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Get back: analysing the impact of the COVID-19 pandemic on the Lowlands festival

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ABSTRACT

This article investigates the impact of COVID-19 through a case study of Lowlands, a music festival in the Netherlands. Analysing how the Cultural and Creative Sector is affected by and recovering from the COVID-19 pandemic has received growing attention among academics. This article contributes to this body of research by analysing the structure and dynamics of the production network of Lowlands, combining elements of the Global Production Network approach and Grabher's project-ecology framework. With this novel lens, we unravel the embeddedness of linkages between Lowlands' management and its partners. We conclude by showing how these strong ties are simultaneously Lowlands' strength and weakness, as recursive collaborations create an efficient production process but are also prone to fall away in crises like COVID-19, leaving the management without reliable alternatives. However, bonds of trust and friendship motivate and underpin mutual support, and therefore form a crucial key for its resilience.

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Festivals; cultural and creative sector; COVID-19; production network; project ecology

Introduction

In the summer of 2020, the large festival site in Biddinghuizen, a small village in a rural polder area some seventy kilometres from Amsterdam, remained almost completely empty. In the previous year, a crowd of 60,000 people spent three days at this site enjoying a wide variety of performers from the Netherlands and abroad as part of the Lowlands festival. The restrictions to halt the COVID-19 pandemic made mass gathering events such as Lowlands impossible in 2020 and the year thereafter. Lowlands was evidently not the only festival or large cultural event that had to be cancelled. Below, we will use the case of Lowlands to explore how this external shock has affected the production network of a large festival. After decades of strong growth, the COVID-19 pandemic has hit this important cultural and creative sector (CCS) very hard (Ziakas et al., 2021). Following successive lockdowns, the survival of many festivals has been endangered and it is not just the organisers of festivals that are in jeopardy, but also a wider range of stakeholders:

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notably performers; suppliers of temporary employment, video and sound equipment; catering firms; and whole armies of freelancers.

Below, we will zoom in on the impact of the COVID-19 pandemic, a unique external shock, through an in-depth case study of the production network of the Lowlands festival. Navigating a highly competitive sector, the annually organised multiple day festival, established in 1993, has evolved into one of the most prestigious and well-known outdoor festivals in the Netherlands, typically selling out within a few hours. The festival showcases a wide spectrum of music genres, including rock, pop, hip hop, metal, electro, techno and dance. Our focus, however, is not on the live performances, but rather on the structure and dynamics of the production network of Lowlands.

To be able to assess the impact of COVID-19, we first map Lowlands' pre-COVID production network and unravel the event's production process. To get a handle on this network, we use key analytical building blocks – various phases, spatial footprint, governance, embeddedness – from the Global Production Network (GPN) approach and combine it with Gernot Grabher's project ecology framework (Coe et al., 2008; Coe & Yeung, 2015, 2019; Grabher, 2002, 2004; Henderson et al., 2002). The GPN approach was initially used to study manufacturing production networks which had increasingly become disintegrated and unbundled with different phases of production taking place in different locations – often even on different continents (Baldwin, 2016; Coe et al., 2008). Nowadays, festivals also increasingly rely on complex spatially dispersed divisions of labour, and there as well we can point at the salience of various phases, spatial footprints, the issue of governance, and the role of embeddedness.

In addition to elements of the GPN approach, we use Grabher's theory on project ecologies to disentangle the various organisational layers of Lowlands' production network. Whereas the GPN approach unpacks production networks primarily in terms of economic relationships and flows within a complex value chain (Kloosterman et al., 2019), Grabher departs from a sociological perspective and looks at how different organisational categories are involved in temporary projects in the Cultural and Creative Sector. He distinguishes four categories based on the extent of their involvement in a project: the core team, the firm, the epistemic community, and personal networks. Combining these two approaches to analyse the Lowlands festival allows us to identify the crucial linkages and stakeholders within the production network. Doing this, we also address the knowledge gap as identified by Wilson et al. (2016, p. 28): "whilst the economic and social prospects of festivals are attracting growing policy, academic, and media interest, comparatively little is known about the micro-level processes upon which festivals are established".

We thus aim, first, to contribute to contemporary research by presenting detailed information on largely unexplored domains concerning festivals, such as stakeholder involvement, the role of partnerships and interactions, and the wider socio-cultural and institutional contexts in which these stakeholder relationships are managed (Gursoy et al., 2004; Wilson et al., 2016). As such, we respond to the call for a more integrative approach to study festivals (Andersson et al., 2013; Getz et al., 2010). Our second aim is to present a novel analytical framework that combines elements from the global production network and the project ecology approaches in a coherent way. Through applying this framework, we then seek to extend our conclusions beyond the specific context of

Lowlands in order to contribute to our understanding of festivals, resilience and the Cultural and Creative Sector as a whole.

After presenting our analytical framework and our methodology (sections 2 and 3), we provide a mapping of Lowlands' production network (section 4). Following this, we examine the impact of the pandemic and identify the components and stakeholders which have shown most vulnerable to the nearly complete drop in demand (section 5). We conclude by discussing the wider implications of our findings in terms of resilience of production networks (sections 6 and 7).

Theory: the festival sector through a GPN and project ecology lens

Due to the sector's reliance on site-based, physical experiences and the gathering of crowds, festivals were among the first to cancel activities and among the last to restart. Considering the huge impact of the pandemic, it is no surprise academics have started investigating the ways in which festivals were forced to adapt, recover and evolve their practices. Thus far, studies linking the pandemic and festivals have investigated topics such as the collapse of employment (Comunian & England, 2020); the adoption of and possibilities brought by digital streaming technologies (Brilli et al., 2022; Brzozowska & Galuszka, 2023; Gu et al., 2021; Hylland, 2022; Oliver & Lalchev 2022; Seraphin, 2021; Vandenberg et al., 2021); the extent of government regulation and support (Betzler et al., 2021; Dümcke, 2021; Joffe, 2021); the mental health of artists (Musgrave, 2022), and the resilience of cultural and creative sector more generally (Davies, 2021; Florida & Seman, 2020; Rowen, 2020; Takeda, 2022). This article aims to contribute to this body of literature by applying analytical elements of the Global Production Network approach and Grabher's project-ecology framework to the production network of Lowlands.

