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# The Dutch Blockchain Coalition for transformation

## Whitepaper on the evolution of the Dutch Blockchain Coalition

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Dutch Blockchain Coalition
connect and create

TU Delft

# The Dutch Blockchain Coalition for Transformation

**Connect and create. With this tagline, the Dutch Blockchain Coalition (DBC) works on the development of the upcoming technology of blockchain. In 2017 various partners from industry as well as government and knowledge institutions officially launched the coalition, a collaboration which aims to stimulate the development of blockchain applications for Dutch society.**

**After a period of foundation, the coalition is running and at a crucial stage of scaling-up. Capacities, abilities, ideas and concepts are available within the network to make further steps forward, but how to unleash these steps as a growing, ever-evolving network? This whitepaper aims to support the DBC's scale-up by reflecting on its evolution from a network perspective and recommending next steps to move further towards transformative blockchain innovations.**

## 1 | A blockchain future for the Netherlands

The upcoming blockchain technology has the potential to be used in many sectors; its possible use covers applications in health care, education, industry, the financial sector, the energy sector, government and more. With its distributed character, blockchain mediates in transactions without the need for a certifying authority. Validated by the network of blockchain users, the technology moderates collaboration and trust between people and organisations. With these characteristics, blockchain can offer possibilities for new social processes, can strengthen the autonomy of citizens and lead to novel forms of planning and control in enterprises; it has the potential to fundamentally change business, government and society.

**An unknown future**
This blockchain future, however, is yet unknown. There are still many questions related to both the concept itself and its potential impact. These questions address technical issues, such as whether or not there is sufficient bandwidth and computer capacity for the potential millions of participants and transactions. But the questions go beyond the technical aspects, addressing social, ethical and legal issues. For example, are current legal frameworks suitable for a blockchain-driven practice? And what are the ethical considerations concerning new applications? In order to effectuate desired transformations in business, government and society, the blockchain concept still has to be explored, investigated and developed.

**Transformative innovation: a challenging process**
This is not a simple job, and there are no quick solutions. A foundational change that reshapes reality can take years, from early single-use applications to broadly accepted transformations, as Iansiti and Lakhani describe in the article The Truth about Blockchain (Harvard Business Review, Jan 2017). The evolution of innovative technologies usually starts with low-novelty single-use applications. Next step applications become higher in novelty, but still, need only a limited number of participants to create value. Then new solutions are going to substitute existing solutions. Those are relatively low in novelty,

but high in coordination needs, because they involve broader public uses. Only after these phases truly transformative innovations are being realised and adopted, concerning entirely novel applications that change the nature of our economic, social and political systems (fig.1).

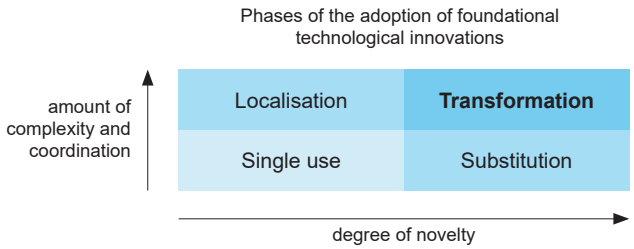


*Figure 1 The DBC's ambition is to develop transformative blockchain applications (figure based on Iansiti and Lakhani, 2017)*

These transformative innovations involve complex coordination with many actors and institutional agreement on standards and processes. Iansiti and Lakhani (2017) therefore state: "It would be a mistake to rush headlong into blockchain innovation without understanding how it is likely to take hold". Blockchain promises enormous value, but developing (the required foundations for) transformative blockchain applications is a big challenge.

## 2 | Developing the DBC: a collaboration for transformation

The Dutch Blockchain Coalition (DBC) has taken up this challenge. Within Dutch industry, knowledge institutions as well as governmental organisations, many explorative blockchain initiatives are being realised. The need to join forces and to create synergy between these initiatives has led to the DBC's establishment, initiated by team ICT of the Dutch Ministry of Economic Affairs under the programmatic label 'Dutch digital delta'. Partners from government, industry and knowledge institutions agreed to collaborate to explore fundamental issues as well as to develop applications for Dutch society. The mission of the Dutch Blockchain Coalition is "to realise fully reliable and socially accepted blockchain applications, to create the best possible conditions to allow blockchain applications to arise, and to facilitate the use of blockchain as a source of trust, well-being, prosperity and security for citizens, companies, institutions and government bodies" (DBC, 2017, p.17). The coalition's ambition is to develop applications with fundamental impact on Dutch economy, business and politics: transformative innovations.

