team's
structure*

This specific case was initially part of the development of a self-sovereign identity; but was added to the DBC's list of use cases later. Different organisations from the financial sector are involved in the case.

A group of come and go with a core team

The team members all mention the inconsistent composition of the team. The team started as a relatively big group of various people. This group, however, did not developed into a collaborative team. "It was a group of come and go; I saw different faces every meeting." A few of these members did stay though. "We started with quite a big group; the team now – what has been left over of it – has shrunk to a kind of die-hard team."

Interviewees mention the same members of this “die-hard” team. They mostly describe their fellow team members by organisation in combination with expertise/perspective: “with business knowledge”, “from an IT perspective”, “with mortgage expertise” or something in between these three.

Most members are working on several projects; they have “other trajectories”, “quite some use cases”, “various innovations” and “our own experiments” in their organisational context. Interest in the use case therefore was “not merely for the collaboration, but to see what competitors are doing.” “We joined mainly because of the fear of missing out.”

Integrating divergent expertise

The differences in expertise, potentially useful for innovative applications, are mentioned by almost all interviewees as a source of misunderstanding. “Then you are talking to someone from an innovation department, then from a mortgage club, then from a technology team... [...] We are working with completely different backgrounds; it is hard to understand each other, we miss the knowledge for that.”

Solving which problem?

The team has a shared topic of interest, captured by the name of the use case. However, ambitions, aims and strategies related to this topic show quite a fragmented picture within the team. “You just feel that everyone has a different interpretation of the problem, the task and what they want to achieve.” This is indeed shown throughout the different responses.

One of the issues here is the perception of the scope of the project. The mortgage use case originally came forward from the search for a general digital identity for Dutch society. A broad, abstract and ambitious goal, complex and hard to realise. Mortgages was a context in which such an identity offer benefits. This concrete benefits lead to the interest of commercial parties in the mortgage system and the willingness to innovate and invest on this topic. The concrete use case could be an illustration of how a digital identity could work, and accelerate innovation.

However, by making the identity issue concrete in a mortgage context, the sense of the ‘problem to be solved’ shifted. Within the boundaries of the mortgage context, the problem was reframed into “relieving stress of consumers during the process of request because of all the papers that need to be hand over”. This “customers perspective” narrowed the scope, with the intention to make joint effort doable and effective. This seemed to work well in the first place. However, later on some of the interviewees experienced it the other way around: losing the connection with the bigger digital identity ambition, resulted in a decreasing urge to collaborate. “We’ve worked eventually from a customer experience perspective; that was totally not my goal.” “The concrete issue that the use case has to solve, simplifying the mortgage request process, can be solved by other means than blockchain too.” “The ambition that customers need to be able to control their own value still stands. However, I don’t see that in the use case anymore.”

The leading role

Remarkably is also the issue of a leading role here. There is a role of a leading organisation, but this is a limited role. The role is limited to a facilitating role, leading content-wise; but not taking full responsibility for the lead. Another team member also struggled with the project management role; it was not accepted that he would take that role; feeding the feeling of a lack of leadership in collaboration.

Taking the lead was either perceived as a threat of losing control (by others) or as “too vulnerable” (by members themselves). Taking the lead includes traction, taking the first step, guiding; this also means: showing your cards. The team did not establish to set the scene for showing one’s cards.

How to steer a rolling train?

The collaboration seems to evoke a feeling of “a rolling train” that was hard to stop or even steer anymore. As one of the interviewee says: “I’ve been putting so much energy in this team already, then it is hard to quite.” However, interviewees share a sense that something has to change. “I think the team members saw my objections, but they polished them a bit to keep the train rolling. A real intervention, to talk about what was really going on, that was missing.” “We focused on delivering concrete results. But I wanted to address the question whether we were still doing the right things. [...] Even if you appear to go in the wrong direction, you can decide to do it differently when the group of people is interesting enough to collaborate. We had the change to do that, but we did not.” By not steering the rolling train, tensions between individual interests and collective interests grew, without making this explicit.

Interviewees each mention that change was needed to make the right progress, but it appeared to be hard to address this need for change sufficiently and profoundly.