The GPN approach allows us to grasp the complexity of contemporary production networks in the Cultural and Creative Sector, which have often become spatially disintegrated (Coe, 2015; Kloosterman et al., 2019). Large and renowned festivals like Lowlands depend on a significant array of suppliers and partners, each bringing with them crucial resources (Larson, 2009; Mackellar, 2006). Getz (1991, p. 15) refers to these actors as *event stakeholders*: "those people and groups with a stake in the event and its outcomes, including all groups participating in the event production, sponsors and grant-givers, community representatives, and everyone impacted by the event". In the organisation of festivals, the stakeholders involved (which can be individual or collective, public or private, or members of volunteer organisations) must interact and collaborate (Presenza & Locca, 2012). Close planning and controlling of flows between stakeholders are required to ascertain that everything is well-prepared and arranged for the timely events (EC, 2017; Getz & Andersson, 2010). As such, festivals present great operational challenges (Smith et al., 2010), displaying what Richard Caves (2000, p. 8) has called "the motley crew" property when referring to the "complex teams" and "close temporal coordination of activities".

The GPN approach enables us to grasp the organisation of festivals by highlighting key analytical features of production networks. First, it approaches complex systems as structured in different phases (while trying to allow for their continuity and overlapping), seeking to reveal the key activities and interfirm relations that bring a product or service from its ideation to its finalisation where it can be consumed and archived. It

enables a disentangling of flows between interdependent stakeholders through which a product or service is co-produced (Coe et al., 2008). Second, the approach emphasises governance dynamics and power distributions within production networks: which actor (s) control, manage and sustain flows between stakeholders and which of them are able to capture the created value (Coe, 2015). Third, to understand these governance dynamics in its complexity, the GPN approach accentuates the notion of embeddedness – how key activities, stakeholders and events are shaped and affected by broader societal contexts.

By applying the GPN approach to Lowlands, we address several unexplored themes in the current literature on festivals. By slicing up the production process into different phases, this approach allows us to zoom in on the micro-level processes through which a festival is organised, as recommended by Wilson et al. (2016). Furthermore, this approach goes beyond the mere creative and executive part of the festival itself by including analyses of the complex logistics preceding the event – conceptualisation, production, distribution, archiving and reflection. The GPN framework does not approach production processes as linear but rather as circular or iterative, in which a product or service is the outcome of multiple feedback mechanisms (Coe & Yeung, 2019). This is very much in line with what Throsby (2010, p. 25) has observed: in some production processes in the CCS, there is no simple, neat sequence, and “[t]he apparent linearity of the value chain may be replaced, for some cultural products, by something more akin to a value network, where multiple inputs, feedback loops, and a pervasive ‘value-creating ecology’ replaces a simple stage-wise process.” In this way, we conceptualise Lowlands as a continuous process in which stakeholders seek to evaluate and innovate in order to successfully organise future editions.

In addition, we use Grabher’s framework of project ecologies to complement the GPN’s mainly economic-geographic lens with a more sociological perspective. Grabher (2002) has focussed specifically on cases in the cultural and creative sector and highlighted the importance of temporary organisations. “When studying creative industries and cultural industries, you discover: it is not necessarily the permanent firm which is the prime locus of operation. Rather, it’s short term and temporary projects which are the central organizational unit” (Grabher, 2008). Grabher challenges the ontological and epistemological status of the firm as the central object of analysis in research, and advocates instead for the centrality of project ecologies due to the increasing importance of personal networks and “perforation of the firm boundaries”.

Grabher identifies four organisational layers in terms of the extent of their involvement in a project: the core team (which “... epitomizes temporal continuity and accountability”, Grabher, 2004, p. 1495), the firm, the epistemic community (which “... involves all project participants who contribute to the production of knowledge to accomplish the specific task, even if only temporarily and partially”, Idem: 1493), and personal networks (“Project ecologies also comprise personal networks that endure and stretch out beyond the manifest pattern of the actual production networks”, Idem: 1502).

We will use these two analytical perspectives to explore the following research questions and thereby respond to the call of Wilson et al. (2016, p. 30) who observed that “[t]he role of partnerships is an important, yet largely unexplored, domain of festival research”:

What is the configuration of the production network of the Lowlands festival in terms of production phases, actors, location, and governance?

Which actors are involved in the organisational layers of Lowlands' production network and what do they contribute?

What has been the impact of Covid-19 on Lowlands production network?

Method

To address these questions, we focus on the case of Lowlands as this will enable us a disentangling activities, dynamics and causal linkages within a network and its situatedness in socio-cultural and institutional contexts (Eisenhardt & Graebner, 2007; Ridder, 2017), which is crucial to gather a detailed understanding of the impact of COVID-19. Lowlands was selected as a case study due to its prominent position in Dutch event planning, being known as a frontrunner in logistics and backstage coordination. Additionally, unlike many newly established festivals, Lowlands' continuity, with nearly 30 consecutive editions organised, presented a suitable opportunity to examine how an external shock like COVID-19 could affect longstanding ties within the network. By focusing on the more structural aspects of Lowlands' production network, our findings are also relevant for other festivals.