### Building the foundations of a coalition

These transformations indeed cannot be realised alone. The DBC gathered various parties to start building an innovation network that addresses the necessary coordination between the many relevant elements such as technology, the legal system, governments and business.

**The formulation of its main principles**
First efforts of the coalition were focused on building the foundations for a proper innovation network. In this foundation stage, a governance structure with a coalitieberaad, an

organisational team (kernteam) and a team with representatives of the partners (IPO) has been established. The kernteam and the IPO are managed by a coalition manager.
The DBC focuses on the pre-competitive stage of innovation, supporting joint exploration, research and experiments in the blockchain realm. The coalition partners agreed to use an open innovation model for this: knowledge and insights will be shared freely within the DBC's network, and there are no specific intellectual property rights for any of the participants. Additionally, new partners are welcome and do not have to be distinguished from the founding partners in terms of contribution and importance. Results of the coalition need to elicit "discussion, amazement and the desire for deeper consideration", in line with the potential of the foundational blockchain technology and the coalition's ambitions to move towards transformative innovations (DBC, 2017, p.17).

**The development of a shared agenda**
To make steps forward, the DBC developed an Action Agenda with three 'action lines': a first line addresses the development of blockchain building blocks, such as digital identities. Identification processes are needed to make blockchain applications possible, but they can also be supported by blockchain technology. This line focuses on the broad range of issues related to reliable identification and authentication of persons, legal entities and objects.

The second action line is dedicated to the realisation of conditions for the use of blockchain. When applications will be developed, it is essential to have the social, legal and economic space to accommodate these applications. Awareness and support of blockchain (applications) is the core of this actions line.

The last action line, the third one, covers the development and realisation of the Human Capital Agenda. Since blockchain is a young technology, little expertise has been available yet. There is a scarcity of knowledge and expertise within the various related fields. The stimulation and creation of this necessary knowledge is the aim of the third action line (DBC, 2017). These action lines give direction to the development of blockchain within the DBC.

## Unfolding next stages

Workgroups around specific topics and interests have been formed by members, exploring various aspects of blockchain. The activities within the workgroups are resulting in various kinds of output. For example, in the context of the second action line, a workgroup on smart contracts published a report on the legal conditions for the use of such contracts. Furthermore, a workgroup developed a scientific research agenda, contributing to the first national research agenda on blockchain that has been presented in May 2018. Network partners involved in the action line on human capital developed a training program on blockchain. They also created a matching tool to connect universities, students and companies who are interested in blockchain issues.

Within the action line on digital identities, substantial progress has been made as well. Partners have been working on an identity in which citizens have control over the information they are sharing with third parties online, a self-sovereign identity (SSI). October 2018 a report on SSI explorations was presented and evaluated in order to decide whether the studied identity management utility Sovrin provided a base for further steps within this action line.

**The implementation of use cases**
It was concluded that Sovrin should be considered a utility with serious potential, but not mature enough yet to implement. The evaluation resulted in new leads for technological and legal explorations. Leads such as Sovrin are the basis of the 'use cases' the DBC has

formulated recently. The coalition has selected five promising proof of concepts within the action lines, to support the development of these specific applications. Next to prototypes related to SSI, the DBC's use cases now cover experiments with applications in logistics, educational certificates, pensions and governmental grants.

**International growth**
In addition to developments within the network, the DBC expanded its network as well. The DBC is expanding, focusing on (inter)national contexts and creating a wider circle of influence, as the recently published vision document *Blockchain for Good* shows (DBC, 2018b). It invested in new relationships and partnerships. Collaborative projects have been initiated with Scandinavian countries, India and Canada; a pilot study had started with the World Bank in Washington DC; and agreements have been made with Belgium and Luxembourg to leverage collaboration potential for mutual benefits.

## 3 | Challenges for a growing innovation network

After investing in the foundation of the coalition and the formulations of its main principles, organisational structure and agenda, the coalition has advanced into a running network. Subgroups are working together on various topics, experiments lead to diverse results and new connections are being made. This evolution from start-up to scale-up inevitably leads to next level issues. New questions on technology arise but pressing challenges on collaboration emerge as well.

