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# Stumbling Blocks in Network Digital Transformation - Dutch Floriculture Supply Chain Case

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# **Stumbling Blocks in Network Digital Transformation - Dutch Floriculture Supply Chain Case<sup>1</sup>**

*Completed Research Full Paper*

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## **Abstract**

Often, failure to achieve success in network digital transformation is not the direct result of technological error but is largely caused by organizational problems. This study aims to identify and confirm the problems that lead to failure in the evolution of network digital transformation. We use network governance dynamics to explore a failed case of network digital transformation in the Dutch Floriculture Supply Chain and thus contribute to eliminating the survivor bias. The network digital transformation idea – named the HubWays' platform – emerged in 2008, and the legal governance entity was eventually dissolved in 2019. This study confirms that governance evolves together with the digital platform implementation steps. Our longitudinal analysis shows that the problems in the network governance design – i.e., the lack of resources, the politics, the complex structure, the issues in change management, the conflict management, and the involvement of the IT provider on the Board – all contributed to the collaboration failure.

## **Keywords**

Platform, governance, supply chain network, network digital transformation.

## **Introduction**

Digital transformation includes the redesign of business processes enabled by technology. Digital platforms – a technology-based service that connects user groups and facilitates their interaction in achieving a greater goal (Bonina et al. 2021; de Reuver et al. 2020) – are trending to support collaboration of organizations. The digital transformation phenomenon emerges globally (Mahssouni et al. 2023), especially in supply chain industries (Gartner Inc. 2023). Under the influence of this trend, organizations extend their internal integration to collaborate with external parties. Simultaneous competition and collaboration, also known as co-opetition, have become businesses' main strategy. Digital transformation in co-opetition networks may bring immense benefits: agility, data sharing, operational excellence and opportunities, such as a new business model in intermediary services (Duch-Brown and Rossetti 2020; Van Hillegersberg et al. 2012). For example, Amazon co-opetition with sellers strengthens Amazon's position as a supply chain hub, enhances the overall businesses' agility through customer data sharing, and provides smaller sellers with a reliable digital platform (Brandenburger and Nalebuff 2021).

However, several studies describe the high probability for limited success in network digital transformation. Adopting technology and change management in the network layer is complicated, time-consuming, and prone to failure (Zhang et al. 2016). Co-opetition demands technology to support digital transformation

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<sup>1</sup>This academic article is based on the first author's doctoral dissertation.

with flexible yet controlled digital platforms. Consequently, the mediation and extensibility of digital platforms' services lead to their benefit and risk uncertainty, which impact the networks' organizational structure (de Reuver et al. 2020).

To solve this predicament, researchers tend to pace forward to drivers and barriers (Jones et al. 2021), transformation strategy (Margiono 2021), and other guidelines for inter-organizational collaboration. Literature studies (Bonina et al. 2021; Kraus et al. 2021; Vial 2019) emphasize the need to zoom in and study the intricate relationships to clearly understand the reasons of failure in digital transformations. An extensive literature study (Vial 2019) highlights the dynamic nature of digital transformation, "The ability for firms to design mechanisms that enable repeatable, continuous adaptation in spite of such rapid changes is an important question."

Most literature exploring the dynamic nature of digital transformation is still limited to a single organizational context and focuses on successful networks that have been collaborating for a long time. Kurtz et al. (2021) conducted a longitudinal analysis of business model transformation due to digital innovation. A study by Warner and Wäger (2019) describes dynamic capabilities building as a core strategy for incumbent companies. Chandra and van Hillegersberg (2018) investigate a collaboration of supply chain companies in the Port of Rotterdam. Thus, despite the advancement in literature, we argue that there is a potential risk for survivor bias. This study fills in the research gap by examining a failed network digital transformation case.

We contribute to the scarce research that uses the organizational network as the unit analysis, and broaden knowledge on the complex context of network co-opetition in a failed digital transformation case. Many researchers propose lists of barriers in digital transformation (Jones et al. 2021), yet most of these research focus on a single organization level of analysis. The unit of analysis in this study is a network consisting of more than two organizations connected by digital platforms. A dyadic relationship between two firms is excluded from the research scope.