The need for reflection

Some interviewees would have wanted reflection on the collaboration: was it still going in the right direction? However, reflection was perceived as bothersome by others. “We did too much reflection in my view. Every meeting we started with discussions about feelings of dissatisfaction and every meeting we ended with it.” Reflection did not seem to go much deeper than addressing worries. Almost all interviewees mention the lack of deeper reflection and addressing issues in collaboration. “We haven’t been going deep enough in our meetings to discuss some issues. There was a discussion on contributing versus giving critique; I think people look back at it as an unpleasant discussion; but we never talked about it properly.” The question whether interdependencies were beneficial enough was not addressed; while every interviewee expresses doubts related to this mutuality.

Fading out or restart?

Some team members lost their spirit to collaborate, reconsidering their personal or organisational involvement in the project. “We’ve been reconsidering our time investment and this project has been ranked lower on our list of priorities.” Other interviewees show a similar retreating movement. They question the chance of success of the collaboration and the value of continuing with the project. “If you ask me to do an intervention to revive the team, I would say no. I’ve lost momentum.” And another interviewee: “We don’t see much value in going with this use case anymore.” If there will be a restart, a “very strong plan” is needed. “A plan that I can easily present in my organisation. I need to be convinced that it is such a good plan that I am willing to reserve time for it. If I am not convinced, I can’t convince my organisation.”

Although trust on a personal level was built quite well throughout the process, doubts on reciprocity seem to have undermined commitment to collective efforts. “I am loyal to our team because of our good relationships; but if I am only looking from our organisational interest I have to conclude that we have to reconsider our involvement in the team.”

3 | Reflections on collaboration within the DBC

Studying the rich and dynamic processes of the three teams highlights various relevant insights into transdisciplinary collaboration in a multiteam network such as the DBC. Insights that are maybe even more relevant since team members all over the world have been forced to organise their interaction differently because of the COVID-19 pandemic, explicitly revealing questions about effective collaboration. A few reflections based on the dynamics within the three DBC teams:

Who's the team? – Fragmented perceptions

While the *use cases* were introduced by the DBC to concretise the network's efforts, creating clarity and focus; one cannot extrapolate this clarity to the teams working on these concrete topics. When looking at teams dedicated to concrete projects, one might expect to find clearly bounded groups of people working together. However, the three cases show first of all that teams within the DBC network are (complex) networks too.

While the Parasol group had clear boundaries as a team, almost all members are part of other teams or blockchain initiatives too. And for the Compliance by Design team and the Mortgage case team it hardly seems possible to speak of 'the' team. Every team member has its own perception of what and who the team is; ranging from slightly different nuances to completely divergent scopes. The networked complexity of the inter- and transdisciplinary ambitions of the DBC becomes tangible at the team level; team perceptions are fragmented.

One network, highly diverse teams - Divergent governance structures, mutuality, norms of reciprocity and trust

Traditional governance and coordination mechanisms such as hierarchy and standardisation are not very useful in such networked teams. Teams have to develop mechanisms that suit their network structure to collaborate successfully. Comparing the three teams, it is remarkable how they all developed their own - divergent - answer to this. They developed divergent governance and administration structures and divergent norms of reciprocity and trust.

For example, the Compliance by Design team functions as a bundle of relationships that are not closely tied; there is not a clear shared sense on the demarcation of the team. The project manager plays a key role in maintaining the relationships within this bundle. Commitment seems to be largely built on these bilateral relations. The Parasol team, on the contrary, developed a team structure with closely tied relationships and quite a clear sense of who is in and who is out. Commitment and willingness to adhere to the agreed-upon steps and actions seemed to be largely based on this shared sense of team boundaries.

The Mortgage case shows a hybrid governance structure. The team had quite a strongly tied core group with a (very) loosely coupled second ring of stakeholders. While this model of a combination of closely and loosely coupled ties seems to work productively for the Compliance by Design team, it seems to represent a sense of ambivalence in the Mortgage case team. The ambivalence is reflected in the asymmetry of commitment. The 'inner circle' of members has been relatively highly committed, although they all shared a sense of doubt regarding their commitment at the time of the interviews. Commitment of the second ring of stakeholders is perceived as low. A larger framework of agreement on the appropriateness of the collaborative efforts was perceived as missing.

Three team identities, three different interpretations of the DBC's identity

Every team also develops its own (unique) team identity. How do the teams perceive themselves? The three cases in this study show three different identities, expressed by

metaphors as “a *Gideonsbende*” a “coalition of the willing” and shared narratives such as the parasol story about the origins of the Parasol team.