### From multidisciplinary to multi-sector interdisciplinary and transdisciplinary work

The DBC recognises that its intended innovation needs a multidisciplinary approach. Indeed, multiple disciplines need to be involved in the complex context of blockchain innovations. However, the nature of the collaboration between the disciplines that is needed now has a higher complexity than multidisciplinary work covers (fig.2). Multidisciplinary work refers to a collaboration in which different fields each make a separate contribution to a common problem in an additive way (Hillebrand et al., 2018). However, innovations require interdisciplinary and transdisciplinary collaborations between disciplines. Information, data techniques, tools, perspectives, concepts and theories from two or more disciplines need to be integrated to solve problems or to create new understandings; this is interdisciplinary work. In transdisciplinary collaboration, different disciplinary approaches are not only integrated but transcended as well. (Grey, 2008) This is needed to generate fundamentally new conceptual frameworks, models and applications. When transformative innovation is at stake, interdisciplinary and transdisciplinary work is critical for success.

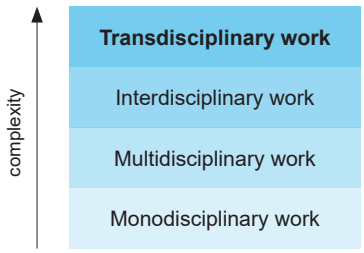


*Figure 2 Transformative innovation requires transdisciplinary collaboration, the most complex form of joint work.*

## Collaborative challenges for the coalition

Interdisciplinary and transdisciplinary collaborations are the most difficult categories of joint work though. This difficulty increases when not only different disciplines but also various sectors are involved, such as in the DBC. Each coalition member brings his or her own set of expectations, perceptions and interests that define his or her 'territory' in relation to the others. When territories meet, *boundaries* appear. (Bektas, 2013) Boundaries can be constituted by differences in knowledge, skills, working cultures, attitudes, worldviews because of the different disciplines the members are from as well as the various sectors which are included in the coalition.

**The recognised need for collaboration**

These differences are the very reason to collaborate: networked innovation can be more than the sum of its parts if new knowledge, ideas and concepts can be generated by inspiring and complementing each other, creating synergy. Boundaries are the source of new opportunities, where new possibilities arise.

A pilot study from the Communication Design for Innovation group of the Delft University of Technology and the Radboud University on the *collaboration readiness* of the partners committed to the DBC shows that awareness of this need for collaboration between disciplines is broadly present among the coalition partners (Hillebrand et al., 2018). A recent assessment of the added value of the coalition perceived by the partners supports this (DBC, 2018a). Values such as the joint development capacity to bring the blockchain technology further and the potential benefits for Dutch society are being mentioned as the main reasons to join the coalition. This provides the base for collaboration and an important incentive to invest money and/or hours.

**Tensions within the DBC: challenging collaboration readiness**

However, boundaries can also be a source of division, frustration and misunderstanding. The more diverse the partners are, the higher the chance of tensions within teams. The pilot study gave insights into early issues perceived by partners. Partners mentioned issues such as the desire to speed up the innovation process and the production of concrete results, the need to clarify tasks and responsibilities, the need to further professionalise governance and decision-making and the need for a stronger community feeling. On the basis of the pilot study, the DBC took various steps to improve the organisation. On a more fundamental level though, some of the issues could be interpreted as the first signs of advancing into a next phase as a network, typically accompanied with growing tensions such as:

- *The desire for concrete results versus abstract exploration*
  Some of the coalition members would like to speed up the innovation process to gain results as soon as possible. They are eager to gain concrete output, after stages of founding the coalition. The explicit relationship between use cases and the coalition, as has been made recently, addresses this need. Innovation focuses on concrete applications here. Still, there are different attitudes and perceptions within the network towards progression. Explorations lead to new relationships, sometimes with a conflicting type of pace and way of working. Differences in organisational cultures and interests become increasingly tangible, challenging involvement, commitment and collaboration readiness on the one hand and efficiency in developing concrete results on the other hand.

- *Tensions in responsibilities and decision-making as growing network*
  During the pilot study, tasks and responsibilities were perceived as neither exactly specified nor described by some of the members. The DBC's management addressed

this issue by taking various actions. For example, the IPO dedicated extra time in their regular meetings to reflect on the way of working. Furthermore, the DBC created a governance workgroup in which the roles and responsibilities were crystallised. The coalition created regulations that include transparency on governance and decision-making.