The case study is analysed through reports and semi-structured in-depth interviews with stakeholders involved in the production of Lowlands. Because of the considerable size of Lowlands, delineating the network and deciding which stakeholders were interviewed was crucial. In order to establish this boundary, Lowlands' director provided us with an organisational chart, detailing the full spectrum of stakeholders involved in the festival's production. A positional approach was used, meaning that we selected actors based on their roles, titles and positions within Lowlands' network (Laumann et al., 1989). A total of ten stakeholders were interviewed, including both the director and technical director of Lowlands, employees of MOJO (the firm that organises Lowlands), the municipality, and the suppliers of Lowlands' stages, video and light and sound equipment. As a result, we examined intra-firm relationships (within MOJO), inter-firm relationships (between different suppliers, and in relation to MOJO), and extra-firm relationships (between the municipality and MOJO). Including different types of actors and sets of relationships allowed for a more comprehensive and nuanced analysis of power within the network (Yeung, 2021). No interviews were conducted with freelancers; instead, discussions were held solely with the agencies that employed them. Nonetheless, valuable insights were gained from a recent study by Berkers et al. (2023) on freelancing in the music sector in the Netherlands and their experiences during the COVID-19 pandemic.

Except for the first interview conducted at MOJO's headquarters in Delft, the interviews took place via video calls due to the pandemic. The interviews, which lasted between 45 and 120 min, were conducted throughout the year 2020 and part of 2021, in order to gain better insight into the developments of COVID-19. In 2022, feedback from stakeholders was once again provided to allow for a refinement of the results, creating a flexible and iterative process in which we moved back and forth between data, theory and findings (Bryman, 2012). The respondents were asked to sign an informed consent form in which the ethical procedures for academic research and the conditions for

participation were explained. The interviews were audio recorded, transcribed and analysed through codes derived from the GPN approach.

Results

Lowlands' pre-COVID production network

Departing from the GPN approach, Lowlands' production process can be disentangled into five distinct value-adding stages. As shown in Figure 1, these include creation, distribution, production, exchange, and archiving. For each phase, the figure outlines the actors involved, their location, and their specific tasks. We use Coe and Yeung's (2015) distinction of actors (notably lead actor, strategic partners, specialised suppliers, generic suppliers, and consumers) in order to specify roles and power dynamics within the network.

Lowlands' management, located in Delft, carries out the role of lead actor. The team, consisting of no more than ten employees, spends almost the entire year preparing for the three-day festival taking place in August. Strategic partners enable production by providing essential conditions for establishing the event (Coe & Yeung, 2015). In Lowlands' production network, strategic partners are sponsors, the owner of the site, the ticket distributor, the media, and the municipality. Lowlands' management depends greatly on these actors to, for instance, issue the necessary permits. Specialised suppliers offer state-of-the-art products and services and possess explicit knowledge and skills which puts them in a more powerful position than generic suppliers (Coe, 2015, p. 488). In Lowlands' production network, these include the (inter)national artists, the suppliers of sewerage installations, video, stages, and sound. Generic suppliers offer relatively standardised products and services which can be more easily replaced (Coe & Yeung, 2015). Think of the caterers, security and cleaners working the event. The majority of Lowlands' strategic partners and suppliers are based in the Netherlands because of linguistic, cultural, geographical and economic barriers, as well as Dutch companies' considerable

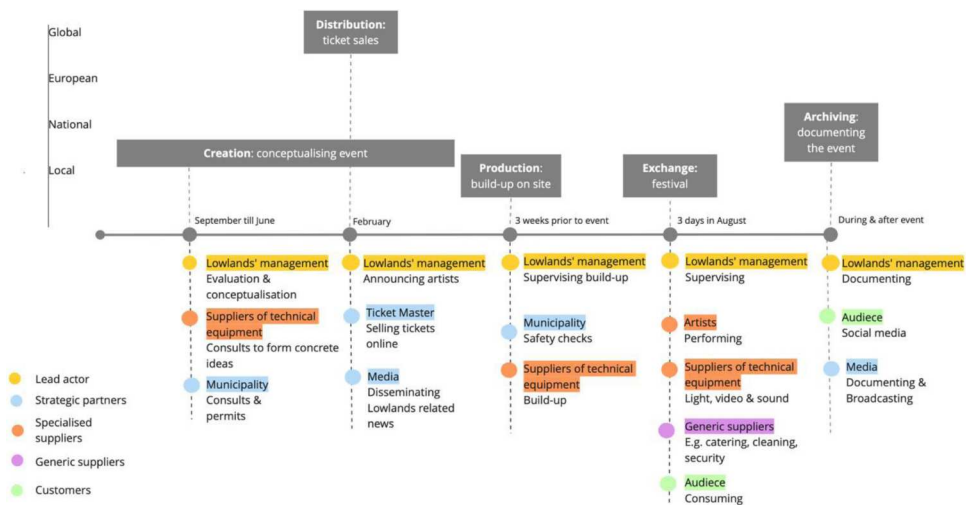


Figure 1. A timeline of Lowlands' production process Note: Figure is based on fieldwork. Own work.

expertise in festival equipment. The audience consists of approximately 60,000 consumers, of which the large majority is from the Netherlands.