Often, failure to achieve success in network digital transformation is not the direct result of technological error but is an impact of a mismatch of network structure, unfit value model, and other organizational problems (Jones et al. 2021; Vial 2019). Transformations enabled by technology implementation must address organizational governance challenges (Gopalakrishnan et al. 2022; Shao et al. 2021) to coordinate the collaboration (Markus and Bui 2012; Provan and Kenis 2008). Furthermore, a network evolution results from intertwined interactions between platform technology and the network's governance (Tiwana 2014a). Thus, this study aims to identify the problems that lead to failure in the evolution of network digital transformation by analyzing collaboration governance. We use network governance dynamics to explore a failed case of network digital transformation and contribute to reducing the survivor bias.

## **Governance in Network Digital Transformation**

Definitions of governance are converging – governance is about coordination acts (Markus and Bui 2012; Provan and Kenis 2008). The designed governance coordinates the relationships between organizations inside the network and between those organizations and other stakeholders (Aggarwal et al. 2011).

Studies in network governance use diverse frameworks to analyze cases and present theories. Evolution in digital transformation is identified as a continuous process. Studies on digital platforms and their impact on digital transformation emphasize the evolution of collaboration governance (Tiwana 2014b). However, most studies analyze collaboration governance at a certain time and situation. To explore the evolution of collaboration governance as a continuous process, it is imperative to be clear about the cut-off of each phase in the process. We propose to use a phased framework to break down the complexity of this transformation and dissect the governance concept into aspect and mechanism dimensions. These governance aspects and mechanisms may be changed and adapted during each phase in a lifecycle. Thus, exploring a governance model in a collaboration is intertwined with the digital transformation of the collaboration itself.

### ***Governance Phases***

Chandra and van Hillegersberg (2018) and Lowndes and Skelcher (1998) analyze a collaboration as a dynamic entity and propose a lifecycle paradigm. In each lifecycle, there are four phases (Lowndes and Skelcher 1998), which are:

- *Pre-partnership collaboration phase* is the initiation of a collaboration. Communication and informal governance are the keys for this phase because often a formal structure has not been established yet.
- *Partnership creation and consolidation phase*. At the beginning of this phase, a collaboration establishes a formal structure with a legal form or an informal network-like structure. The digital platform is developed and prepared to be used by the organizations.
- *Partnership program delivery phase* is the core of a lifecycle. A collaboration was built to achieve a goal that is rather difficult to achieve individually by the organization. The platform's real benefit will only be achieved through daily use of the systems within the collaboration.
- *Partnership termination or succession phase* is the last milestone to indicate whether a collaboration is a success or a failure in the lifecycle. A collaboration may be terminated due to a failure to achieve the value promised at the beginning of the lifecycle. A succession means the governance is going through significant changes, and the network will enter a new cycle.

### ***Governance Dimensions: Aspects and Mechanisms***

Dynamic changes in the governance design can be identified in each phase. A relevant framework by Tiwana (2014b), limits the network governance into three dimensions, i.e., decision rights, control (over gatekeeping, metrics, process control, and relational control), and pricing. This explanation of network governance is too narrow and ignores advanced studies in the governance for business networks. We use a framework by Chandra and van Hillegersberg (2018) that uses a combination of governance aspects and mechanisms to explain the existing governance for a collaboration with different categories of stakeholders.

Markus and Bui (2012) interpret a governance design for IOS-based collaboration as a combination of aspects. The governance aspects are membership, capital investment and operational funding, decision making, data governance, governance entities, equity owners, and board composition. Specific possibilities in the governance aspects arise in conjunction with technology usage. For example, Bonina et al. (2021) identify sources of operational funding for networks with digital platforms: users' access fees, fixed licensing fees, commission fees on direct and complementary transactions, and advertisement from third parties. Another study on the sharing economy (Hagiu and Wright 2019) highlights the consideration and classification of membership status for stakeholders in digital platforms.

Governance mechanisms include both formal and informal mechanisms. Roehrich et al. (2020), Arranz and de Arroyabe (2012), and Alvarez et al. (2010) focus on complementary formal and informal rules of exchange between actors. An informal or formal governance design may be established in governing digital networks. The firms interact and design their governance using personal contacts, a legal structure, and a set of procedures to achieve governance that fits their situation. In the case of network digital transformation, the formal control mechanism is not limited to terms and conditions in contracts. Technology, such as the development ecosystem and API (Application Programming Interface), has become a mechanism to control platforms and their functionality extensions (de Reuver et al. 2020).