However, new links, such as a stronger involvement of governmental organisations, bring new conventions and requirements to the table. The enhanced collaborations with diverse organisations require their own conditions, not necessarily matching the terms of other (types of) partners within the network, raising questions on how to effectively keep working together, developing (new) agreements and the coalition's collaboration model.

- *The difficulty of being a diverse community with strong and weak ties*
  Members would like to feel connected to the coalition and to each other as a community, as was highlighted in the pilot study too. However, relationships within the network are diverse. Some are closely tied, other members are only loosely coupled. The differences in working pace, organisational cultures, interests and conditions challenge the relationships, making the presence of community feeling and collaboration readiness vulnerable within the coalition.

  An important aspect of being a community is communication. Regarding the external communications, a serious step has been made by creating a new workgroup on this theme, with coalition members reflecting on and helping the DBC's external communications. The establishment of such a group introduced a more solid link between the DBC's members and the context it is operating in.

  Internal communications seem to remain a challenge though. In January 2018, communications within the coalition were mainly perceived as one-way communication; there was a need for two-way communication (Hillebrand et al., 2018). One of the steps that has been made after the identification of this issue is the introduction of JIVE, an online platform for the DBC community. The JIVE platform was intended to allow for easier exchange of ideas and information. However, the platform is currently not perceived as a useful tool. The question remains: how to stay connected as a growing and moving assembly of partners?

## The question behind the questions: how to scale-up to a robust, adaptive network that utilises its tensions?

The why of the DBC seems broadly supported, but how to actualise these ambitions now the coalition is entering next levels of its evolution? The development of technology is inevitably connected with the development of the network; it is a hybrid. The development of blockchain needs to be regarded with a dynamic, collaborative view in which people, but also technologies, resources and concepts, continuously interact, always influencing one another. So how to scale-up, not only in the technical aspects of innovation but as a collaboration as well?

There are questions regarding the best next steps in the development of the collaboration of partners, concerning tensions related to differences in expectations, interests, ways of working and organisational cultures. How to use the potential of these tensions to grow? How to scale-up and develop a robust network that is able to deal constructively with tensions among partners, utilising their potential for blockchain innovation?

## 4 | Understanding innovation network dynamics

In order to be able to answer this question, it is essential to understand the dynamics of innovation networks.

### Continuously changing manifestations – essential for progression

In networked innovations such as the DBC is aiming for, the blockchain network and blockchain itself may be enacted in a myriad of ways. Lagendijk et al. (2018) use the concepts of (im)mobility and (im)mutability to describe these various ways. Mutability addresses the degree to which (a part of) the network is changeable or fluid. Mutable connections on the one hand allow adaptations of blockchain or the blockchain network by abstract, conceptual modes, while immutability on the other hand involves concrete, fixed and stable network elements. Mobility addresses the movement within network connections. Mobile connections are effective and efficient flows within the network, these connections support the realisation of concrete output. Immobile connections within the network are not about flow, but about impressions; they support affective relations within the network through sensemaking. The combination of these concepts leads to four types of connections, representing four manifestations that can be distinguished in healthy innovation network dynamics. These four types of connections can be compared by means of analogy to snow, clouds, water and ice.

*Figure 3*
*The immutable mobile as crystals of snow*

**Snow: an effective flow of crystallized particles**
In most cases, the main aim of network efforts is the formation of effective, stable and concrete results. If the efforts succeed, a stable network fuelled with the right resources, protocols, algorithms etc. will arise. Precisely attuned, perfectly crystallised, moving without disturbance. This immutable mobile can be a certain blockchain application ready to use or a team ready to take a new step. Every actor or object in the network is at the right place, doing the right thing to make it flow adequately; an effective flow of crystallized particles (fig. 3), concrete results as output of the network.

*Figure 4*
*The mutable mobile as a cloud*

**Clouds: fuzzy, abstract flows**
However, in order to be able to create such a concrete output, an idea needs to evolve. For example, a concrete prototype from one of the DBC's use cases might be tested, resulting in the need to go a few steps back in the process and to adapt the application. These iterations are necessary in the creation of new results, but also to be able to maintain a certain output, because contexts might change, needs might change, and interests might change. These cycles of adaptation ask for more abstract modes. Zooming out, letting go the attuned crystals, rethinking the more abstract considerations of the innovation. This is a process of making concrete forms fluid again to be able to improve them. This fluid moment is a mutable mobile (fig.4), particles moving in all directions, like a cloud, needed to develop and improve (new) results.