In the creation phase, Lowlands' management evaluates and reflects on the previous edition in order to conceptualise ideas and improvements for the coming event. To do this, the management relies on the expertise of a diverse set of strategic partners and specialised suppliers. The creation phase starts shortly after the previous edition has finished and ends only right before the build-up on the festival site, thereby overlapping with the distribution phase. While contemplating with strategic partners and specialised suppliers how ideas can be worked out in concrete and feasible terms, Lowlands' management will promote the event, announce names of performing artists and start the ticket sales. Tickets can be purchased online from Ticketmaster, a global player in the event sector. The production phase starts three weeks before the festival takes place. On the festival site in Biddinghuizen, the management prepares the build-up of stages, sewerage systems, sanitary facilities, beverage and food stands, and the camping site. This phase displays a high degree of complexity due to time pressure and close temporal coordination of activities and a multitude of actors. As the director of Lowlands argues, "a logistical dragon". Following the build-up is the exchange phase, in which the three-day festival takes place during a long weekend in mid-August. Lowlands' management, strategic partners, and specialised and generic suppliers are closely collaborating to showcase a diversity of performances from national and international artists, for the audience to enjoy. Finally, in the archiving phase, the event is documented. During and after the event, the Dutch public broadcaster provides extensive coverage of performances, and national newspapers reflect on, and review the festival. Lowlands' management also collects various relevant statistics such as visitor profiles and their degree of appreciation for the purpose of evaluation.

Flows and relationships within the network

Lowlands' specialised suppliers and strategic partners are closely involved in Lowlands production process. Their involvement starts in the creation phase, during the festival's evaluation, and continues in the following months during brainstorm sessions on what has been learned and how best to move forward to achieve innovation. According to Lowlands' director, tossing ideas around is very important because it *"ensures a better result than if we determined everything ourselves"*. The expertise that suppliers bring with them provides the management with specialised knowledge and different perspectives, ensuring the festival's improvement on several layers. Strategic partners such as the municipality, the police and the fire department may, for instance, depart from a different responsibility, but ultimately strive for the same goal: *"to pursue a safe and beautiful festival"* (municipality representative).

Lowlands has built relationships of trust and a level of shared experience and understanding with these actors on the basis of previous successful collaborations – latent ties that are not easily replaceable. Lowlands' management depends on these partners for their material and technological assets and knowledge to lift the festival to a higher level. They try to foster these relationships and even though it is not permanently determined, there is often no doubt that Lowlands will, for instance, work with Faber for video, with Ampco Flashlight for sound and light, and with Stageco for stages, roofs and tents.

Over the years and through processes of successive learning, they have grown aware of each other's roles and capabilities, allowing repetitive scripts to form and to increase Lowlands' efficiency. This knowledge that suppliers have gathered from collaborating on Lowlands is highly appreciated since it is not easily obtainable. Several actors have emphasised how difficult it is to acquire knowledge through formal education, because *"the real knowledge in these kinds of matters is learnt on the job by experiencing it"* (Ampco Flashlight). Knowing what Lowlands' management can expect from its suppliers is considered important because of the time pressure under which they work. It is not only desirable, but absolutely crucial that everything comes together at the perfect time, to prevent the production chain to be cut up.

Lowlands' latent ties and routine partnership interaction enabled learning by repetition. Learning by switching ties and forming new partnerships, on the other hand, can also be an important tool to improve production and strive for originality and innovation (Grabher, 2004). However, for Lowlands, there is not always a possibility to do so. Because of Lowlands' significant size, economies of scale are crucial and not many suppliers are able to deliver the amount of equipment that is asked for. The director of Lowlands, for example, calls Faber *"a major player and specialist in the video field"* that, given Lowlands' demands, has almost no other competitors. The director of Ampco Flashlight argues to be in the same position: *"We are never really in competition when it comes to Lowlands. They have discovered that if you look at the total palette that they have to offer, we are the only ones capable"*. The limited possibility to replace specialised suppliers, in combination with effective collaborations and a *"never change a winning team"* mentality, ensures that Lowlands' latent organisation remains intact.

However, when it comes to booking performers, originality is crucial. Although some acts have performed at the festival more than once, Lowlands' management strives to surprise its audience by scheduling new acts each year. Lowlands' director keeps an eye on artists who are touring during summer months to promote new albums. When contacting these artists, MOJO's collaboration with Livenation – a global player in the event sector – can prove useful because of its significant network. In addition, in contrast to the strong ties with specialised suppliers, Lowlands' collaboration with generic suppliers can also change per year. These partnerships are less important in different phases of the production process. The generic suppliers are primarily active during the three-day festival but are not as involved in the preceding phases.

Governance of the network

There is a mutual dependency between Lowlands' management and its specialised suppliers and strategic partners: they rely on MOJO as an important customer and perceive the festival as an opportunity to exhibit their capabilities, and Lowlands counts on them to deliver expertise, skills, and equipment. Especially with regards to equipment, Lowlands' management seeks to outsource as much as possible, as explained by the technical director:

We are organised in such a way that we want to remain flexible. Apart from a few crucial disciplines such as artist booking, which is the heart of the business, we aim to outsource a lot to innovate when possible. We prefer, for instance, not to invest in our own technical equipment.

Contrary to MOJO, which head office is located in the city centre of Delft, their suppliers are based outside the major Dutch cities to store equipment. For MOJO, it is much more cost effective to hire this and, in addition, retain flexibility.

The mutual dependency determines how Lowlands' management maintains its partnerships. In contract negotiations, the economic rationale is not always the most dominant: there are companies that offer lower prices, but this is neglectable compared to the worth of long-term collaborations and the advantages of accumulated experience. Lowlands' management argues to prefer expensive suppliers that have proven to be trustworthy over low-cost deals because they cannot allow anything to go wrong due to the festival's time sensitivity. On top of that, it is important that specialised suppliers remain financially healthy in order for them to invest in state-of-the-art technology. The management therefore claims not to "squeeze deals". In fact, when they determine with certainty that they need a supplier's equipment and services in the coming years, they draw up multi-year contracts. Such a guarantee offers financial security to the suppliers and makes it easier for them to receive a loan from a bank to invest in their business. For Lowlands, this is equally important as it enables the festival to innovate. A case that illustrates this is MOJO's relationship with Michels Technische Dienst (MTD), which started as a local sewage company. Lowlands' management persuaded MTD to invest in a sewerage system that specialises in timely events, by promising to use it in the coming years. This guarantee reduced the financial risk and turned out well, as Lowlands' director proudly acclaims: "*and so this company has grown from nothing to the company that is installing water and sewerage worldwide for the Olympics*".