Important to note is that the sense teams create regarding themselves corresponds to the sense they give to their relationship within the DBC network. The Compliance by Design team, with their *think big, act small* strategy, perceives the DBC as an ally in their mission to sequentially impress with new working show cases. The Parasol group wanted to establish a spin off entity; they frame the DBC as an incubator, the nursing room for such spin offs. Perceptions about the DBC’s identity differ from team to team. These different identities lead to different expectations of the relationship between DBC and team.

The interdependence of team and coalition

Not everything that is helpful for the team is helpful for the collaboration at the multiteam level, the level of the coalition. The Parasol team dynamics illustrate this. The team, with parties that are competitors in daily business, had to deal with the tension between their individual organisational identity next to their collective identity. They tried to reduce this competitors-complexity by building trust, mainly by means of the creation of a closely tied group that invested in each other and in the project. They used previous experiences such as the multi-party creation of IDEal (realised in a spin off) to make sense of their potentially mutually beneficially interdependencies.

The choices to foster the team’s collaborative capability, however, had a not-so-fostering impact on the collaborative spirit at the DBC level. The team perceived a certain closedness of the group as inevitable for their collaborative capability as a team. The broader DBC network, however, interpreted these close ties differently. In the interaction around the creation of a spin off, the collaborative capability at the level of the DBC network decreased quite drastically. Mutuality between team and network was at stake; reciprocity was questioned, resulting in a lack of trust between network and team. The tension between team and network influenced the collaborative spirit of the team again. Feelings of being unappreciated influenced the decrease of motivation.

These dynamics from the Parasol team illustrate the precarious interwovenness of collaborative capability at both the team level and the multiteam system level and the need for interaction that aligns collaboration at the team level and the network level.

The hidden impact of implicit dynamics

The same dynamics highlight how collaborative capability is created in interaction during the course of the process. Effective structures and mechanisms for collaboration are not a given from the start; they are created in the interactions within the team. The cases illustrate how their joint efforts nurture the collaborative capability of the team, leading to effective collective action. However, the cases also show how the process of reproducing and reconsidering the team equilibrium can lead to a decrease of collaborative capability.

These dynamics are only partially explicitly discussed. Discussions about collaboration often seem to be addressed via content-related topics. For example, dissatisfaction about the relationship between Parasol team and DBC mainly focused on the issue of the spin off. Feelings of distrust or a lack of appreciation - emergent states behind this issue - mainly seemed to be implicitly expressed. Still, the impact of such emergent states is high.

Another example of implicit dynamics with serious impact is brought forward by the Mortgage case. The somewhat ambivalent definition of roles and responsibilities in combination with ambivalence in shared goals led to some frustration among various team members. This frustration was only partially discussed. Although the necessary skills of conflict and project management were present among individual team members, no one explicitly took the

role to bring these capabilities in sufficiently. Frustration was not resolved well enough and sense of the project not reconsidered profoundly enough, leading to a diminishing willingness to collaborate. During the course of the process, the sense of usability and strategy diverted to such a degree that commitment was reconsidered by actually all interviewed team members.

How to talk about collaboration?

If not communicated properly, feelings of being unappreciated, frustration, a lack of support or distrust influence the collaborative capability of teams significantly, as shown in the cases. But how to do that well? The case studies show that it is not evident to address issues of collaboration, especially when it comes to implicit dynamics of emergent states such as commitment, cohesion and emotions.

Without structures and skills that facilitate addressing issues of collaboration, it is no wonder that it is hardly impossible to be aware of one's own and others' team identity; one's perceptions and thereby implicit expectations of the DBC; and the cognitive, affective and motivational emergent dynamics that influence team efficacy. This leads to unnecessarily missed opportunities for both the teams and the DBC.

4 | Recommendations for the DBC

Claim and develop the DBC's role as collaboration facilitator

In order to catalyse fundamentally novel blockchain innovations, we recommended the DBC to claim and develop its position as a facilitator of collaboration. The support of collaborative capability within its network is, in our view, one of the main values of the DBC.