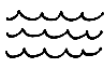

*Figure 5*
*The mutable immobile as water*

**Water: fluid opportunities for change**
In addition to the mobile, there is the mutable immobile connection. This immobile connection is not about the effective, but about the affective; it is not about direct impact and a concrete flow, but about indirect impact by making impressions. These impressions may induce interest among new stakeholders and might enrol them in the network and the innovation. These new involvements may lead to change in the network and in the objects of the network. Results are relatively uncertain and not yet concrete here: references and values may become present or stay absent in for example the media; different shapes are still possible (fig.5), like water in its liquid

stage. But one drop can cause big wrinkles in the water; these wrinkles may reach new partners and new perspectives on blockchain or the DBC, needed to feed the network with new input and inspiration.

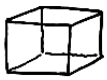

*Figure 6*
*The immutable immobile as ice*

**Ice: concrete moments of contagion**
Finally, network dynamics know immutable immobile connections. This is a moment of contagion: concrete, but affective. It is about closed events; meeting in real life. Objects are reshaped in the act of being together. By brainstorming, sharing ideas, by discussing themes, by creative ways of working. Here is where the sequence of wider communication starts; where ideas are born; where interest, enrolment and mobilisation is started. Those immutable immobile moments, solid like rocks of ice, are crucial for innovation networks; without this local contagion, there is no impact at a distance (fig.6).

The aim of innovation networks such as the DBC is to establish effective and efficient practices through the shaping of stable, concrete and effective relationships and results; for example the right relationships between the right partners, useful blockchain applications or effective protocols for these applications. However, the other types of manifestations are needed to create and maintain such an effective network. Every manifestation needs to be present in a healthy innovation network in order to make progress and to grow.

## A necessary mix of iterative and linear processes

These changing manifestations do certainly not represent a clear linear process, as we also know from the early onset of the DBC. Connections and results go back and forth between the concrete and the abstract; waver between the stable and the fluid, and move from the virtual -the to be actualised- to actual states and vice versa. Processes are iterative here; there is a certain degree of complexity and unpredictability that allows for the creation of new knowledge, ideas and perspectives, only possible to discover by changing and trying (fig.7).

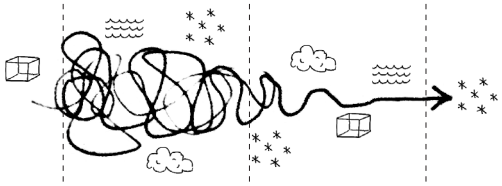

*Figure 7 Innovation: a complex process with both iterative and more linear characteristics.*

In the iterative early stages, the focus is on the creation of new knowledge, ideas and concepts. This phase benefits from open and informally organised relationships, exploring boundaries. More open networks, with loosely coupled, weak ties can build relationships with new actors and explore new knowledge sources, leading to new opportunities for the network (Valkokari, 2012). Within the DBC, the current workgroup structure allows for this needed degree of complexity and abstract explorations within the network.

The fuzzy process of exploration may lead to the development of specific ideas, concepts or prototypes. When working towards concrete output, closed and formal network relations become useful. A smaller group becomes closely tied, which is beneficial for the more bounded and linear process of the development of particular concrete results (Valkokari, 2012). The DBC's recently defined use cases are an example of these concrete processes, with a clearly defined topic, clear goals, working towards concrete applications of blockchain technology.

A healthy innovation network consists of both the iterative and abstract stages as well as the more concrete and linear stages; a network can be regarded as a intertwined collection of such processes with changing manifestations (fig.8). Fluid concepts need to be developed into concrete prototypes or concepts in order to move forward. But the concrete results may need to be become fluid again after a certain period of time, when new insights arise or improvements are needed. In the words of the analogy: ice brings forward crystals of snow; snow sometimes needs to become a cloud again; clouds may need to become water; water needs lead to snow again; vice versa and on and on.

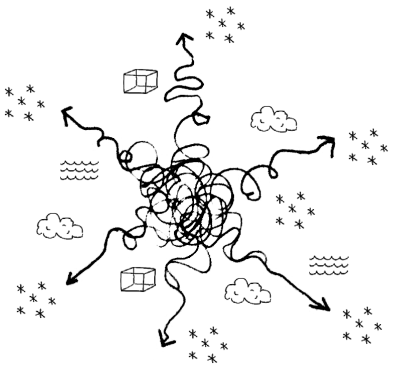

*Figure 8 Innovation networks: both fuzzy, iterative and concrete, linear processes*

## 5 | Developing a robust, adaptive network

It is exactly this flexibility that needs to be understood to get a grip on a collaborative network such as the DBC. But how to nurture an ecosystem of divergent, dynamic parallel processes and manifestations? How to translate this flexibility into an adaptive, but durable and robust whole?