Lowlands project-ecology

Following a mapping of Lowlands' production phases and flows between actors, we can distinguish the festival's organisational layers. Figure 2 explains Lowlands' project ecology using Grabher's terminology of the core team, the firm, the epistemic community and personal networks. Although Figure 2 is not exhaustive in the sense that it lists the totality of actors involved, it does provide a useful schematic representation of Lowlands' network.

The first layer, *the core team*, is presented in the middle of the figure to accentuate the central position of Lowlands' management team. As we have seen, this team actively plans the three-day festival throughout the year, and bears chief responsibility for activities in the creation, distribution, production, exchange, and archiving of the event. In each phase, the management assembles the necessary actors and coordinates flows between them, thereby carrying out the role of lead firm (Coe & Yeung, 2015). The second layer in Grabher's framework presents the *firm* that employs the core team. The firm handles various related projects, thereby accruing a portfolio of specific skills and knowledge (Davies, 2021). Lowlands' management team is part of MOJO, a Dutch event company that annually organises over 150 concerts and festivals, and MOJO itself is owned by international event company Livenation. MOJO (and Livenation more indirectly) provides the management team with the necessary budget to realise plans, but are not or barely involved in the creative production of Lowlands. As Lowlands' technical director explains:

Livenation realises very well that the market is different. You can already observe that within Europe, let alone globally. Livenation has a say in general aspects at MOJO's management

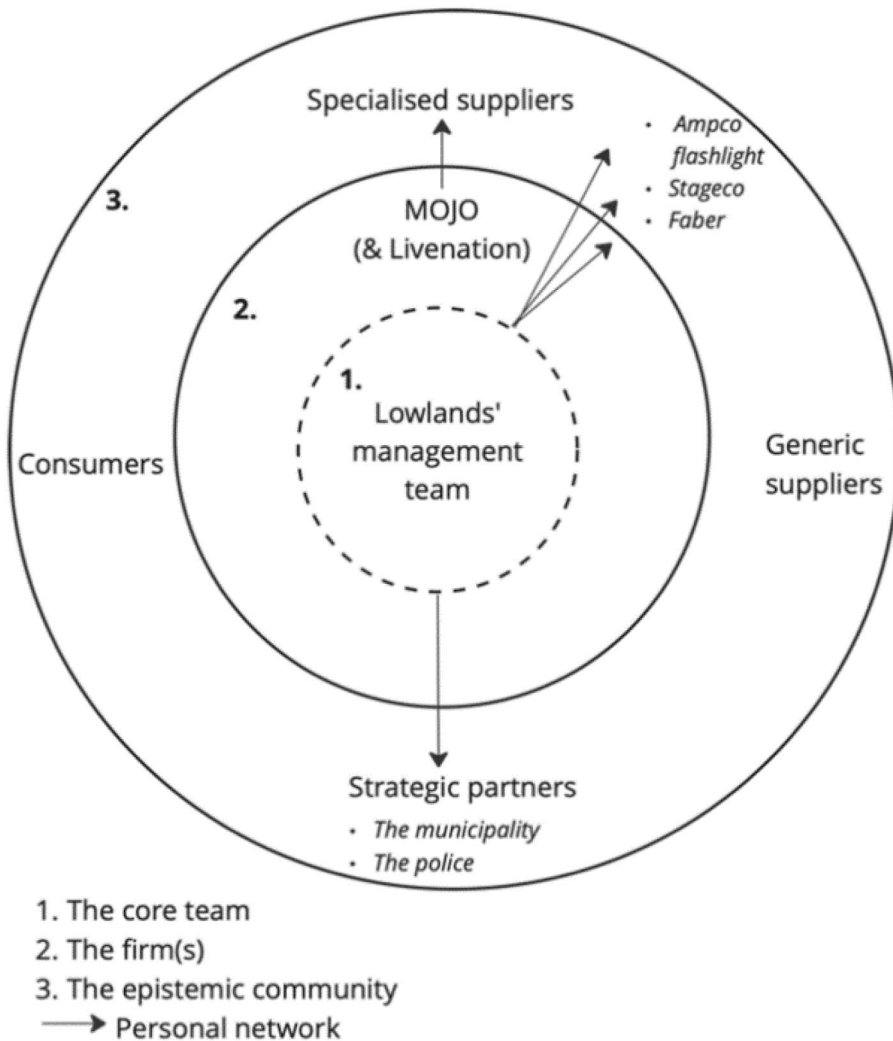


Figure 2. Lowlands' project-ecology. Note: Figure is based on fieldwork. Own work.

level, but in terms of projects their involvement is minor due to required local knowledge, insights, experiences, and a feeling of the national market.

Yet, after Lowlands has taken place, flows of money and knowledge transfer back to the firms. About these flows, Lowlands' project manager states the following:

Lowlands has always been MOJO's testing ground, so that's where most of the money and innovation is. In all areas, from showers to toilets to light, sound, video. Together with our suppliers, we go down a certain path to take it to a higher level. [...] This quality difference in terms of production makes Lowlands a flagship.

After a new installation of, for instance, a stage, tent or video is successfully tested at the Lowlands festival, MOJO introduces it at its other festivals. Such flows imply learning processes and knowledge accumulation for both Lowlands' management, MOJO and the supplier.