### **Case Study and Research Method**

A single longitudinal case study is executed to address this study's focus on a failing case of network digital transformation. The case study selection was based on the collaboration's magnitude and timespan. We require a collaboration, a network of organizations, which enable co-opetition. The collaboration has to show complex relations over a period of time that is not too short. These criteria led us to HubWays, a Dutch Floriculture Supply Chain collaboration.

The history of the Dutch Floriculture Supply Chain collaboration started from the vision to maintain the Netherlands' role as a main player in the European floriculture industry. Dutch floriculture industry is economically enormous (van der Vorst et al. 2016; van Veen and van der Vorst 2011), and its supply chain is covers the worldwide market (Royal FloraHolland 2019). The stakeholders in this network are growers, auctions, traders (importers, exporters, and wholesalers), Logistics Service Providers (LSPs), and outlets/buyers (van der Vorst et al. 2016). In the Netherlands, Royal FloraHolland organizes the international floriculture marketplace (Royal FloraHolland 2020) and coordinates six marketplaces (Greenports) all around the Netherlands. The Dutch Floriculture Supply Chain is a co-opetition network, which enables the competing stakeholders to collaborate in the commerce and supply chain activities.

The digitalization attempts in Dutch Floriculture involve e-auctions that support remote transactions (van Veen and van der Vorst 2011; Veen Streek 2011) and efforts to introduce a centralized platform for integrated information sharing in this network. One of the promising recent platform initiations was HubWays. Hubways started as a project and later transformed into a legal entity – HubWays NV. However, HubWays NV was eventually dissolved, and the platform was never fully implemented. Until now, an ideal industry-wide collaboration has not yet been created in the Floriculture network. This unsuccessful story of collaboration and governance transformation has lasted for 11 years and is an excellent opportunity to learn from failure.

Four formal interviews and several informal meetings were done to collect data and opinions from 2014 until 2020. The formal interview followed specific protocols and were recorded. Our interviewees are (1) the Director of HubWays NV (2013-2015), (2) FloraHolland's Supply Chain Development Manager (2008-2013), which was promoted to be the Supply Chain Manager (2014-2015), (3) HubWays' Project Manager (2010-2013), and (4) the Managing Director and Founder of Eyefreight (2008 – 2020). Data are analysed using the phase framework. We identify events and statements regarding governance aspects and mechanisms to arrange the timeline. Then, we check for contradictory statements. For each contradiction, we search an additional source, for example reports or confirmation statements from the interviewees. Next, we analyse four recordings and transcriptions, a numbers of coresspondences, a company report, and 15 other secondary data sources.

## HubWays – A Dutch Floriculture Network

This section describes the Dutch Floriculture Supply Chain case according to its timeline (Figure 1). In the first phase, HubWays was initiated as a temporary project to establish a legal collaboration. The successful result was HubWays NV's establishment in 2013, despite the emerging problems reflected in the one-year delay. However, HubWays NV ultimately did not succeed to implement a platform for the Dutch floriculture network.