### A focus on the human measure

The level of human interaction is key here. As highlighted by Iansiti and Lakhani in the Harvard Business Review, transformative innovations are complex processes which need quite some time, including many intermediate steps. These steps, with their continuously changing manifestations, are the result of the relations and connections between parties and people investigating, using and discussing blockchain. This is where knowledge, beliefs, thoughts, dreams and identities of individuals within the network grow. People are the engine of the network dynamics; the level of human interaction – collaboration - is the motor to steer a network.

### Learning as a guiding principle for network interventions

The development of collaboration is only done by collaborating itself; it is done by trial and error. While moving, consequences of this movement become evident; this is the way to get forward. Therefore, making collaboration and network dynamics explicit is essential to understand the coalition's transformative development. Reflecting on and learning from this explicit dynamics becomes key in the process.

Through this process of learning, tensions can change. Network connections, structures, knowledge, thoughts and beliefs might change from one manifestation of water to the other.

Learning is the link between the concrete and the abstract, between the virtual and the actual, between de stable and the fluid manifestations. This means that partners change their behaviour while staying connected at the same time. This does not necessarily entail that partners agree with each other, but it means that they are willing to change in interaction with each other, necessary for innovation.

With these essential learning loops, a third type of process is introduced to the network dynamics, connecting the other processes (fig.9). By facilitating learning cycles, concrete initiatives, projects and results feed the discussions on more abstract issues related to blockchain applications. These abstract discussions or ideas, in return, are input for the development of (new) concrete concepts and applications. In this process, the network is not fixed, but it changes continuously for learnings sake. A focus on the facilitation of continuously learning through social network interactions provides a sustainable perspective on the steering of the DBC's network dynamics.

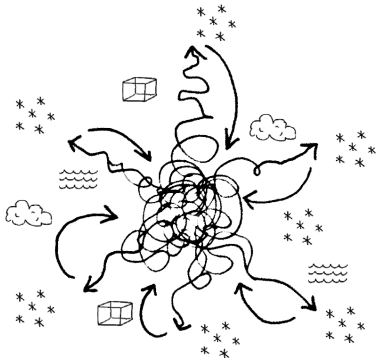

*Figure 9 Sustainable innovation networks: facilitating learning as the link between processes*

## Utilising tensions with three key network processes

The three processes each require their own steering and support:

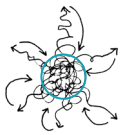

*Figure 10 Facilitating complexity*

**Iterative explorations: facilitating complexity at the heart of the network**
Iterative explorations are needed to proceed the DBC's processes of innovation; as the heart of the network (fig.10). The open, loosely coupled relationships that are useful for these processes are more advantageous to knowledge exploration, but involve higher uncertainty and are harder to manage (Valkokari, 2012). Concepts such as agile working are not useful here. Management benefits from a focus on dealing with uncertainty by making the various tensions in the network explicit, as well as the decisions on these tensions. Tension does not need to be avoided, but constructively effectuated by exploring complementing knowledge, skills, resources and so on. Leadership means the facilitation of these boundary encounters. Trust is built by accepting a certain degree of complexity and the common agreement to be committed to learning together.

*Figure 11 Stimulating concrete initiatives*

**Concrete initiatives: supporting the limbs of the network**
As a result of explorative stages, more concrete ideas or initiatives arise (fig.11). Traditional business governance models that do not work in the explorative stages might be beneficial here, within the smaller groups. Leadership, therefore, means to allow for a certain degree of autonomy for these temporarily closely tied groups. Letting go is essential; the actors need autonomy to be able to speed up the process and to create concrete results.

Allowing to let go might mean that partners move to the edges of the network or even leave their position as partner at the heart of the network. These movements are natural for an innovation network. The goal of the coalition is to accelerate transformative blockchain innovation, not necessarily to keep everyone on board. The open space a company leaves behind will be taken by someone else. In the meantime the name and philosophy of the DBC is brought into new circles of parties and influence by the parties who go on. The philosophy of the DBC is spread; which is needed for a transformative movement in the blockchain realm.