The third layer in Grabher's framework (2004) is the *epistemic community*, extending beyond the boundaries of the individual firm to include all project participants. In Lowlands' production network, strategic partners are for instance the owner of the site, the municipality and the local police department. Specialised suppliers include the (inter)-national artists, the suppliers of sewerage installations (MTD), video (Faber), stages (Stageco), and sound and light (Ampco Flashlight). As we have seen, Lowlands' management depends greatly on these actors to deliver state-of-the-art products and services and to offer explicit knowledge. Generic suppliers offer relatively standardised products and services which can be more easily replaced (e.g. caterers, security and cleaners working the event). Finally, the consumers are Lowlands' audience, each year consisting of approximately 60,000 visitors.

Beyond these three layers, Grabher (2004, p. 1493) discusses the wider fabric of *personal networks*, that "endure and stretch out beyond the actual project". According to Grabher (2008), a danger within temporary projects is that they tend to forget quickly: "As soon as the project task is completed, the project team is dissolved, the knowledge that is acquired in the project is getting dissolved" (Grabher, 2008). To protect, institutionalise and use the accumulated knowledge, skill and expertise built up in a project, latent organisations with inter-personal and recursive co-productions can be highly valuable, especially considering many productions must finish under severe time constraints (Hobday, 2000).

The personal networks and latent ties that arise to counter the risk of "organizational amnesia" (Grabher, 2004), can also be observed in Lowlands' production network, and are shown in graph 2 by means of arrows. Rather than arm's length deals, the dynamics in Lowlands' production network indicate long-term relationships with high degrees of trust and loyalty between the core team and specialised suppliers and strategic partners in the epistemic community. The management team has, for instance, been working with the same supplier of the sound and light systems since the start of the festival, and some regular specialised suppliers are not only involved in Lowlands but also in other events organised by MOJO. This points to a latent organisation that, although dormant at times, endures through time with temporary peaks in employment to complete specific projects (Ebbers & Wijnberg, 2009; Starkey et al., 2000).

These personal networks show a perforation of firm boundaries: Lowlands' management and MOJO more generally work very closely with a set of partners. The latent relationships offer strength and efficiency when solving problems, since actors have gradually developed a similar language, repetitive scripts and high levels of trust. Accordingly, Lowland's latent network has contributed to the festival's success and the management wishes to keep it intact. However, with the advent of the COVID-19 pandemic, these valuable relationships have become endangered, as we will demonstrate below.

The impact of COVID-19 on lowlands

MOJO, livenation and lowlands' management

With the arrival of the COVID-19 pandemic, the majority of MOJO's and Livenation's activities, which are based on live events and the gathering of crowds, came to a standstill. The revenues of both companies took a heavy blow. MOJO was forced to dismiss 43 of its 138

employees as of October 2020 because, as the director of Lowlands explains, “*there was simply nothing, literally nothing to do for a large part of MOJO’s employees*”. For the edition of 2021, MOJO had already prepared the festival’s build-up before learning one week prior to the event that new restrictions would make it unmanageable to continue. Consumers were given the choice to receive a refund, or to hold on to tickets for Lowlands’ next edition. Because many opted for the latter, Lowlands was able to finance the lost investments.

In the meantime, MOJO experimented with digital concerts, but this could hardly replace the real-life experience of festivals and ended up costing more than it generated. Yet, due to the companies’ large operative scales, they managed to absorb this loss and survive the pandemic. In addition, MOJO received financial support from the Dutch government. In what was called “Temporary Emergency Measure Bridging Employment” the government financially supported companies to continue to pay and retain employees with permanent or flexible contracts, as a means to preserve jobs. Following this measure and the government’s assessment of necessity, MOJO could temporarily receive 30,000 euros per month.

Despite two rather difficult years, MOJO is positive towards the future. Due to the mandatory minimisation of social contacts of the past years, they have noticed an increase in the demand for concerts and festivals and even expect new records for ticket sales in the coming years. According to Lowlands’ director, the pandemic has shed light on the importance of live events:

An event is a gathering of like-minded souls. The content is almost like a filter. You know that when you go to a concert or festival, that’s where I meet my peers. [...] Everyone is potentially a friend of yours. There are no confrontational groups. That’s what people miss so much. Nostalgia for an event with your peers.

As a result of this anticipated longing for collective experiences, MOJO has rehired (most of) its employees: “*It’s full steam ahead*”.

After the two cancelled editions of 2020 and 2021, Lowlands’ management could finally organise the festival in 2022, but it required more creative thinking than usual, as a result of lost investments. In addition, many international artists did not yet dare go on tour because insurance did not cover costs in case of a cancellation due to the pandemic. With the uncertainty of a possible regrowth in infections, Lowlands’ management was forced to book mainly Dutch artists.

Although MOJO and Livenation were able to absorb the financial blow caused by the pandemic, many specialised suppliers did not, and therefore Lowlands’ management experienced more trouble finding partners that could handle large assignments as efficiently as it used to. According to Lowlands’ director, the difference between MOJO and Lowlands’ management on the one hand and the suppliers on the other is the costs and expenditure pattern:

MOJO has some fixed costs, but not a lot. We have a building, a computer, a telephone. And although we are not getting enough from the government, we are not running out of money. But all those suppliers we work with are rental companies. They don’t make big profits like we do, and they do not have the same financial buffer. Plus, they have many ongoing lease contracts to finance their equipment. Equipment that is now stored in huge warehouses, but in principle these should be empty. Due to these loans, their monthly costs are higher.

Following suppliers' lack of income, Lowlands' management fears for the infrastructure surrounding them. As we have seen, these relations are crucial for Lowlands' co-production.