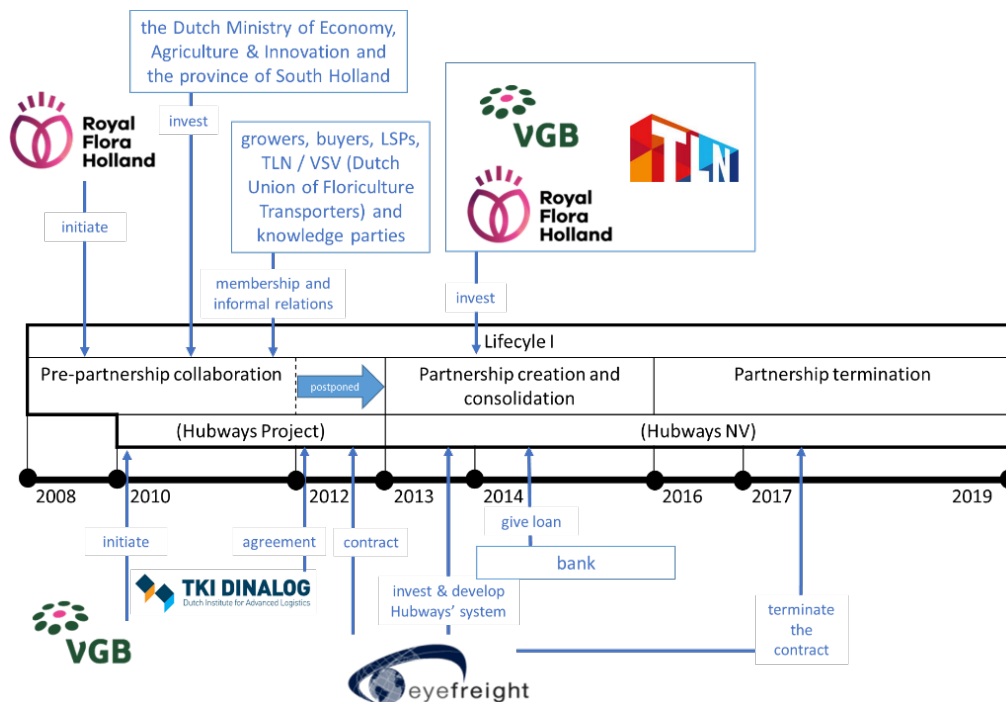


Figure 1. The Governance Lifecycle of the Dutch Floriculture Supply Chain

### The pre-partnership collaboration phase: HubWays Project

Royal FloraHolland was the initiator of the HubWays Project. In this phase, FloraHolland noticed the supply chain bottleneck problem at the auction's beginning and end. FloraHolland's Manager recalled that

the idea of a centralized platform had been discussed since 2008. The platform was envisioned to manage the data transfer between stakeholders in this industry. The HubWays initiative was established as a neutral project entity to promote collaboration between stakeholders. HubWays' research and development project started in January 2010 and ended in October 2013 (HubWays NV 2020). This project was funded by the Dutch Ministry of Economy, Agriculture, and Innovation together with the province of South Holland via the Pieken in de Delta (PID) program (van Veen and van der Vorst 2011; Veen Streek 2011).

In this project's structure, the project manager coordinates the project group – which consists of the stakeholders in the floriculture industries – and the sounding Board – which consists of the organizations that represent those stakeholders. This project is mainly supported by informal coordination and networking. "There is no legal binding in that (project) structure," states FloraHolland's Manager. The early partners, 24 companies that were growers, buyers, LSPs, auctions, and knowledge parties, decided that the project's main goal was to build a neutral collaboration of companies (van Veen and van der Vorst 2011).

One of HubWays' issues was to convey the platform's benefit to the stakeholders in the Floriculture industry. HubWays' Project Manager stated, "In principle, this industry (consists of) a lot of enemies, a lot of entrepreneurial directors. And they only will step into something if it has a direct advantage for themselves." Since the beginning, LSPs have been reluctant to join the collaboration because efficient logistics could reduce their revenue. HubWays identified this problem quite early on and made a statement about this in their goal to "reduce the chain costs with at least the same return for logistics service providers" and "increase the quality (flexibility, speed, reliability) of logistics services" (Hubways 2012). Through this purpose statement, HubWays tried to convince LSPs that they would gain benefits by joining the platform.

HubWays' platform was designed to "enables logistical collaboration between supply chain partners for exchanging capacity, load, and information" (van Veen and van der Vorst 2011). On top of the conceptual design, the HubWays project also tested the business case and proved that the designed platform's benefits fit with the floriculture stakeholders. HubWays project managed to prepare a solid foundation for the next phase. "The whole business model was developed," HubWays' Project Manager. The revenue model was already arranged. In the end, the HubWays project achieved its objective of formalizing the collaboration.

In 2012, Eyefreight joined the collaboration. Eyefreight was an IT company<sup>2</sup>, the HubWays platform developer. One of the main criteria in the vendor selection was a standard solution enabling a quick-win project. Later, Eyefreight was involved in the establishment of HubWays NV. The founding process was not smooth. Eyefreight 's Director recalled an uncertain moment, "In 2012, we were done with the contract. What happened there, it was not established." Originally, HubWays was designed to be owned only by stakeholders in the floriculture industry. However, Eyefreight became a strategic partner and an owner in the next phase. The Director of Eyefreight revealed that in the beginning, this idea was rejected by Eyefreight due to their negative experience in a similar arrangement in the past. Still, the idea was later accepted because the other stakeholders pushed the idea as a condition for Eyefreight to get the job.