*Figure 12 Creating learning cycles*

**Learning cycles: continuously nurturing the network**

Giving autonomy to concrete initiatives does not mean to end connections. It is important to create feedback loops from the concrete initiatives to nurture fruitful complexity at the heart of the network again (fig.12). The learning cycles are the link between the different types of processes that are going on, often at the same time. The loops are key in keeping the network adaptive, robust and relevant. The DBC is the link between them all, facilitating (new) connection and reporting on the results of these connections as well.

## Exemplifying case from the DBC's practice

*An interesting example of the DBC's network dynamics is the recent initiative around SSI, from the first action line of the DBC, the action line on digital identities. During a lunch meeting with partners involved in blockchain innovations related to digital identities, the idea arose to establish a new committee. In order to speed up, to make bigger steps and to be more effective with the implementation of ideas, this committee proposed a new entity for collaboration around the theme of digital identities.*

*This initiative, however, has been received with ambivalent feelings by the DBC management and some members. Yes, such a collaboration seems to be effective; but doesn't threaten such a 'separate identity' the cohesion within the coalition? There are doubts about the initiative, fearing a 'go-alone' image. Such a new entity within and at the borders of the coalition might cause tension among the coalition partners; partners may feel excluded.*

*This example shows both the dynamics of a network and the challenge of scaling-up as such a network. At the end of the 'network tentacles', the edges of the network, new connections are being made and ideas meet concrete opportunities, an interesting and valuable result of the DBC's efforts. In this case, the very concrete event of lunching together facilitated the emergence of such an opportunity -a typical 'ice manifestation'. These dynamics at the end of the tentacles are relatively isolated from the rest of the developments in the network. Their concrete nature makes them bounded and focused. A network needs these type of concrete initiatives to make steps forward.*

*These changes, however, can also be perceived as threatening to the coalition. And yes, they may indeed be threatening, in the sense that the coalition will not remain the same and tensions -which often are already there- suddenly become apparent.*

*It is therefore important for the DBC to make these tensions explicit, in order to explore and define its network's needs; to be able to support the initiative's group as well as to use it as an opportunity for the network to learn.*

*In this case, the DBC has chosen to support the initiative by offering project management as well as to create connections between the initiative and the DBC's board in order to keep up to date. Further developing a strategy on how to support and learn from such groups, offers the DBC an opportunity to practice and strengthen its value in the support of collaboration, the motor to steer a network.*

# 6 | The Dutch Blockchain Coalition for transformation

The DBC has taken up the challenge to develop blockchain applications that transform business, government and society. This is definitely not just a technical challenge. The successful development of innovative technical blockchain applications is intertwined with the successful development of a blockchain network that facilitates these collaborations. Developing a robust and adaptive network with the conditions for successful transdisciplinary collaborations, therefore, is an innovation in itself.

Key in this innovation for the DBC is strengthening its ability to perpetually stimulate, facilitate and nurture the divergent processes within the network in which blockchain itself and the blockchain network are continuously enacted in changing ways. Creating a network with this flexibility and adaptiveness requires a focus on the human measure. The level of collaboration is where knowledge, beliefs, thoughts, dreams and identities of individuals within the network change and grow and where innovation of both technology and network takes place.

Learning is the guiding principle in these developments, enabling change among and between partners and connecting the diverse manifestations and processes within the network. A commitment to learning makes the network adaptive and flexible, while it also guarantees that the network is continuously being nurtured, leading to a durable blockchain ecosystem. To strengthen the DBC in its scale-up as such a resilient network, it is recommended to:

## I Make the development of the DBC's collaboration model integral part of the coalition's innovations

The DBC is challenged to develop a suitable collaboration model for its networked innovations; this is an innovation in itself that needs to be integral part of the DBC's innovation agenda. It is recommended to structurally implement reflection on the collaboration model in the DBC's activities, to further develop the organisation, also when it enters new stages again.

- **Increase understanding of innovation network dynamics**
  Increasing knowledge and awareness on network dynamics could be helpful in this case. The practice of a network differs from traditional practices within most organisations. Network practices might feel messy and unstructured for their members; while exactly these messy processes are part of healthy networks. It is recommended to enhance the understanding of network dynamics within the coalition, to increase knowledge of its dynamics, its divergent processes, its uncertainty, its challenges and needs.