In our previous whitepaper, in which we focused on the dynamics of the network as a whole, we argued for the DBC as the key agent in supporting new collaborative efforts. We again want to stress this advice, since it is vital in both the success of the DBC as well as in the success of the teams related to the DBC. To read the previous whitepaper, visit https://dutchblockchaincoalition.org/uploads/pdf/Whitepaper_The-DBC-for-Transformation.pdf

If done well, the DBC facilitates the trust and enthusiasm to start an (unconventional) collaboration; it offers the support to empower the team in developing the needed structures and skills for collaboration; and it guides the teams in reflecting on their joint work, to allow them to steer when necessary.

Such an identity of 'collaboration facilitator' differs from a frame that focuses on being the creator of concrete results. Of course, concrete results are important to celebrate and communicate. However, it utilises only a narrow perspective on innovation processes, which carries more value than its concrete products. Moreover, a frame focussing on concrete products is not complementary to the identity/frame of the use cases themselves. It might even be perceived as competing with the teams, who want to share and celebrate their successes themselves.

Building an identity that complements and substantiates the efforts of the teams strengthens both the teams and the DBC as a multiteam network. The collaboration facilitator frame offers this supplementarity; it is our advice to strengthen the DBC's identity and role based

on this frame. This is done by (better) communicating the DBC as collaboration facilitator as well as developing the DBC's offer to the teams regarding the challenging effort of transdisciplinary teamwork.

A promising move in this light is the recent initiative of several coalition members to actively connect the DBC's use cases and workgroups with researchers and research topics. They initiated a process of bringing together both researchers and business partners relevant to the network. With such initiatives, we see a growing awareness of the value that the DBC's management can bring related to the facilitation of innovative collaborations. This movement can be strengthened though. Studying the three teams has offered relevant directions for this:

Create narratives that shape effective relationships between the DBC and teams

It may seem obvious that every team member has its own perception of the team. However, the case studies show that it is not evident that these perceptions are recognised and/or acknowledged. Misunderstandings arise about f.e. tasks and relationships, also related to the relationship with the DBC. Understanding the teams' perspectives on their own identity and on the DBC helps to understand their expectations from the DBC.

We recommend to put effort in this. To be able to understand the current teams, but also to develop narratives that help to shape effective relationships between the DBC and future teams. It is advised to develop a variety of these narratives, to be able to deal with the wide range of possible team structures and identities. However, all narratives need to support the main identity of the DBC as a facilitator of effective collaborations in innovation. The narratives can be used - inspirational, not compelling - as a means to address, discuss and align expectations between teams and the DBC in an early stage.

Invest in tools to support collaborative capability within teams

A lot of collaborative work is done well by the use case members themselves. However, developing the needed collaborative capability as a team is not inevitable. Because traditional coordination and governance mechanisms are often not appropriate in these collaborations, the development of collaborative capability is a uncertain and often unclear process. The DBC can offer teams insights at the start of their collaboration, but especially also support during the teamwork. Teams now receive support from a DBC-representative, mainly with a task related focus. We advise to supplement this support:

Facilitate (external) coaching on collaborative capability

For example by offering teams the possibility to receive coaching on collaboration issues. For the teams, it is quite a job already to gather the right members, create commitment and discuss the tasks that need to be done. The case studies illustrate that it is hard to chair discussions about teamwork by team members themselves. A neutral, external coach is able to facilitate this discussion, to ask unasked questions and to facilitate zooming out on task- and teamwork.

Offer the means to reflect on and learn from collaboration within the DBC

Furthermore, we recommend to embed the development of collaborative capability in the activities of the DBC not just at the team level, but at the network level too. Looking at past years, team effectiveness has mainly been discussed by reporting team results in IPO meetings. Task related issues and results are addressed here. However, collaboration processes are not discussed at all. By not discussing this, collaboration as an essential

ingredient of successful innovation remains unexposed and lessons from teams are not shared and utilised. We therefore recommend to put collaboration and teamwork on the agenda of DBC activities too.

When doing so, it is important to choose the right form for this. Currently, information flow between teams within the DBC mainly goes via reports. These reports, again, focus on formal results. Issues on collaboration and lessons learned during the collaboration are very valuable to share too. A report is not the best means for this exchange though; learning thrives by informal exchanges; which can be organised by the DBC, to make every DBC member not just a blockchain pioneer, but also a collaborative pioneer.

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