Hubways creation was postponed from 2012 to 2013 due to conflicts between the stakeholders. At the end of 2012, there was a conflict between FloraHolland and the LSPs. "By the time that (the disagreement between FloraHolland and LSPs – TLN/VSV) was solved, unfortunately, FloraHolland increased their fee to the traders (which were represented by VGB)," Eyefreight 's Director. Consequently, at the beginning of 2013, another conflict between FloraHolland and the traders needed to be cleared up.

Due to the conflicts, several issues emerged. The platform development was started, and later, a temporary hiatus was taken without a significant result. Moreover, Eyefreight 's platform was proven to be unsuitable for HubWays' requirements. HubWays eliminated the concept of 4PL and was designed as an information hub. "We slowly started to work on some stuff, but we could not refer to anyone. It was hard. We had to restart at the end of 2013," Eyefreight 's Director.

Despite the internal tangled collaboration, HubWays started to work together with TKI Dinalog (Dutch Institute for Advanced Logistics) in 2013 (TKI Dinalog 2019). This partnership strengthened HubWays' connection with Dutch research and academic parties. This early work became a foundation for the relationship between the newly established company and the research and academic parties.

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<sup>2</sup> Eyefreight was acquired by Elemica.com in 2020

### ***The partnership creation and consolidation phase: HubWays NV***

HubWays NV was established as a legal organization in 2013 (Hamersveld 2014; HubWays NV 2020). FloraHolland was still the main initiator of this company. HubWays NV had a steering group with key representatives from all the stakeholders, including an independent academic as the chair, who was responsible for making key decisions (van der Vorst et al. 2014). Based on the legal arrangement, the owner of HubWays NV was an entity – STAK (Foundation of Administrative Office). STAK is a form of legal foundation based on Dutch legislation so that the owners can not immediately influence the company's director. It divides the rights of owners to get profits and to make decisions based on certificates. A STAK is established to accommodate the stakeholders in the network: (1) FloraHolland and growers, (2) VSV and the logistic providers, (3) VGB and the buyers (the traders), and (4) Eyefreight. RvC is the Supervisory Board for HubWays. HubWays NV's structure was designed to give more independence to the director compared to other regular companies. "It was quite a well-organized structure in the legal framework. We have politics, and we have the entrepreneurial HubWays Director. They need to be together in the same room but not be influenced too much", said HubWays' Project Manager. Until the end of the cycle, HubWays NV was the only legal company established in this collaboration.

Hubways NV was funded by a bank loan and a small fraction from a bank's free funding. In the beginning, the company's capital was almost symbolic. Even HubWays NV could not pay the Director's salary directly. The bank loan and funding were finally received by HubWays' Director at the beginning of 2014, "5 months later, I finally got money from the bank because I needed all 22 signatures of all involved parties." Therefore, HubWays did not employ permanent subordinates. From the beginning, HubWays NV was designed to get revenue from the fees paid by the floriculture stakeholders. These fees were planned to be collected after the platform was implemented. Basically, the fees were:

- Categorical fees. Growers and LSPs would pay HubWays based on the size of the companies. The company's size was measured based on the company's revenues.
- Standard fees. FloraHolland, import handlers, and buyers would pay a standardized amount.

In 2014, twenty-five SMEs joined the project (van der Vorst et al. 2014). The initial plan was to build the pilot platform in 2014 and start operating the platform in the fourth quarter of 2014 (Weerd 2013). By 2015, the first part of the platform was ready and tested in November 2015 (VGB 2015a). The pilot involved 40 parties (TKI Dinalog 2019). The pilot testing included several operational scenarios, i.e., the digital logistics messages processing, the mobile app, and the HubWays web platform (VGB 2015a).

HubWays' mobile and web platform connected growers, traders, and logistic service providers (Floricode 2015) by supporting information flows (1) transport orders: ETO and EPB (Electronic Packing Order Message); (2) transport order confirmation; (3) transport planning; and (4) real-time transport status information: ELS (Electronic Logistic Status). The HubWays platform gave information about the progress of all transport orders regarding what is in the order, when the order is expected, and on which dock the order will come in (VGB 2015a). Moreover, HubWays also offered interfaces with other systems through Floricode which ensured that XML and EDIFACT messages sent between applications conformed to the technical and business standards (Floricode 2015).