- **Further develop the collaboration model by integrating the three key network processes**
  Regarding the collaboration model, a useful step would be the explicit integration of the three different processes that a healthy network includes. The iterative processes, linear processes and learning processes have divergent needs that require distinct input, resources, support and organisational structures. Further develop the DBC's organisational model and governance based on these distinct needs. Diversify the current model to become a resilient network -not as a homogeneous body, but as an entity with various types of collaborative processes parallel to each other.

## II Strengthen the DBC's role in light of the network's needs

The DBC's management is key in the development of the network and its collaboration model. By continuously exploring and defining the network's needs and shaping its next steps, the DBC's management nurtures, guides and guards the network, creating the needed conditions for collaboration and blockchain innovation. It is its motor. To strengthen the network, this value and role is recommended to be more tangibly and explicitly present within the coalition.

- **Profile the DBC as the actor who develops the essential network conditions**
  Current value of the DBC seems to be mainly communicated with a focus on concrete results from activities within the coalition. These results are important to celebrate, but do not cover the broader backbone value of the coalition. The DBC's efforts to facilitate, nurture and steer the network are important to highlight as well; these efforts are key, it provides the base for members to innovate together. It is recommended to strengthen the DBC's identity and role by making its value and role in network development core of the DBC's attitudes, activities and messages. Concrete results are illustrating the value of this core, not the core itself, contributing to a clearer role and identity.

- **Concretise the tasks and values of this profile**
  This network identity, building on the core value of nurturing and facilitating the network to evolve, can be translated into concrete value. The value of the coalition for members and the network is different for each of the network processes; the DBC can support the concrete, linear processes; stimulate and initiate the abstract processes and be leading in the creation of feedback loops and learning. Beyond the general value of bringing people together, it is recommended to concretise, define and communicate these roles. This helps the network to grow as well as it strengthens the profile of the DBC.

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### III Invest in (the development of) tools and methods to support the different types of collaborations within the DBC.

Thirdly, it is recommended to invest in (the development of) tools and methods that support the various processes within the network, supplementing the DBC's current activities and enhancing the DBC's opportunities in network development.

- **Further investigate tools for community management**
  Tools for community management, for example, are relevant. Community management, including the learning loops essential for nurturing the community, is a big challenge. There is no satisfying practice for that right now. Further research on a community management platform should stimulate its contribution to two-way communication, community feeling, clarifying tensions and building the network.

- **Develop tools to reflect on collaboration readiness, tensions and needs within teams**
  Additionally, the DBC can invest in methods and tools to shape their divergent roles in the different network processes, supporting these processes. For example a tool to elicit tensions and needs of collaborating teams within the network. Common tools only support evaluation afterwards; while a tool that reflects on the needs of a team during the collaboration helps to formulate the needed next steps for such a team.

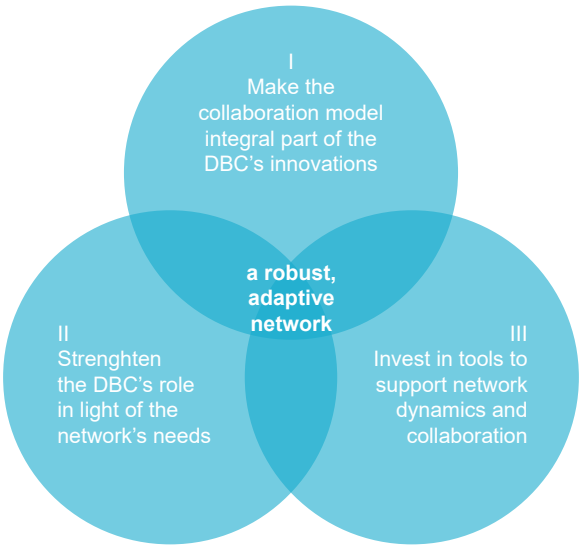


*Figure 13 Three recommendations supporting the development of the DBC's network*

These three recommendations each support the scale-up of an increasingly resilient, robust and adaptive blockchain network. Creating such an adaptive network means facilitating complexity and more detailed processes at the same time. It means no consensus all the time, but exploring boundary tensions. It means no certainty, but a commitment to learning There is much potential within the DBC's network. If the coalition explicitly adresses the process of network innovation, concretises its value in the light of these essential developments, and invests in the means to further bring its value into practice, the DBC will be ready to unfetter this potential. With a robust and adaptive network, the DBC will be able to move towards transformative blockchain innovations.

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