Epistemic community

It appears that the vulnerability in Lowlands production network does not reside with MOJO, but within the epistemic community and, in particular, the suppliers Lowlands' management collaborates with, such as the suppliers of stages, power, sanitary facilities, sound, and light. In addition, many companies in the temporary employment sector have filed for bankruptcy to minimise debt. Yet both Lowlands' management and suppliers are highly dependent on these companies to hire freelancers for temporary peaks in employment. For instance, four out of the five temporary employment agencies Stageco used to work with, went out of business. Although many employment agencies have started up again, they had to start from scratch and it is unclear whether enough freelancers will be available, both those who perform relatively standardised tasks such as putting up fences as well as those that possess highly specialised technical skills that are not easily replaceable. Especially among the latter, the director of Lowlands is afraid that many will not return to the festival sector anytime soon:

We employ a lot of freelancers who earn 150,000 a year. They go from one major television production to another all year round. And they have spendings: they have a mortgage on a big house, drive a nice car, a family. They were the kings of the business and they are now forced by the government to limit themselves to 1,000 euros per month. So, what do they do? They have skills, they are production managers, designers, AutoCAD artists who put together entire productions. They went looking for jobs in other industries. Many now work in construction. They took a course from a major construction company: becoming a designer in construction with AutoCAD. They are gone, and they are not coming back for the next two years because these industries offer more security and stability – 9 to 5 jobs.

The main problem, thus, is the significant outflow of staff and experience in the epistemic community (cf Khlystova et al., 2022). For example, Ampco flashlight, Lowlands' supplier of light and sound, went from 430 employees to 100, of which only 4 out of 16 project leaders remained. This proved worrisome as Ampco flashlight's employees possess explicit knowledge and skills with regards to Lowlands' production process, which is hard to come by without having experienced and worked on Lowlands' previous editions. New employees will not enter the sector with the same level of skill. As the municipality representative argues:

In this sector, you learn through trial and error and by rolling into the sector step by step. Before working for the municipality, I spend years carrying out different tasks at festivals. I've steered a forklift, cleaned toilets, checked tickets behind a counter, helped bands set up, I've been behind a light table. From this experience, you learn the most. And of course you have formal educations, but the real knowledge is based on experience.

The same is argued by Lowlands' supplier of light and sound:

There are training courses, and of course you learn things. But the real knowledge in this kind of business, you can only learn it on the job where you can practice. You really have to feel and experience it, especially when it comes to sound.

Furthermore, along with the disappearance of experience, the gradually built-up customs, distribution of tasks and roles, the officially required technical knowledge and skills disappear too. Many freelancers ought to be officially trained and acquire specific skills to adhere to safety regulations. The construction team, for example, must follow courses for forklift driving and climbing at height. It will take time for the sector to recover, as the municipality representative argues: *“Of course new people will enter, because people like to work in the festival sector, but they have to gain experience. Lowlands and the municipality as well will need to put more effort in sorting everything out, overseeing activities”*. In addition to personnel, equipment has also become scarce. A Lowlands project manager for instance recalls: *“Last Lowlands, our cabin suppliers said six weeks in advance that they could not deliver 80 cabins after all. The reason: he had them all on construction sites.”*

Thus, despite MOJO’s relative financial stability, they remain anxious because of staff and equipment shortages among crucial suppliers, which were heavily impacted by COVID-19. Whether these partners will recover and rehire is doubtful considering the move of many freelancers to more resilient sectors. Accordingly, the festival sector is faced with a loss of expertise that is not easily restored due to the weight of successive learning: the most valuable expertise is acquired over the years from previous collaborations and from trial and error. The sector has emptied out, and the consequent lack of experience hurts the festival and may act as a barrier to organise it as efficiently as the audience expects.

Conclusion

Above, we have zoomed in on the impact of the COVID-19 pandemic, a unique external shock, through an in-depth case study of Lowlands, one of the most prestigious and well-known festivals in the Netherlands. To analyse and identify the components and stakeholders which have shown most vulnerable to the nearly complete drop in demand, we have provided detailed insights into Lowlands’ production network. Using a novel analytical lens that combines elements of the global production network approach and the project-ecology framework, we were able to reveal how resistance to shocks and precarity is unevenly distributed within the network, depending on the transferability of actors’ skills.

Lowlands’ production network can be divided into four organisational layers: the core team, the firms, the epistemic community, and personal networks. Lowlands’ management takes on a central position within the network and – as the core team – bears chief responsibility throughout production, overseeing and coordinating activities leading up to the event. MOJO and its parent firm Livenation have delegated the planning and realisation of Lowlands to that core team. They trust the core team to have the necessary expertise and capability to make the festival a success.

The core team works very closely with a fixed set of actors which constitute an epistemic community. Throughout different phases of production, the core team relies on these actors for their material, technological and creative input to lift the festival to a higher level. Over the years, Lowlands’ reliance on these specialised suppliers and strategic partners has further increased along a path-dependent trajectory as previous collaborations and processes of successive learning have allowed repetitive scripts to form.

They have grown aware of each other's roles and capabilities, and such relationships of trust and understanding are highly valued, especially with regard to the event's time sensitivity. As such, we can identify Grabher's (2004) fourth layer, i.e. *personal networks* that "endure and stretch out beyond the actual project". Lowlands' core team tries to foster its latent relationships with actors in the epistemic community as repeated cycles of interaction and years of shared experience reduce uncertainties and risks and increase the festival's efficiency. Innovation, problem-solving, and creativity have become highly institutionalised and ingrained in the routines of these partnership interactions, thereby somewhat creating a perforation of firm boundaries (Grabher, 2004; Larson, 2009).