### ***The partnership program delivery phase***

Two years after HubWays NV's establishment, the platform had not yet been completed. The politics in the HubWays NV partially caused this lateness. "They (the IT provider) did not deliver what they promised. But on the other hand this is because the LSPs were frustrating the process," said FloraHolland's Manager. Thus, the Dutch Floriculture Supply Chain Network did not manage to enter the partnership program delivery phase.

### ***The partnership termination phase***

By the end of 2015, the HubWays project officially stopped (TKI Dinalog 2019; VGB 2015b). The standardization of ETO, EPB, and ELS messages turned out to be challenging in practice, depending on the integration with the traders' information system (such as ERP packages) (VGB 2015b). This issue was more difficult for a large and fully automated trader – "HubWays for larger parties will only work if there is full

integration with their systems. For parties with a low degree of automation, the HubWays platform is a sufficient solution," HubWays 's Director (VGB 2015a).

The collaboration was floundering. The relationship between HubWays NV and Eyefreight was deteriorating in 2016. According to Eyefreight 's Director, HubWays NV sued Eyefreight in 2016 for the undelivered solution. However, the lawsuit was rejected, and they reverted to mediation. In 2017, both parties decided to terminate the contract between Eyefreight and HubWays NV. In February 2017, the Director was replaced (Drimble 2020). The change was one of the steps to stop the operation of HubWays NV. HubWays NV was dissolved on May 2<sup>nd</sup>, 2019 by a board meeting decision (Drimble 2020).

## **Discussion**

This study contributes to longitudinal understanding of network governance and contributes to the literature in this area (Roehrich et al. 2020; van Hillegersberg and Chandra 2020). Our data cover more than ten years of the lifetime period of the Dutch Floriculture Supply Chain Collaboration (2008-2019). We find that using the lifecycle framework gives a meticulous insight into the dynamics of the Dutch Floriculture Supply Chain Collaboration. Previous studies (Chandra and van Hillegersberg 2018; Chandra and van Hillegersberg 2019; Fedorowicz et al. 2018; Markus and Bui 2012) collected data from successful collaborations. The phases and lifecycles that are identified in these studies are still ongoing or are only captured at one point in time. The cycle in our failed case is substantial empirical proof that even though the primary sequence of the phases from Lowndes and Skelcher (1998) was maintained, jumping from one phase to another next-in-line phase is possible. In this case, the reason was that the incomplete platform was not implemented, so HubWays NV did not start the partnership program delivery phase. We identify some problems that led to the end of Dutch Floriculture.

This collaboration initiated the HubWays Project to implement digital platform in pursuing digital transformation. The ideal goal was that the potential benefits to the sector exceed the sum of the individual benefits. However, this idealistic idea has yet to be achieved in the case of the Dutch floriculture sector. "Collaboration will not work without a good governance structure in which pain and gain sharing is defined" (van der Vorst et al. 2016). This study confirms that the governance was designed according to the needs of the collaboration over time. Yet, the design may be too late or unsuitable for collaboration.

After the first phase, the pre-partnership collaboration phase, in the lifecycles of the Dutch Floriculture Supply Chain, the HubWays project structure evolved to HubWays NV. The HubWays project successfully established a legal entity. There is a change in the governance mechanisms from informal contacts to a structure with legal terms and contracts. The change supported the collaboration's need to develop and operate the platform in partnership with Eyefreight. The legal structure also adopted a vision to involve all stakeholders in the floriculture network but still limit their influence. This finding supports the idea that network governance is intertwined with the technology – digital platform – development. The legal establishment of HubWays NV resulted in significant differences. Those differences are observed in formal governance mechanisms, capital investments, and governance entities, which include the entities' owners and board composition.

The collaboration failed to make use of the developed digital platform. The technology was developed and managed to launch the pilot version. This network's timeline in Figure 1 does not show the partnership program delivery phase because of the failure to implement the platform. The first obvious problem is the unfinished software. Thus, the first blame was pointed to the IT vendor – Eyefreight. The IT provider encountered problems with the data governance and the software architecture. A study by van der Vorst et al. (2016) specifically mentions the importance of data governance, i.e., data ownership, data reliability, and security, for the success of collaborations. One of the crucial factors in the failure of HubWays is the lack of resources. The HubWays' Director was almost a single fighter in the execution of the idea. Moreover, the budget was also limited. The change management was also inadequate during the partnership creation and consolidation phase. After their long and deep involvement in the HubWays project, FloraHolland's Manager and HubWays Project Manager were neither appointed to serve on the Board nor as the Director.

The stumbling block that became apparent now for HubWays has been predicted since the beginning of this collaboration – "HubWays can only succeed if we have a good concept that is widely accepted. The second is probably more difficult than the first. Changing people is more difficult than convincing people of the content," HubWays' Project Manager (Veen Streek 2011). The bottom-up approach was designed to address



the involvement issue. However, later on, the governance that was built based on this bottom-up approach backfired. In the HubWays Project, politics was avoided since the beginning, yet they still fell into this issue. The former project manager confirmed the political challenge for HubWays' Director: "I think we have underestimated the political context in which the director had to work." Eyefreight's Director and the HubWays' Director also pointed out the political challenge. LSPs kept stressing the collaboration, and HubWays failed to manage the haunting conflict. The issue became a snowball effect that brought the development to a delayed time plan. The complexity of the legal governance structure was a challenge. "A large part of the budget for the start of Hubways was spent on the legal structure," said Eyefreight's Director. Moreover, this complexity also affected the operation of the collaboration. For example, the initial capital was delayed because the HubWays' Director needed to get signatures from 22 different parties involved in the collaboration. The involvement of Eyefreight in the HubWays' Board brought an unexpected drawback. In addition, during the two years of the digital platform development, Eyefreight got a new Director. The change shifted the IT company's focus from the HubWays platform development. Even though governance mechanisms are desirable to minimize risk and smoothen the collaboration, the actual implementation is a challenge due to the nature of network digital transformation (de Reuver et al. 2020).

## **Conclusion**

This study's goal is identifying the problems in the evolution of network digital transformation by analyzing the governance states. This case is an empirical demonstration that governance evolves with the steps of implementing the digital platform. The longitudinal study shows that the problems in the governance design – i.e., the lack of resources, the politics, the complex structure, the issues in change management, the conflict management, and the involvement of the IT provider on the Board – contributed to the failure at the end of the collaboration. These governance issues exacerbate the technical issues that emerged. On top of the empirical contribution, our study also contributes to developing the theory of inter-organizational governance for networks during their digital transformation. The phases and lifecycles framework give us a structured perspective to study network evolution. The phases in each cycle do not have to be complete and may overlap. In other cases, skipping a phase will also be possible if a major event takes place – for example, a legislative enactment that changes the industrial environment, a withdrawal of a major member from the collaboration, and a sudden change in the collaboration's financial arrangement.

This case study is a good test for applying the governance framework in an inter-organizational context due to magnitude of the world-wide digital transformation, the complex interactions between its stakeholders, and the long time period. HubWays project was envisioned as a network enabling co-opetition – vertical (i.e., between a grower, the auction, an LSP, a buyer) and horizontal (e.g., between LSPs) integration – in the floriculture supply chain. The Dutch floriculture network is a massive network of supply chain stakeholders. Inter-organizational collaboration, especially vertical integration, is a complex governance context. "You have a complete sector at one table," FloraHolland's Manager.

This study also has limitations. Due to HubWays' location (the Netherlands), the publications related to this collaboration are mostly in Dutch. We use these publications as a secondary source of data. The language barrier is bridged with the support of translation engines, such as Google Translate, and the confirmation from the Dutch-speaking author and our interviewees. Despite the limitations, this study contributes to identifying insights from a failing network digital transformation. Other networks that are envisioning a digital transformation can benefit from these lessons.

In the Netherlands, the floriculture supply chain continues to advance in improving its digital collaboration. DAVINC<sup>3</sup>I (Dutch Agricultural Virtualised International Network with Coordination, Consolidation, Collaboration, and Information Availability) project was started in parallel with the HubWays case (van der Vorst et al. 2014). The project aims to develop innovative logistics concepts supported by an information platform and collaborative business modes that support Dutch competitive strength (van der Vorst et al. 2016). Another project – the Holland Flower Alliance, an enterprising group of floricultural industry professionals dedicated to logistics innovation and sustainability supported by digital technology – was founded in 2016 by Royal FloraHolland, Schiphol Cargo, and KLM Cargo (Holland Flower Alliance 2020).

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