Yet, when the gathering of crowds was banned to halt the COVID-19 pandemic, the divide between Lowlands' core team and other actors in the epistemic community became more evident. The organisational layers in Lowlands' production network showed different degrees of vulnerability. Lowlands' core team was able to survive due to the deep pockets of MOJO and Livenation. Many suppliers in the epistemic community, however, could not rely on such financial buffers and were forced to lay off employees. Like many freelancers, these employees, often with considerable technical skills, started to look for other career opportunities. Their job search coincided with a booming demand for such workers in construction; notably in the installation of solar panels and heat pumps, taking their skills and experience with them as they left the sector. Thus, Lowlands' latent organisational structure has turned out to be both a strength and a weakness, presenting itself as a double-edged sword. On the one hand, the personal networks and recursive collaborations with actors in the epistemic community created an efficient production process in which diverse skills are complementary to each other. Like many advanced ecosystems, close ties reduce transaction costs and contribute to both product and process development (Elfring et al., 2021; Scott, 2000). In addition, there are also costs involved in having two specialised suppliers offering the same kind of product or service as this not only increases the transaction costs but might also result in contestation and competition. On the other, it has made Lowlands' core team increasingly dependent on a few highly specialised suppliers which are hard to replace. As we have seen, their knowledge can only be gained through years of collaboration and experience from previous editions of the festival. Due to the pandemic, many of these suppliers were forced to lay off workers or even had to leave the festival sector altogether. Ties between actors in the epistemic community were no longer self-evident and this undermined the production network of the festival, making it vulnerable to disruption. This strategic trade-off is deeply woven into such an organisational structure.

Despite Lowlands being in a vulnerable position due to their dependence on suppliers that are not easy to replace, these strong ties are at the same time a crucial key for the continuance of the event. The personal networks formed over many years of intense collaboration have created bonds of trust and friendship which motivate and underpin mutual support. Because of the threat to Lowlands' production network, MOJO offered support to crucial suppliers in the epistemic community, not only out of economic self-interest, but also out of goodwill and sentiment. Lowlands getting back on its track after the COVID-19 shock was, among other things, made possible by these strong ties in the personal network.

Discussion

The Cultural and Creative Sector, as shown by the case of Lowlands, operates within the context of a highly volatile market (Caves, 2000). This stimulates the formation of temporary and fluid networks in order to adequately respond to fluctuating demand. This dynamic environment often leads to a high prevalence of flexible and non-standard employment arrangements, where actors frequently shift between networks to participate in ephemeral cultural activities (Comunian & England, 2020; Currid-Halkett & Ravid, 2012; Gustafsson & Lazzaro, 2021; Watson & Beaverstock, 2016). Consequently, actors within the CCS often experience vulnerability and precarity in their employment situations. In navigating challenges associated with casualised labour and in an attempt to regain some sort of security, relationship management becomes essential. Actors often prioritise the nurturing of ties in order to establish enduring personal connections despite the transient nature of their collaborations (Hermes et al., 2017). This commitment to long-lasting ties, sometimes even at the expense of (at least short-term) economic self-interest, highlights the interdependence between professionals and underscores the resilience ingrained within networks (De Klerk, 2015; Grabher, 2002, 2004; Pareja Eastaway, 2016; Watson, 2012).

The case study of Lowlands serves as a prime example that resilience is partly located in personal networks. Resilience is “the capacity of an ecosystem to absorb and recover from shocks and disturbances while maintaining overall ecosystem structure and function” (Ghazoul, 2020, p. 110). While Lowlands did not completely restore to its pre-COVID state of functioning, its ability to bounce back after the pandemic resided in the fact that the central actor of the production network, MOJO, was all too aware of its dependence on its specialised suppliers. The combination of this dependence, trust and strong personal ties built over the years, prompted MOJO to support these suppliers when the crisis struck. Partly thanks to this buffer, then, MOJO was able to bounce back and organise the Lowlands Festival again in 2022. Hence, a crucial aspect of the network’s resilience lies in actor’s flexibility and adeptness at maintaining strong relationships to sustain their network connections as a strategy to navigate the ups and downs of the market.

Lowlands’ ability to innovate is also made possible by strong ties in the personal network and a willingness from both the core team and specialised suppliers to nurture and foster these ties. Mutual support in recursive collaborations is key to protecting, preserving and institutionalising the accumulated knowledge, skill and expertise built up in a project, thereby countering risks of organisational amnesia (Swan et al., 2010). The personal networks then, play a crucial role in enhancing the cultural value of projects within the CCS, as actors are able to learn and adapt from previous collaborations, ultimately strengthening the sector as a whole.

Finally, our study shows the importance of using an approach that is sensitive to the specific political economy of the CCS. In recent years, researchers have advocated to study the CCS through the lens of ecosystems (Berkers et al., 2023; De Bernard et al., 2022; Holden, 2015; Komorowski, 2019; Salder, 2023; Virani, 2023). By adopting a bottom-up, more comprehensive approach, policymakers can develop more effective strategies to support the sector, recognising the collaborative nature of the CCS while considering contextual nuances and non-economic factors. This analysis of the impact

of COVID-19 on Lowlands contributes to this methodological debate by combining a more economic, production network perspective with a project-ecology approach that emphasises the socio-organisational dimensions. The GPN approach provided a useful tool to unpack Lowlands' production network primarily in terms of economic relationships and flows (cf. Kloosterman, 2023), highlighting the micro-processes leading up to the event, and revealing how different stakeholder contributed to the outcome along different phases of the production process. Combining this approach with a project-ecology perspective added a crucial sociological layer to the understanding of production networks. In this way, our analysis went beyond a mere mapping of the linkages of the network and incorporated a rich-actor view to grasp the importance of the social embeddedness of linkages between actors. An analysis of the organisational structure of production networks in the CCS from a viewpoint of personal networks, relationships and actors is able to disclose crucial dynamics and important conditions for successful recurrent production and resilience after unexpected developments. Uncovering these different layers is essential to understand how the CCS functions in real life.

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